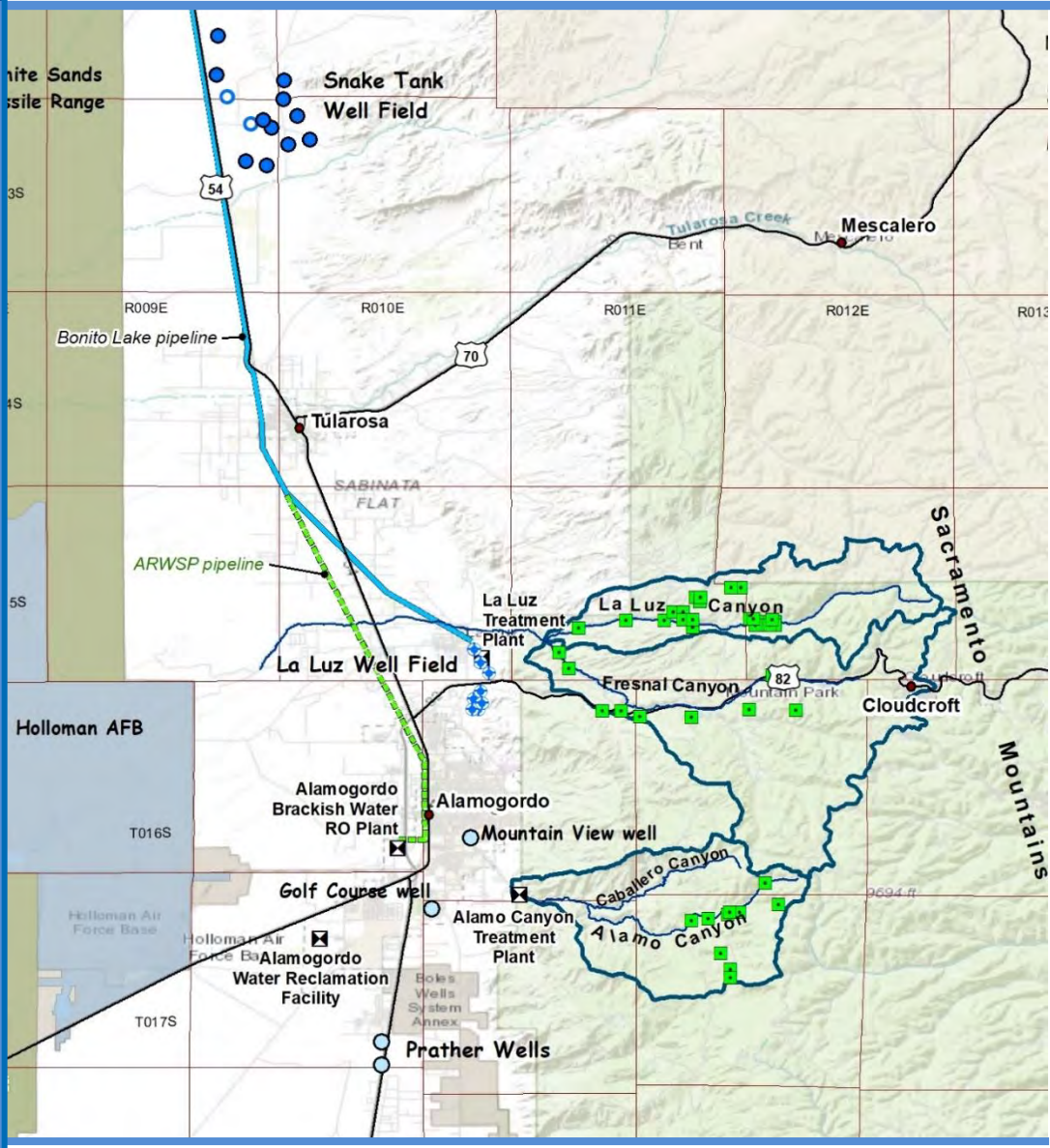
CITY OF ALAMOGORDO
40-YEAR WATER DEVELOPMENT PLAN
2021 TO 2060



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NOVEMBER 2021

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40-YEAR WATER DEVELOPMENT PLAN
2021 TO 2060

by

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prepared for

City of Alamogordo
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CITY OF ALAMOGORDO 40-YEAR WATER DEVELOPMENT PLAN 2021 TO 2060

EXECUTIVE SUMMARY

Pursuant to New Mexico Office of the State Engineer revised permit T-3825 et al., the City of Alamogordo is required to submit a progress report on their 40-Year Water Development Plan every 5 years. This updated Water Plan reflects the 2021 to 2060 planning period.

The City's water planning efforts have been in response to a number of factors, including:

1) A significant reduction in surface water supply due to drought, watershed conditions, and climate change has placed critical limitations on the long-term reliance on surface water. For example, Bonito Lake supply was lost in 2012 due to the Little Bear Fire, and no supply has been available from Bonito Lake since that time.
2) There are significant hydrogeological and administrative limits on local fresh water supplies, including surface water and groundwater, that inhibit further development of the resource.
3) The City has determined that desalination of brackish groundwater, under the Alamogordo Regional Water Supply Project (ARWSP), represents a viable and economic source of supply that will be conjunctively used to reduce the City's vulnerability from drought-sensitive surface water supply.

The City of Alamogordo has been pro-active in water resource planning and development to ensure a safe and reliable water supply by implementing the following:

1. Implemented Water Conservation Program including an increasing block water-rate structure, and a reclaimed water system;
2. Covered and lined reservoirs to eliminate seepage and evaporative losses;
3. Implemented the well replacement program;
4. Implemented maintenance of surface water sources with full-time dedicated staff;
5. Performing work to restore Bonito Lake;
6. Permitting, construction, and operation of the ARWSP.

This City of Alamogordo 40-Year Water Development Plan, 2021-2060, is the third update to the Plan for the period 2005-2045 (Livingston Associates, John Shomaker & Associates, Inc.), upon which the diversion quantity for revised permit T-3825 et al. was based. The original Plan contained numerous potential water development alternatives, and identified the ARWSP as the alternative to meet the City's long-term water supply needs. The City has been implementing various components of the original Plan, including the ARWSP.

Alamogordo Regional Water Supply Project

The ARWSP consists of developing brackish groundwater wells at Snake Tank Well Field located 24 miles north of Alamogordo, and constructing booster pump stations, water transmission lines to Alamogordo, and a desalination facility.

For implementation of the ARWSP, the City has accomplished the following:

1) Completed the Desalination Feasibility Study and Pilot Project;
2) Completed the water rights hearing process and was granted 4,000 acre-feet per year (ac-ft/yr) of brackish groundwater for the ARWSP with an increase of up to 5,000 acre-feet in any calendar year provided that the sum of annual diversions for any consecutive 5-year period does not exceed 20,000 acre-feet;
3) Prepared the Environmental Impact Statement and finalized the National Environmental Policy Act process for the ARWSP;
4) Began developing the Desalination (Snake Tank) Well Field for the ARWSP, which included the drilling and testing of five test wells, with two of the wells (Nos. 4 and 5) considered production-scale wells. Results of the testing verify that the well field is suitable for the desalination facility;
5) Obtained right-of-way permitting from the U.S. Bureau of Land Management and New Mexico State Land Office for the Snake Tank Well Field;
6) Construction of Snake Tank Well transmission pipeline from Well 5;
7) Constructed the Phase I Interim 1-million gallon per day reverse osmosis water treatment plant;
8) Completed design, permitting, and installation of Snake Tank Well Field monitoring wells M-1, M-2, and M-3, as required by permit conditions for revised permit no. T-3825 et al. (Snake Tank Well Field);
9) Installed transducers in M-2, M-3, Snake Tank Supply Well 5 (T-3825), and Rancher's Well (T-3837), recording water levels hourly, as required by permit conditions;
10) Developed monitoring procedures for Snake Tank Well Field monitoring program, and performed quarterly monitoring as required by permit conditions. Two years of quarterly baseline monitoring, and on-going semi-annual monitoring thereafter, are required;
11) In 2019 and 2020, there has been limited pumping from Snake Tank Well Field to test the pipeline and water treatment system, but not yet to provide a finished water supply.

Maintaining and Optimizing Supply

While the City has pursued state and federal approvals for the ARWSP, and implementation of the ARWSP, short-term measures have been needed in the interim to maintain and optimize water supply during years of drought. The City's well replacement program has helped maintain firm groundwater supply. For the City's water sources, the distinction is made between "firm supply" and permitted diversion amounts because firm supply in some cases falls short of the permitted diversion amounts, particularly for surface water sources. The firm supply is based on the worst years in the period of record for water supply, and includes hydrologic and system limitations, and ultimately reflects the reliability of the water supply. The continuation of the well replacement program is an important strategy to maintain groundwater supply, as opposed to increase supply, going forward.

Firm supply has also been estimated for the City's surface water sources; however, at present, there is no supply available from Bonito Lake as a result of damage caused by the Little Bear Fire, and forest fire could eliminate any of the City's surface water sources at any time. For this reason, groundwater supply will need to be adequate to meet projected future demand for planning purposes (i.e., redundant groundwater supply will need to be maintained and developed).

Nonetheless, the City aims to continue to maintain and optimize surface water firm supply by restoring Bonito Lake, implementing system improvements for the La Luz-Fresnal and Alamo Canyon surface water sources, and implementing measurement and monitoring to help enforce against illegal usage of these surface water sources.

In addition, the City aims to complete a Water System Master Plan in order to help maintain and optimize firm supplies for groundwater and surface water. A request for proposals is forthcoming for the Water System Master Plan.

Other Water Supply Development Alternatives

The City has evaluated and will continue to evaluate other alternatives for conserving water, and maintaining and increasing the water supply, and will work towards implementation of selected alternatives as may be feasible, appropriate, and as needed. Alternatives may include:

1) Aquifer storage and recovery (ASR) to store unused surface water in La Luz Well Field aquifer during the winter and spring months, for pumping out during the peak summer months.
2) Use of re-purified water.
3) Review proposals from the private industry for bulk water supply and potential purchase by the City.

Projected Water Demand

In 2019, the estimated population served by the water system was 34,250. The total gallons per capita day water use goal for planning purposes is 165 gallons per capita day. Based on this information and assuming an annual population growth rate of 1.2 percent, future water demand is projected to reach 10,330 ac-ft/yr in 2060.

It should be noted that without the ARWSP, the City has a firm groundwater supply of only 3,909 ac-ft/yr; a quantity not adequate for meeting current or future water supply requirements in the event that all surface water sources become unavailable. With the ARWSP, the City has a firm groundwater supply of 7,269 ac-ft/yr.

The City will meet current and future demand by maintaining and optimizing existing surface and groundwater supplies, continued development of the ARWSP, and water conservation strategies. Other water supply development alternatives may be considered as needed during the 40-year planning period. The difference between total firm groundwater supply and projected demand is 3,061 ac-ft/yr in 2060.

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CITY OF ALAMOGORDO 40-YEAR WATER DEVELOPMENT PLAN

1.0 WATER-SUPPLY DEVELOPMENT PLAN

1.1 Introduction

This City of Alamogordo 40-Year Water Development Plan, 2021-2060, is the third update to the Plan for the period 2005-2045 (Livingston Associates, John Shomaker & Associates, Inc.), upon which the diversion quantity in New Mexico Office of the State Engineer (NMOSE) revised permit no. T-3825 et al. was based. The previous version of the Plan represented the period 2015-2055. Under condition no. 10 of revised permit no. T-3825 et al., progress reports on the 40-Year Plan are to be submitted to NMOSE every fifth year. Details on revised permit no. T-3825 et al. and dates of associated court decisions and settlement agreements can be referenced from Section 2.1.7 of this Plan.

This 40-Year Water Development Plan update for the City of Alamogordo (City) includes:

- The Water-Supply Development Plan, which includes implementation of the Alamogordo Regional Water Supply Project (ARWSP)
- A description of the City's existing water rights, groundwater-supply wells, surface-water diversions, and firm supply available from groundwater and surface water sources
- Water demand projections for the 40-year planning period 2021 to 2060, based on the City's population projections and total gallons per capita day (GPCD) water usage goal for planning purposes
- Discussion of the City's Water Conservation measures that have been implemented, and Water Conservation Plan going forward
- Descriptions of available surface- and groundwater resources are provided in Appendices A and B

1.1.1 Background

The City of Alamogordo is located in Otero County in southern New Mexico, within the Tularosa Underground Water Basin, as presented in Figure 1. The City differs from most municipalities in the State of New Mexico in that the majority of its historical water supply (approximately 70 percent) has come from surface water. These surface water sources in the Sacramento Mountains north and east of the City, as well as Bonito Lake, are highly variable and susceptible to drought, watershed conditions that reduce supply, and climate change. During drought conditions, available water supply from these sources may be less than half of average supply. In addition to drought, fire in a watershed can eliminate a water supply as it did with Bonito Lake in 2012. The City must plan its availability of municipal water supply based on these possibilities by assuming groundwater supply will be needed to meet the 40-year demand.

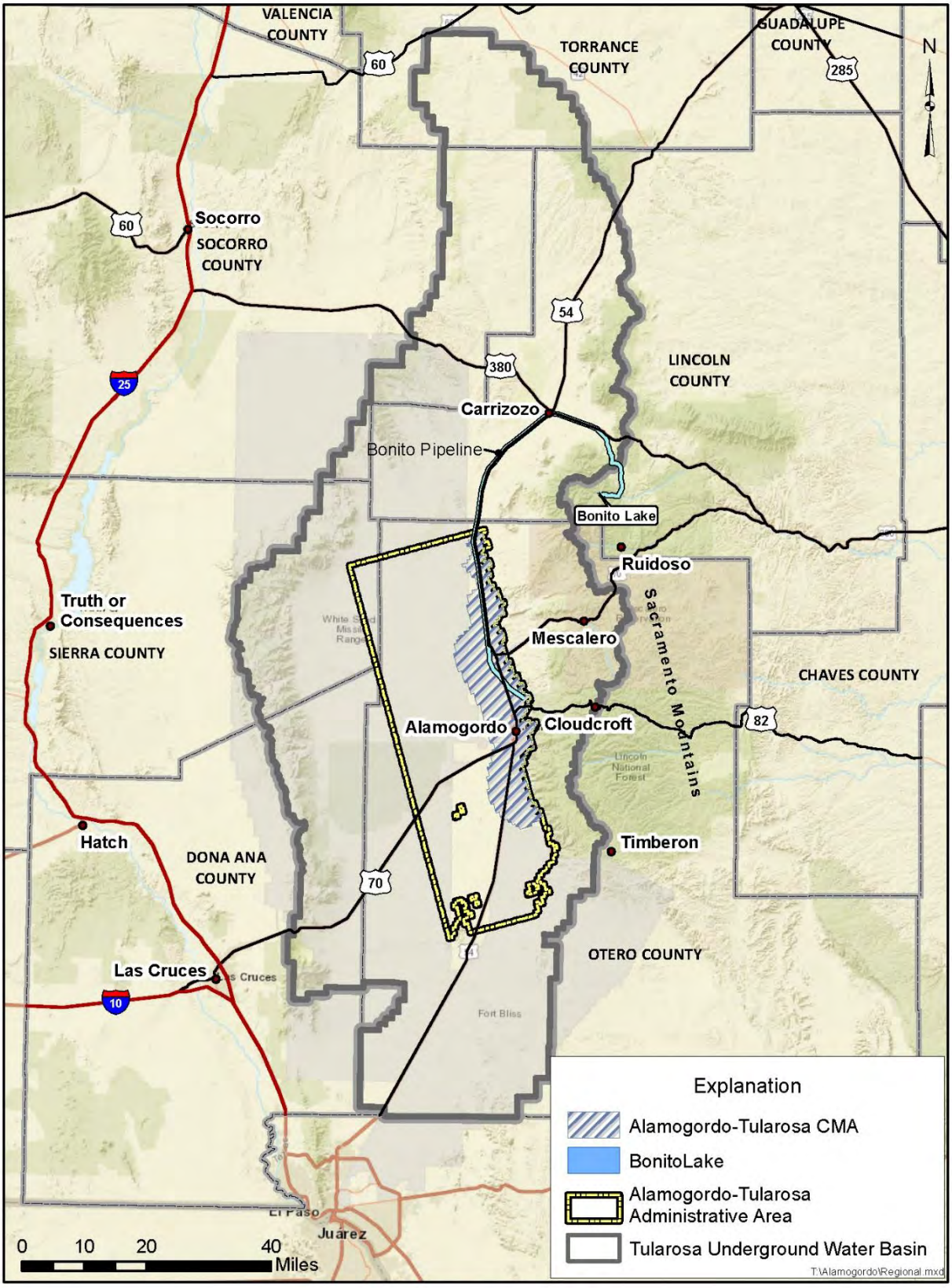

Figure 1. Regional map showing the City of Alamogordo and the Tularosa Underground Water Basin, New Mexico.

The problem facing the City at this time is the physical limitation associated with the water supply. For example, the City has surface-water rights of 5,418 acre-feet per year (ac-ft/yr) plus 16 cubic feet per second (cfs), but between 2015 and 2019 an average of only 3,489 ac-ft/yr of surface water was available for diversion and use.

For this reason, a concept of "firm supply" from the various existing water sources is used to calculate a minimum reliable water supply for the City. The firm supply is based on the worst years in the period of record for water supply, and includes hydrologic and system limitations, and ultimately reflects the reliability of the water supply. Therefore, the short-fall between future water demand and firm water supply (as opposed to amount of water rights) is the focus of this Plan. Firm supply is discussed in greater detail in Section 2.2.

The City has been proactive in its efforts to provide a safe and reliable water supply:

- Implementation of an aggressive Water Conservation Program including an increasing block water-rate structure, and a reclaimed water system that can supply up to 3 million gallons per day (MGD; about 3,000 ac-ft/yr) of reclaimed water for green-space irrigation, use in construction activities and other non-potable water needs by contractors and City departments.
- Implementation of lining and covering of the raw water storage reservoirs and reclaimed water storage reservoirs has saved almost 1 MGD previously lost to seepage and evaporation during the summer months.
- Implementation of a well replacement program, with routine well maintenance and water-level monitoring, in order to maintain the firm groundwater supply.
- Implementation of inspection, maintenance, cleaning, and management of vegetation for surface water sources (individual springs and surface-water collection systems) with full-time dedicated staff. Initiation of coordinated efforts with U.S. Forest Service for watershed improvements.

Because water conservation alone cannot supply the future water needs of the City, it is critical for Alamogordo to further maintain, optimize, and develop water resources under their existing water rights to meet current shortfalls, establish drought resilience, and to provide for planned future growth and development.

1.1.2 Overview of the Water Planning Region

The City of Alamogordo 40-year water planning region is presented in Figure 2. The planning region is bounded by the crest of the Sacramento Mountains in the east, the community of Three Rivers in the north, Township 18 South in the south, and military boundaries (White Sands Missile Range and Holloman Air Force Base) in the west. The water planning region is approximately 40 miles long and 20 miles wide and is located within Otero County.

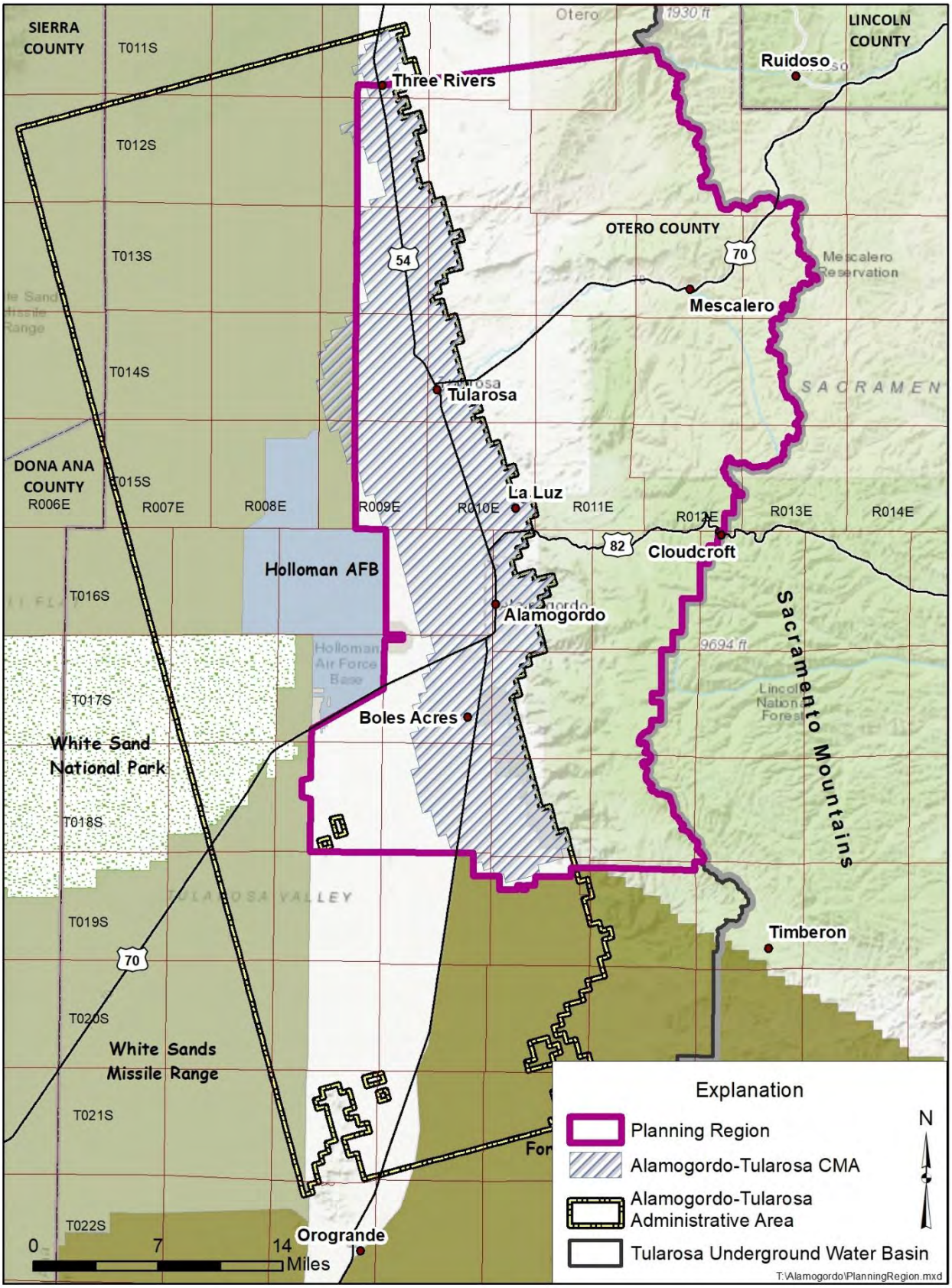

Figure 2. Map showing the City of Alamogordo 40-year water planning region, New Mexico.

Key features of the City water-supply system are presented in Figure 3. The planning region is within the Tularosa Underground Water Basin, declared by an order of the NMOSE on July 7, 1982 (see Figs. 1 and 2). Availability of fresh groundwater in the Tularosa Basin is limited by State Engineer administrative controls, and the hydrogeology of the region. In addition, all of the surface water in the region has been either fully or over appropriated.

In May of 1997, the NMOSE published criteria for water rights administration of the Alamogordo-Tularosa Administrative Area, a sub-area within the Basin centered on Tularosa and Alamogordo (see Fig. 2). Each administrative block is 0.5-square mile, with selected areas in the eastern part of the Administrative Area designated as Critical Management Areas (CMA) by the State Engineer. The purpose of the designation was to limit the effects of new appropriations from domestic wells on senior surface water rights.

New appropriations for fresh groundwater are limited or nil under the current administrative criteria (where administrative blocks are deemed critical or near critical). This places a legal constraint on any further fresh groundwater development within the region.

Temperature and precipitation vary within the planning region because of the differences in land surface elevation. The lower elevation portion of the region reflects an arid climate and the Sacramento Mountain portion along the eastern boundary of the region reflects a semi-arid climate. Most of the precipitation falls during mid-summer as intense thunderstorms and as winter precipitation (rain on the basin floor and snow at higher elevations). Summer precipitation occurs primarily during July through September. The average annual precipitation ranges from 9 in. at the lower elevations of the region near White Sands National Monument, to 12 in. near Alamogordo, to about 29 in. at the highest elevations of the region near Village of Cloudcroft in the Sacramento Mountains. Figure 4 presents graphs of precipitation and average temperature between 1980 and 2020.

The major recharge to the region is through snowpack in the higher elevations. Drought conditions have resulted from highly variable and lower-than-average snowfall, and higher-than-average winter temperatures, in recent years in the watersheds feeding the spring systems associated with surface water supplies.

The Tularosa Basin is a hydrologic closed basin composed of basin-fill deposits in the central portion of the basin, and bedrock in the surrounding mountain watersheds. Almost all of the water for the region is surface water originating from the watersheds along the west side of the Sacramento Mountains, and groundwater from basin-fill deposits. Some domestic water supplies are obtained from the bedrock aquifer in the Sacramento Mountains. Groundwater flow in the region is from east to west, originating in the recharge areas along the crest of the Sacramento Mountains, and discharging to the playa lakes in the basin center.

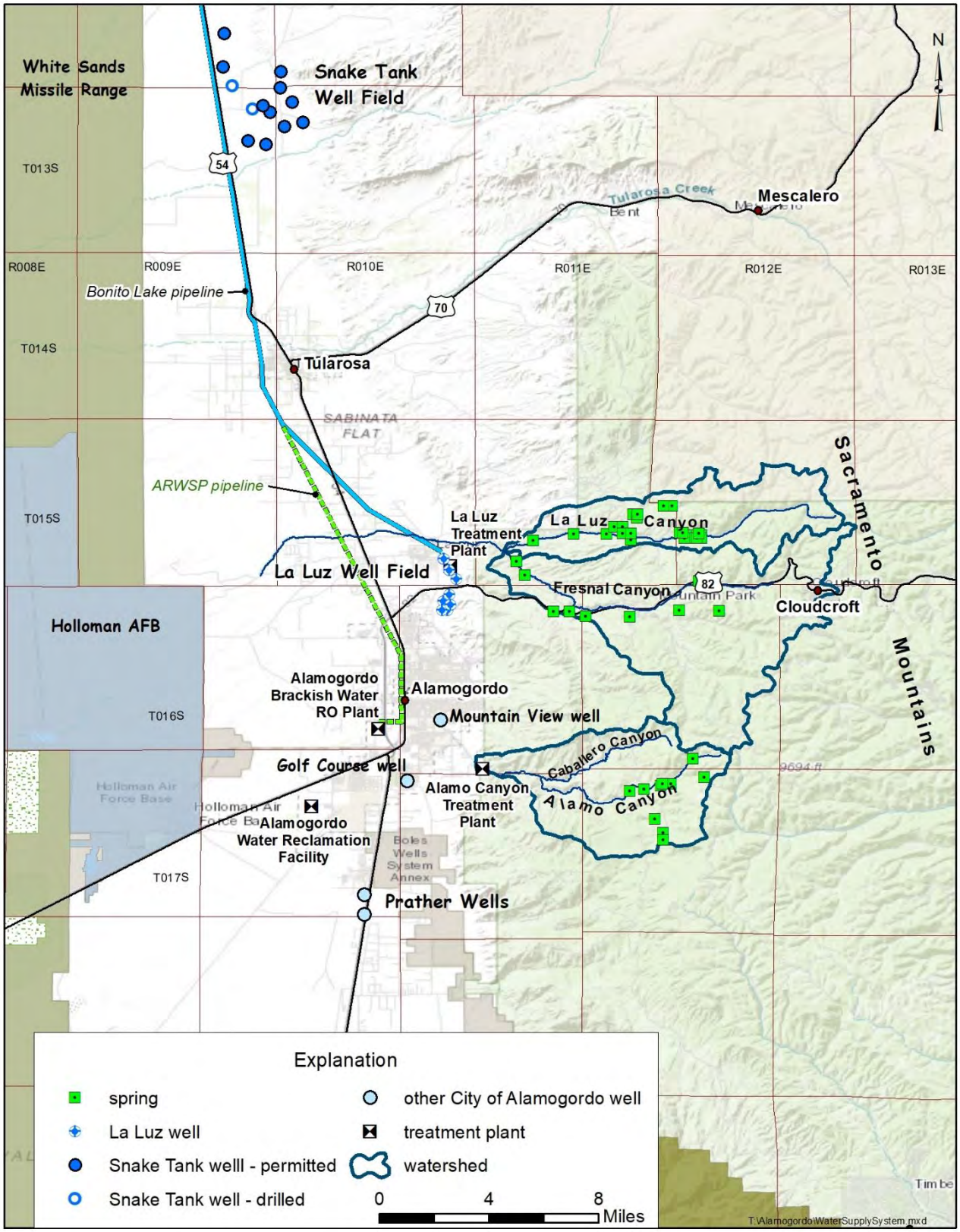

Figure 3. Map showing key features of City of Alamogordo water supply system, Otero County, New Mexico.

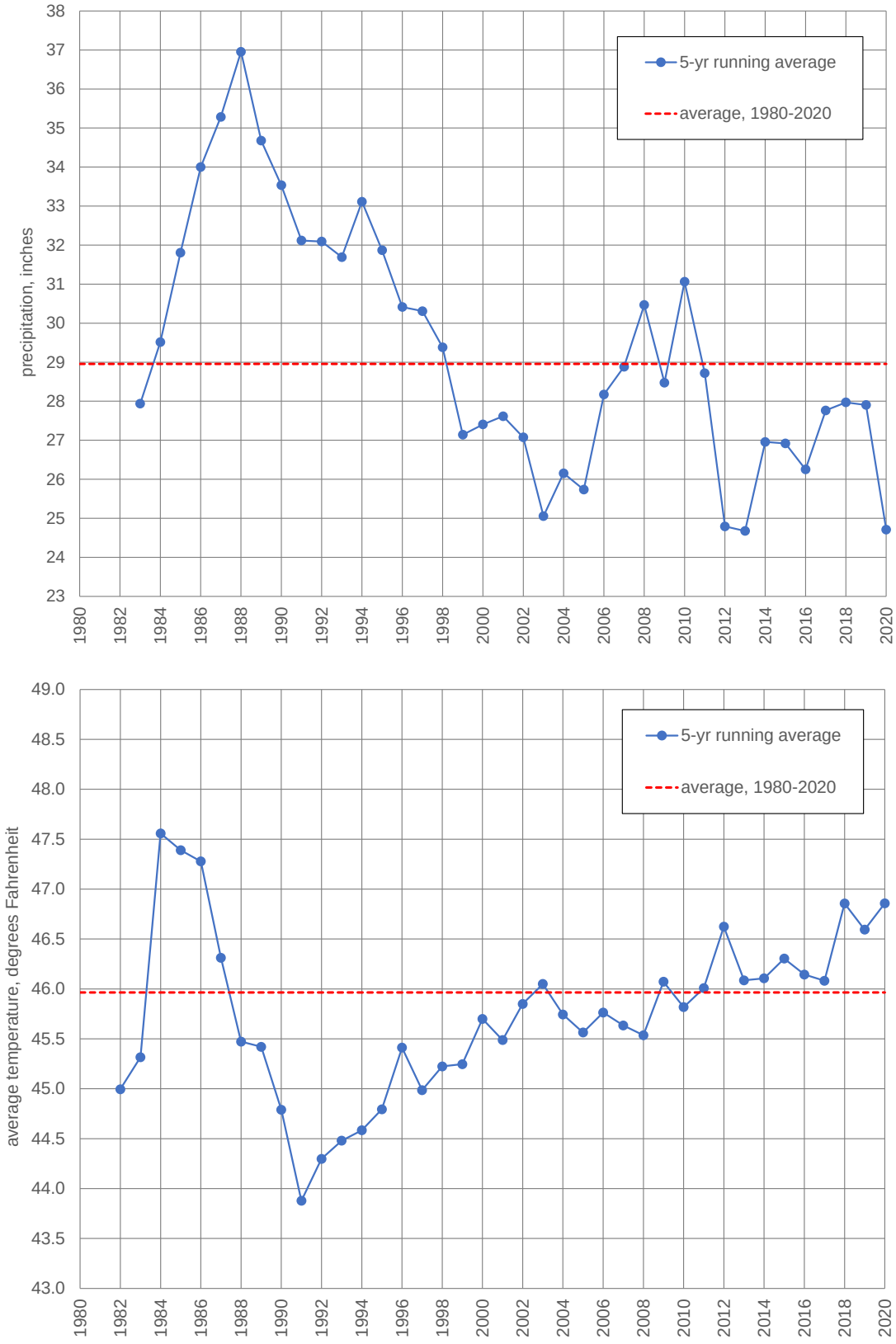

Figure 4. Graphs of precipitation and average temperature between 1980 and 2020 at Cloudcroft in the Sacramento Mountains, Otero County, New Mexico.

The higher-elevation and forested Sacramento Mountain escarpment receives more precipitation and gives rise to several small streams that discharge into the desert. Most of the streams are perennial in their upper reaches and derive their base flow from runoff, primarily as snowmelt, on the western slopes of the Sacramento Mountains. All streams carry flood-flow from infrequent high-magnitude thunderstorms. Only the large drainage areas on the western slope of the Sacramento Mountains contain streams with any appreciable base flow. These streams include Three Rivers, Rio Tularosa, La Luz Creek, and Alamo Canyon. Part of the total runoff recharges the basin-fill aquifer. Most of the available surface water in the planning region has been appropriated for use. Surface water from Three Rivers, Rio Tularosa, La Luz-Fresnal Canyon, Alamo Canyon, and Sacramento River is diverted for irrigation, domestic, and municipal use.

The majority of the region is rural, and agriculture and military-related enterprises are dominant. The majority of irrigated agriculture in the Tularosa Basin is concentrated in the vicinity of the communities of Alamogordo, La Luz, Tularosa, and Boles Acres (see Fig. 2).

The 2010 U.S. Census indicates a population of 63,797 for Otero County, with 40,933 in the Alamogordo county subdivision, which includes City of Alamogordo, La Luz, Boles Acres, and Holloman Air Force Base. The 2010 U.S. Census indicates a population of 30,403 for City of Alamogordo, but the City has challenged this number. Based on actual data collected by the City, the estimated population served by the water system in 2019 was 34,250, including 33,849 individuals within the City limits, and 401 individuals outside the City.

1.1.3 Water Supply System

Figure 3 presents key features of the City of Alamogordo water supply system. The majority of the City of Alamogordo's water supply is derived from spring flows originating from La Luz and Fresnal Canyon system, which flow via collection structures and pipelines to La Luz Water Treatment Plant (WTP). Bonito Lake water has historically flowed via a 90-mile pipeline to La Luz WTP. Three raw water storage reservoirs, totaling 180 million gallons in capacity, are used to store water at La Luz WTP prior to treatment. All three of the reservoirs have been covered and lined to eliminate evaporation loss and leakage. Additional spring flows from the Alamo Canyon and Caballero Canyon systems flow via pipeline to the Alamo Canyon WTP.

Groundwater is used primarily during the summer months to augment the surface water supply. It is derived from La Luz Well Field, Prather Well Field, and the Golf Course Well, all of which are completed in the basin-fill aquifer. The Mountain View Well is not currently equipped; water produced from the Mountain View Well is slightly saline and will require treatment prior to use for drinking water supply. It has become increasingly necessary for the City to rely on groundwater due to diminished surface water supplies resulting from drought and climate change.

Climate change modeling for the region predicts warmer average temperatures, diminished snowpack, earlier snowmelt, earlier peak flows, and less total water volume derived from snowmelt runoff (New Mexico Universities Working Group on Water Supply Vulnerabilities, 2015). All of these features have been observed in recent years. At Cloudcroft in the Sacramento Mountains, temperatures have been consistently elevated, and precipitation has been consistently below average, since 2011 (see Fig. 4).

Between 2006 and 2010, the City derived about 80 percent of its water supply from surface water that originates from the Sacramento Mountains and Bonito Lake, and the remaining 20 percent from La Luz and Prather Well Fields, and the Golf Course Well. Between 2015 and 2019, the City derived about 73 percent of its water supply from surface water that originates from the Sacramento Mountains, and the remaining 27 percent from groundwater wells.

1.2 Maintaining and Optimizing Existing Water Supply

To continue to maintain and optimize the existing supply sources, the City plans to implement the following strategies:

- Continue the well replacement program, with routine well maintenance and water-level monitoring, in order to maintain the firm groundwater supply discussed in this Plan.
- Continue inspection, maintenance, cleaning, and management of vegetation for surface water sources. Continue coordinated efforts with U.S. Forest Service for watershed improvements.
- Continue to maintain the special use permits from the U.S. Forest Service, for spring diversions along La Luz-Fresnal water supply system.
- Continue to evaluate the La Luz-Fresnal and Alamo Canyon surface water sources for optimal delivery, continue routine maintenance on infrastructure, and implement system improvements. Enforce against illegal usage of these sources.
- Continue efforts to restore Bonito Lake, which were initiated following the Little Bear Fire in 2012.

1.2.1 Well Replacement Program

The City's well replacement program has helped maintain firm groundwater supply from La Luz and Prather Well Fields, and Golf Course Well. The City plans to continue the well replacement program, routine well maintenance and water-level monitoring, and well rehabilitation as needed, in order to maintain firm groundwater supply. The following wells have been replaced in recent years:

- La Luz Well 2 (replaced in 2012, NMOSE well no. T-32-POD12), La Luz Well 3 (replaced in 2008, NMOSE well no. T-32-S-4) and La Luz Well 5 (replaced in 2008 NMOSE well no. T-32-S-6),
- Prather Wells 1 and 2 (both replaced in 2010, NMOSE well nos. T-33-POD3 and T-33-POD4, respectively),
- Golf Course Well (replaced in 2005, NMOSE well no. T-814)
- Mountain View Well (replaced in 2006, NMOSE well no. T-3489-POD2; note that water produced from this well is slightly saline and will require treatment prior to use for drinking water supply)

La Luz Wells 4 and 7 will be replaced as needed in the future, to maintain capacity and well efficiency. These wells were drilled in 1964 and 1971, respectively. La Luz Well 8 was drilled in 1999. It should be noted that even with an aggressive well replacement program, routine well maintenance and monitoring, rehabilitation, and careful wellfield management, it may be difficult to maintain firm groundwater supply due to issues such as long-term drawdown in the aquifer due to reduced recharge, and regional and local pumping.

1.2.2 Surface Water Sources

Firm surface water supply falls short of the permitted diversion amounts for the City's La Luz-Fresnal and Alamo Canyon surface water sources. The City plans to continue routine maintenance for surface water sources, and also plans to continue to evaluate the La Luz-Fresnal and Alamo Canyon surface water sources for optimal delivery, and implement system improvements, to maintain firm supply.

The discrepancy between firm supply and permitted diversion amounts is due in part to hydrologic limitations, drought, and climate change, but also may be due to issues with the administration of the resources. There are concerns that the City may not be getting its legal

entitlement to these surface water sources. Measurement and enforcement have been inadequate or absent, providing no assurance that other water users (with or without any legal entitlement) have not been taking the City's water out of priority. The City therefore intends to pursue a systematic approach to implementation of measurement and monitoring diversions to ensure that it gets its entitlement, and to provide the data needed for enforcement against illegal usage of these sources.

1.2.3 Restoring Bonito Lake

Bonito Lake supply was lost in 2012 due to the Little Bear Fire, and no supply has been available from Bonito Lake since that time. Restoration of Bonito Lake in the aftermath of the Little Bear Fire provides an example of the time, effort, and resources required to restore surface water sources after they have been damaged by wildfire. This example emphasizes the need for redundant groundwater supply, as devastating wildfires become more common.

The City has completed substantial work, and continues to work towards restoring Bonito Lake. Funding has come from numerous federal, state, and local sources. Completed tasks have included dewatering, construction of a temporary coffer dam and bypass pipeline, excavation and hauling, and offsite disposal of burn scar debris, ash, and sediment totaling 581,000 cubic yards. The construction cost was close to $21 million including New Mexico gross receipts tax (NMGRT). Notice to proceed was issued in November 2017 and was substantially completed in April 2021. Engineering, design, permitting, and oversight costs totaled close to $1.5 million including NMGRT. Post-construction imagery shows a restored reservoir depth of approximately 79 ft compared to a pre-construction depth of 40 ft.

The next phase of work includes infrastructure improvements such as adding gated ports to the intake tower and several other improvements to the structure, adding a catwalk access to the intake tower, resurfacing the interior face and crest of the dam, replacing 1944-era valving and piping within the dam valve house, adding a Parshall flume and flow meter on the discharge pipe, and other improvements to site access and security fencing. The project was advertised in May and June 2021, with the bid opening in July 2021. Planned project duration is 10 months and the lakebed will remain drained as is the current condition. The construction estimate is about $3.2 million including NMGRT. Engineering, design, and permitting costs to date have totaled about $340,000 including NMGRT, and construction phase services are estimated to be an additional $430,000 including NMGRT.

The improvements related to restoration of Bonito Lake will also improve the quality of this water source once it is restored. Additional challenges related to restoration of Bonito Lake are forthcoming, including refilling the lake, and potential issues related to the pipeline, which has been out-of-service for a prolonged period of time.

1.3 Alamogordo Regional Water Supply Project

As a result of previous planning efforts, the City is in the process of implementing desalination of brackish groundwater, under the Alamogordo Regional Water Supply Project (ARWSP). ARWSP is a viable and economic source of supply that will be used to reduce the City's dependence on drought-sensitive surface waters.

Of the water supply development alternatives studied over the past several decades, the ARWSP was the only alternative found to be technically feasible and cost effective, and able to meet the City's requirements in terms of water quality, quantity, and schedule (Consensus Planning, 2018). The ARWSP consists of constructing and operating up to 10 brackish groundwater production wells at Snake Tank Well Field, booster pump stations, water transmission line to Alamogordo, and a desalination facility (also referred to as the brackish water reverse osmosis (RO) plant). Figure 5 shows the components of the ARWSP. In addition to the production wells, the project includes three observation wells located north and south of the production well field to monitor water levels and water quality.

The Snake Tank Well Field is located 24 miles north of Alamogordo and east of U.S. Highway 54. The desalination facility is located on Lavelle Road and encompasses 10 acres of City-owned land. The Snake Tank Well Field water will be delivered to the facility through approximately 29 miles of pipeline. The desalination process will treat brackish well water using RO, and the treated water will then be sent into the City's municipal system by a booster pump station near the desalination plant. The City will use the existing distribution system and no new distribution system will be constructed.

The Alamogordo desalination facility has the potential to be expanded to a capacity of approximately 4 MGD. However, it will be brought on-line in phases as Alamogordo grows and the need for potable water increases. The Phase I Interim 1-MGD RO plant and transmission pipeline have been constructed.

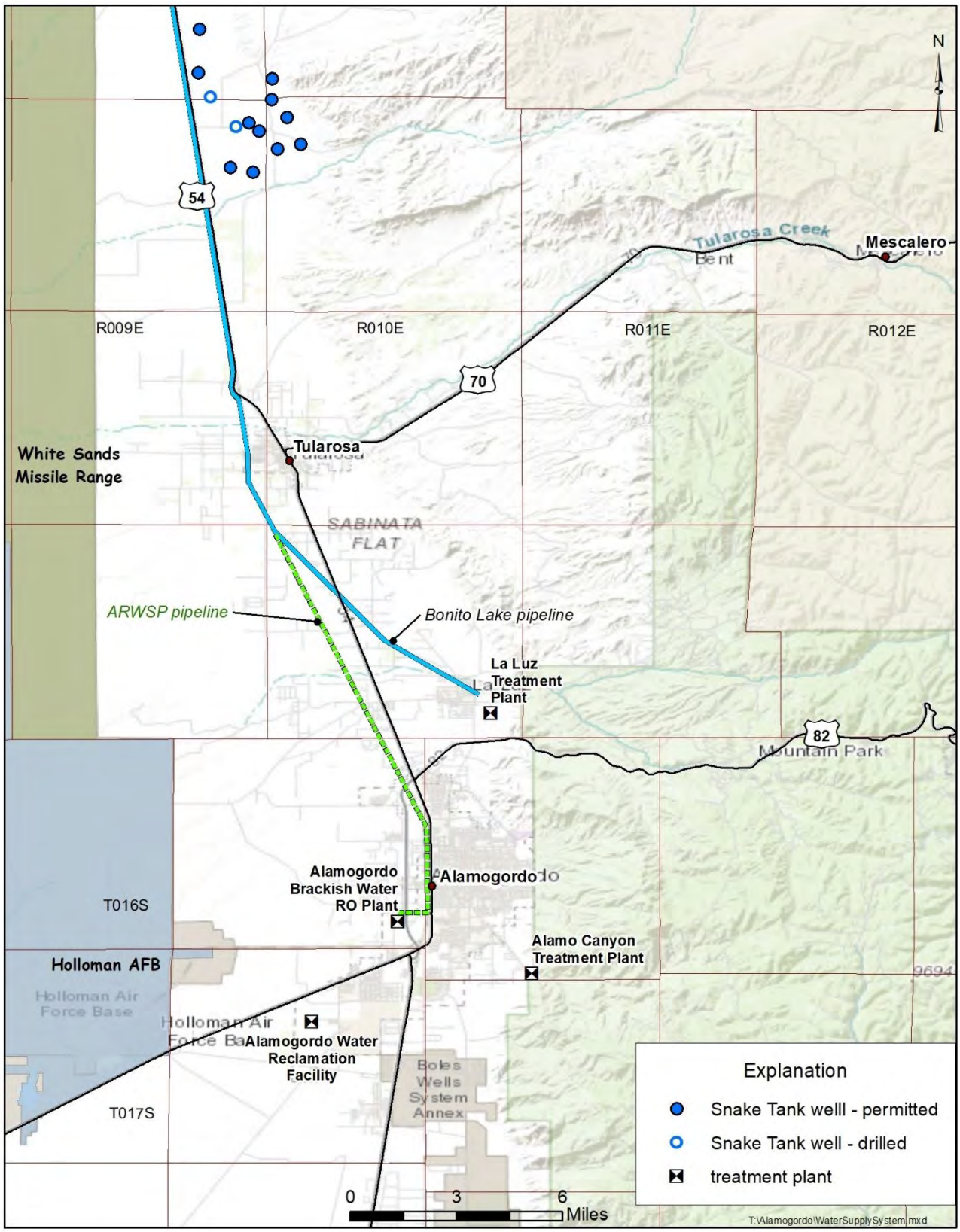

Figure 5. Map showing components of the Alamogordo Regional Water Supply Project, Otero County, New Mexico.

1.4 Other Water Supply Development Alternatives

1.4.1 Aquifer Storage and Recovery

Aquifer storage and recovery (ASR) may allow the City to store unused surface water in La Luz Well Field aquifer during the winter and spring months, for pumping out during the peak summer months. As noted above, climate change modeling predicts earlier snowmelt and earlier peak flows. With limited reservoir space, ASR would be a potential solution for the City to more fully utilize its surface water sources. ASR may also help the City to maintain groundwater firm supply going forward, particularly during periods of drought, and if well fields experience long-term drawdown.

A preliminary study with pilot testing (Livingston Associates and JSAI, 1997) showed that an average of 2,000 ac-ft/yr of surface water could potentially be stored and re-pumped (if the extra surface water is available). All diverted and stored winter flows would be retained under the City's current adjudicated surface water rights.

This project would work conjunctively with the ARWSP, and allow the City to store surface water for use during drought years while increasing the sustainability of La Luz Well Field. An ASR program would provide more flexibility for conjunctive use water resource management. In this case, more ARWSP water would be produced to meet demands, and the available surface water would be stored within the aquifer. A hybrid injection (recharge) and recovery well was drilled in La Luz Well Field for the purpose of ASR in 2001, but the project has not been permitted. This project would be beneficial for maximizing existing sources under conjunctive use management. There is also opportunity for ASR with reclaimed effluent; for example, with infiltration basins near the Mountain View Well.

1.4.2 Re-Purified Water Use

The City's reclaimed water system is a valuable resource. This reclaimed water is used for turf irrigation at City parks, golf courses and recreational fields, construction, and other City needs. Utilizing reclaimed water for these uses offsets the demand for potable water. As part of the reclaimed water system, the City has constructed 16 miles of reclaimed water pipelines that is a looped system, a total of 8 pumping stations, and a total of 5.1-million gallons of reservoir storage. Currently the City uses up to 3 MGD of reclaimed water during the spring through fall months. However, during the winter months, approximately 1,000 acre-feet of reclaimed water is not needed for irrigation and is diverted to the center pivots located near the Water Reclamation Plant or to land disposal (within Township 16 South, Range 10 East, Section 16).

Re-purification of water may take the form of indirect potable reuse (IPR) or direct potable reuse (DPR). Indirect potable reuse (also sometimes referred to as indirect planned potable reuse) is the addition of highly-treated wastewater (re-purified water) into the potable water system through aquifer recharge or surface water augmentation. In contrast to IPR, DPR involves the use of advanced-treated and re-purified water for potable supply without an environmental buffer such as an aquifer or surface water reservoir. A number of communities throughout the United States are practicing IPR, and a few are practicing DPR. Communities in New Mexico are also developing IPR or DPR projects, including Cloudcroft (DPR), Rio Rancho (IPR), and Albuquerque-Bernalillo County (IPR), while others are evaluating potential feasibility. For Alamogordo, some of the reclaimed water produced during the winter months could be re-purified and used for aquifer recharge at the Prather Wells or La Luz Wells, or for surface water blending at La Luz reservoirs. Feasibility studies and New Mexico Environment Department (NMED) permitting would need to take place prior to the City's final decision for implementation.

1.4.3 Outside Bulk Water Purchases

As the market for water expands in the region, some outside bulk-water purchase scenarios may be feasible. Any new water purchases to be considered would need to meet the City's adopted water quality goal of 800 mg/L total dissolved solids (TDS) or less. Additionally, the facilities to convey the water into the City's distribution system would need to be provided. Water that may be used for blending in the ARWSP would also be considered.

2.0 WATER RIGHTS AND WATER SUPPLY

A summary of the City of Alamogordo's sources of water supply, water rights, and firm supply are presented in Table 1. Details of surface water resources, and the analysis of firm supply (also sometimes referred to as firm yield) of surface water, are presented in Appendix A. Details of groundwater resources, and the analysis of firm supply of groundwater, are presented in Appendix B. Water rights documents referenced below are included in Appendix C.

2.1 Water Rights

2.1.1 Bonito Lake

The City has an adjudicated water right to divert up to 1,449.02 ac-ft/yr (and at a rate of 2.36867 cfs) of surface water from Bonito Lake via the Bonito Pipeline under NMOSE surface water permit SP-13-5, with a priority date of 1907. The City's water right in the Bonito stream system was adjudicated in Lincoln County cause no. 3854, final judgement entered June 26, 1934. It may also be noted that Holloman Air Force Base has an equal amount of surface water rights for Bonito Lake under SP-13. Other entities own smaller amounts of surface water rights for Bonito Lake under SP-13, including Town of Carrizozo, Nogal Water Users Association, and State of New Mexico (for facilities at Fort Stanton). Total water to be appropriated under SP-13 shall not exceed 3,087.72 ac-ft in any one year (and at a rate of 5 cfs).

Following approval of SP-13 in 1907, the original applicant El Paso and Rock Island Railroad Co. constructed the Bonito Pipeline to carry water from the Upper Bonito stream system, which drains to the Pecos River, over the divide and down the west side of the mountain range in the Tularosa Basin. An NMOSE application approved in 1928 allowed for the point of diversion under SP-13 to include channel storage and the construction of Bonito Reservoir (referred to in this report as Bonito Lake) to a capacity of 1,180 ac-ft. NMOSE issued a license in 1932 for Bonito Lake with a capacity of 1,180 ac-ft.

Bonito Dam (NMOSE Dam Safety Bureau No. D-249) repairs and improvements to the spillway were accepted by NMOSE on September 13, 1982. Proof of Completion of Works filed with NMOSE in 1986 for Bonito Dam rehabilitation work indicated the capacity of Bonito Lake to be 1,252 ac-ft. In the aftermath of the 2012 Little Bear Fire, which caused Bonito Lake to become heavily silted, work has been ongoing to remove sediment from Bonito Lake and rehabilitate Bonito Dam. Activities to restore Bonito Lake are described above in Section 1.2.3.

2.1.2 La Luz-Fresnal

The City has the right to divert up to 891 ac-ft/yr or 16 cfs of surface water from the La Luz-Fresnal stream system under a number of NMOSE surface water declarations, and licenses issued by NMOSE, as described below. The City's water rights in the La Luz-Fresnal stream system were adjudicated in Otero County cause no. 1037, final decree entered July 23, 1918.

The City has a license dated June 5, 1951, for water rights under SD-1110 thru SD-1114, and SD-1118 thru SD-1122, to divert a combined total of 373.2 ac-ft/yr of the adjudicated waters of the La Luz-Fresnal stream system (plus 16 cfs under SD-1122). The priority date for these rights is 1884, with the exception of SD-1122, which has a priority date of 1866. Under SD-1122, 16 cfs of combined natural and flood flows may be diverted. Several of these NMOSE file nos. include multiple permitted points of diversion (PODs); for example, 19 PODs under SD-1110, 15 PODs under SD-1112, 2 PODs under SD-1113, and 6 PODs under SD-1122.

A license dated December 16, 1960, for water rights under SD-1115 Amended and 0919, is to divert 36 ac-ft/yr of La Luz Creek waters, with a priority date of 1907. A license dated December 16, 1960, for water rights under SD-1342 thru SD-1346, is to divert a combined total of 186.9 ac-ft/yr of the adjudicated waters of the La Luz-Fresnal stream system, with a priority date of 1884. SD-1342 includes 3 permitted PODs, SD-1343 includes 2 PODs, and SD-1346 includes 2 PODs. A license dated June 30, 1961, for water rights under SD-1122, SD-1383, SD-1411, and SD-1412, is to divert a combined total of 58.8 ac-ft/yr in the La Luz-Fresnal stream system (plus 16 cfs under SD-1122), with a priority date of 1907.

A license dated May 31, 1962, for water rights under SD-1562 and SP-2886 Combined, is to divert 116 ac-ft/yr from a series of springs known as Crockett Springs, with priority dates of 1897 (for 50.46 ac-ft/yr for irrigation use) and 1956 (for 65.54 ac-ft/yr for municipal use). The SD-1562 permitted POD is not used to divert any of the 16 cfs licensed under SD-1122. A license dated September 11, 1963, for water rights under SD-1455 and SD-1456, is to divert a combined total of 120.3 ac-ft/yr from 5 springs on the North Fork of Fresnal Creek, with a priority date of 1901. The 4 PODs under SD-1455, and SD-1456 POD, are not used to divert any of the 16 cfs licensed under SD-1122.

2.1.3 Alamo Canyon

The City has a permit to divert up to 2,897 ac-ft/yr of surface water from the Alamo Canyon (and tributary Gordon Canyon) springs and stream system under NMOSE surface water declaration SD-637, with a priority date of 1877. The permit for alternate points of diversion was approved by NMOSE, with conditions, on May 20, 1977. NMOSE has granted extensions of time to perfect an appropriation of surface waters under SD-637 over the years. Drought conditions have resulted in reduced flows and have thus prevented the City from putting to beneficial use its full water rights under SD-637. The maximum historical metered diversion under SD-637 appears to have been 1,454 ac-ft/yr in 2009.

SD-637 was originally declared by the City in 1932, and the declaration was submitted to NMOSE along with an application to change point of diversion. The permit to change point of diversion was approved by NMOSE on October 14, 1932, and did not specify an amount of water, although the Inspection Report stated that the dry weather flow from the springs was 2.7 cfs and wet weather flow was 5.6 cfs. Along with the application for alternate points of diversion submitted in 1977, the City submitted an amended declaration that claimed 2,897 ac-ft/yr from Alamo Canyon.

A license dated November 7, 1939, for the water right under NMOSE surface water permit SP-2176, is to appropriate 0.25 cfs from the Caballero Canyon springs and stream system, with a priority date of 1937. A permit for alternate points of diversion under SP-2176 was approved by NMOSE, with conditions, on May 20, 1977. The 1977 permit specifies a maximum diversion of 181 ac-ft/yr. NMOSE has granted extensions of time to perfect an appropriation of surface waters under SP-2176 over the years. The maximum historical metered diversion under SP-2176 appears to have been 191 ac-ft/yr in 1997, representing a slight over-diversion. Diversions under SP-2176 in subsequent years were less than the permitted amount of 181 ac-ft/yr.

2.1.4 La Luz Wells and Golf Course Well

The City has a license dated July 20, 2010, for the water right under NMOSE file no. T-32 et al., to divert 3,000 ac-ft/yr measured at the La Luz Wells. The priority date for the right is 1956. It should be noted that further expansion of the La Luz Well Field is not possible due to NMOSE administrative constraints as well as hydrogeologic constraints. Additionally, the quality of this groundwater source does not meet the City's guideline for a maximum TDS concentration of 800 mg/L, and requires either blending with surface water or additional treatment.

On February 21, 2001, NMOSE approved permit T-814 et al. to divert up to 269.9 ac-ft/yr under T-814 et al. On November 28, 2008, NMOSE approved the Golf Course Well (T-814; see Table 1) as a supplemental point of diversion to the rights under T-32 et al. Under this permit, diversions from T-814 et al. are limited to 429.9 ac-ft/yr; further, only in years when diversions from T-814 et al. exceed 269.9 ac-ft/yr would additional water (up to 160 ac-ft/yr) be counted toward T-32 et al. In addition to La Luz Wells T-32-S-7 through T-32-POD14, the Golf Course Well T-814 is included as a point of diversion in the 2010 license for T-32 et al.

2.1.5 Prather Wells

On December 12, 2008, NMOSE approved permit to change locations of wells T-33-POD3 and T-33-POD4 (Prather Wells). Under this permit, the combined diversion from T-33-POD3 and T-33-POD4 shall not exceed 500 ac-ft/yr. The Prather Wells were replaced in January 2010 under T-33-POD3 and T-33-POD4. The priority date for the T-33 et al. permit is 1954.

Table 1. City of Alamogordo sources of water supply, water rights, and firm supply

type of source	source of supply	NMOSE File No.	water right, ac-ft/yr	water right status / priority date	firm supply, ** ac-ft/yr
surface water	Bonito Lake	SP-13-5	1,449	adjudicated / 1907	271
surface water (spring flow)	La Luz-Fresnal	SD-1110 thru SD-1122, SD-1342 thru SD-1346, SD-1383, SD-1411, SD-1412, SD-1455, SD-1456, SD-1562	891 ac-ft/yr + 16 cfs *	adjudicated / 1866, 1884, 1897, 1901, 1907, 1956	1,653
	Alamo Canyon	SD-637, SP-2176	3,078	permits / 1877, 1937	601
		surface water sub-total	**5,418 ac-ft/yr + 16 cfs ***		**2,525**
groundwater	La Luz Wells	T-32 et al.	3,000	licensed / 1956	2,979
	Prather Wells	T-33 et al.	500	permit / 1954	500
	Golf Course Well	T-814	269.9	licensed / 1956 (see T-32 et al.)	270
	Mountain View Well	T-3489-POD2	160.3	permit / 1953	160
	Snake Tank Well Field (via ARWSP)	T-3825 et al.	4,000 [c]	permit / 2000	3,360 [b]
		groundwater sub-total	**7,930.2**		**7,269**
		surface water and groundwater total	**13,348**		**9,794**

* 16 cfs is time-of-day limited

** A surface water reliable supply of 3,513 ac-ft/yr, and groundwater supply of 7,131 ac-ft/yr, were used by the NMOSE for permit T-3825 et al. settlement purposes. Groundwater firm supply is based on planned replacement of wells as needed to maintain optimum well efficiency.

[b] based on 4,000 ac-ft/yr diversion and an approximate overall 84 percent treatment recovery

[c] permit conditions allow diversion up to 4,000 ac-ft/yr, but can be increased up to 5,000 ac-ft/yr, provided that the sum of annual diversions for any consecutive 5-yr period does not exceed 20,000 acre-feet

NMOSE - New Mexico Office of the State Engineer
ac-ft/yr - acre-feet per year
cfs - cubic feet per second
ARWSP - Alamogordo Regional Water Supply Project

2.1.6 Mountain View Well

On May 31, 2007, NMOSE approved permit to change location of well T-3489-POD2 (Mountain View Well). Under this permit, the diversion from T-3489-POD2 shall not exceed 160.33 ac-ft/yr, with a priority date of 1953. T-3489-POD2 had been drilled in summer 2006 under emergency authorization. NMOSE has granted extensions of time for proof of beneficial use over the years. The Mountain View Well is not currently equipped; water produced from the Mountain View Well is slightly saline and will require treatment prior to use for drinking water supply.

2.1.7 Snake Tank Well Field

On July 3, 2007, NMOSE and the City of Alamogordo entered into a Settlement Agreement regarding permit T-3825 et al. for the Snake Tank Well Field. The Settlement Agreement allows for the diversion of 4,000 ac-ft/yr from the wells associated with revised permit T-3825 et al., with a temporary increase in annual diversions up to 5,000 ac-ft/yr provided that the sum of annual diversions for any consecutive 5-year period does not exceed 20,000 acre-feet. Revised permit T-3825 et al. is attached to the Settlement Agreement as "Exhibit No. 1." The priority date for revised permit T-3825 et al. is 2000. Revised permit T-3825 et al. also involves a Settlement Agreement between the City, HFR Corporation, and Three Rivers Cattle Ltd. dated November 20, 2007. Revised permit T-3825 et al. includes numerous conditions of approval including a monitoring plan for monitoring groundwater levels and water quality, which was approved by all parties on January 8, 2008.

The diversion quantity in the revised permit T-3825 et al. was approved based on the City of Alamogordo's 2005-2045 40-Year Water Development Plan, a Stipulation between the City and NMOSE, the Twelfth Judicial District Court opinion, and the New Mexico Court of Appeals opinion. The District Court's decision was on April 7, 2008, the New Mexico Court of Appeals' decision was on November 4, 2009, and the New Mexico Supreme Court denied a writ of certiorari on January 21, 2010 (it refused to hear an appeal).

2.2 Water Supply

Alamogordo conjunctively uses surface water and groundwater to meet demands (Figs. 6 and 7). The availability of surface water varies seasonally and with climate cycles, and shortages in surface water supply are made up with groundwater (Fig. 7).

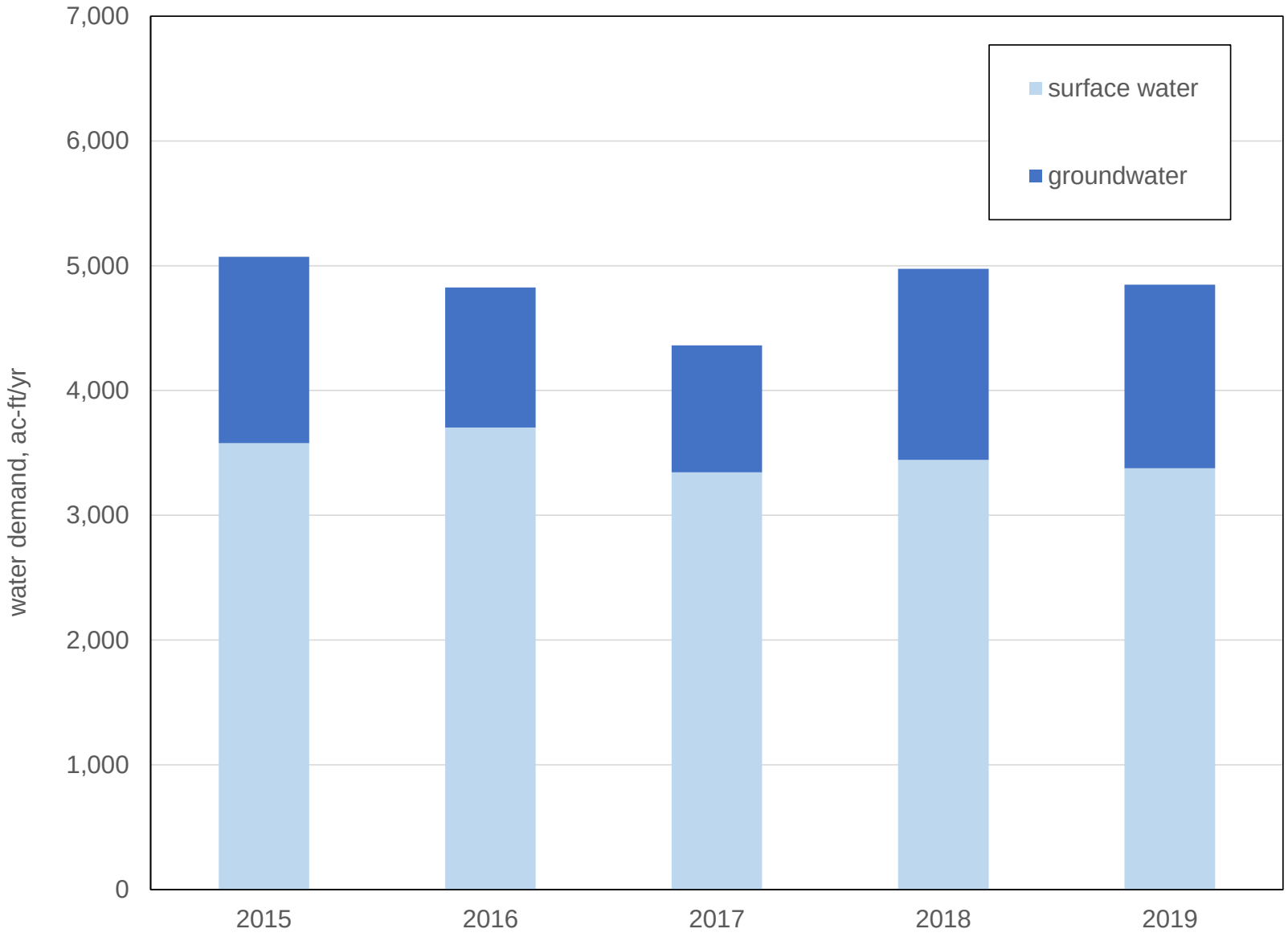

Figure 6. Bar graph showing sources of water for meeting City of Alamogordo annual water demand, for 2015 to 2019.

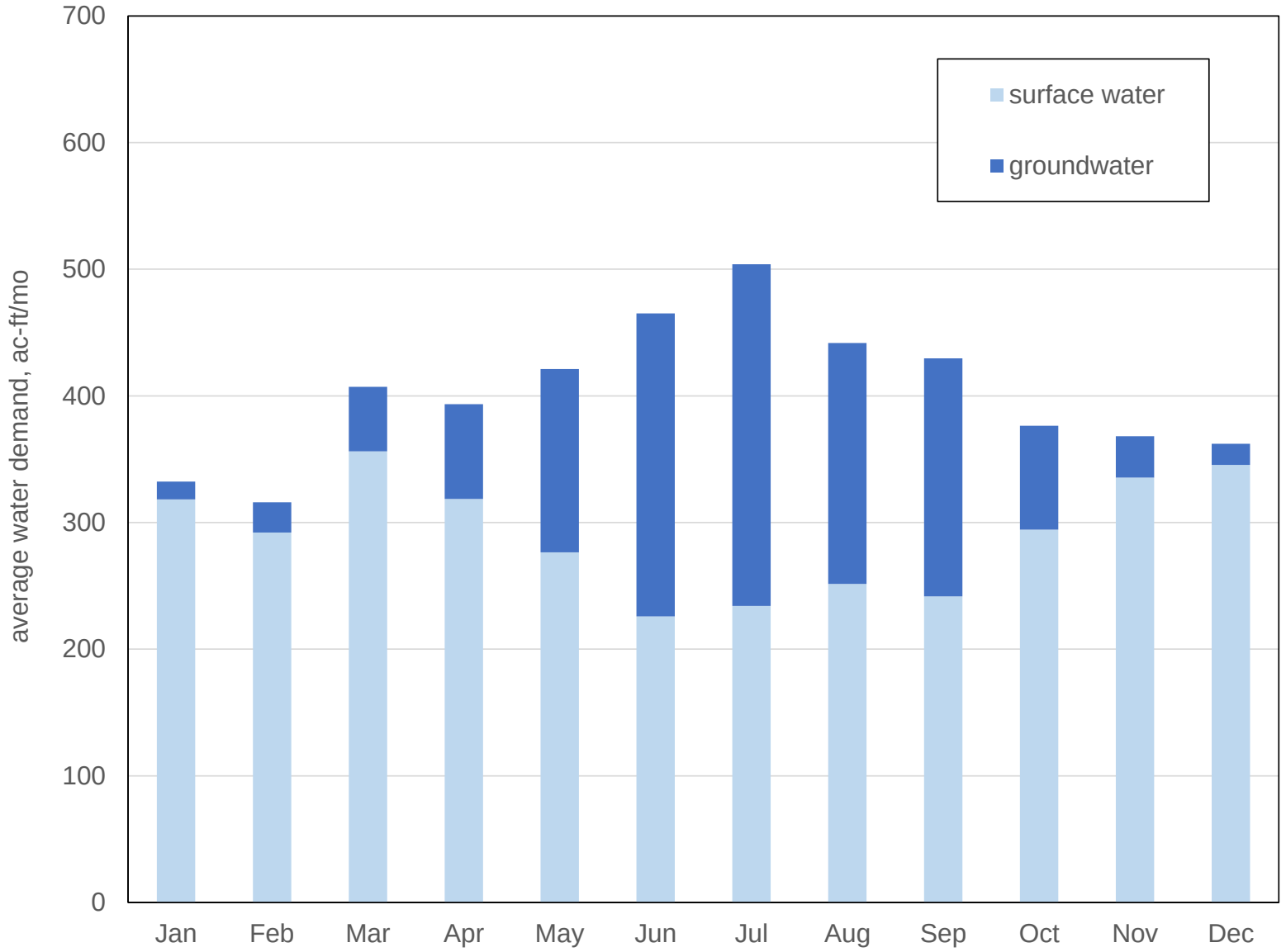

Figure 7. Bar graph showing sources of water for meeting City of Alamogordo average monthly water demand, for 2015 to 2019.

The majority of the City of Alamogordo's water supply is derived from spring flows originating from La Luz and Fresnal Canyon system. Additional spring flows are from the Alamo Canyon and Caballero Canyon systems, and Bonito Lake water, once restored, will be an important surface-water source.

Firm surface water supply as presented in Table 1 and documented in Appendix A, falls far short of surface-water rights. The City has surface-water rights of 5,418 ac-ft/yr plus 16 cfs, compared to firm surface water supply of 2,525 ac-ft/yr. In order to optimize the surface-water resources of the La Luz-Fresnal system and Alamo Canyon system, the City has devoted full-time staff to inspection, maintenance, cleaning, and management of vegetation at the individual springs and surface-water collection systems. Each spring is inspected and cleaned twice annually. The City's ongoing efforts to maintain surface water sources help to maintain firm surface water supply, but only to a limited extent due to the effects of drought and climate change.

Groundwater is used primarily during the summer months to augment the surface water supply. It is derived from seven wells within La Luz Well Field (T-32-S-3 through –S-9), two wells in the Prather Well Field (T-33-POD3 and T-33-POD4), and the Golf Course Well (T-814). The Mountain View Well (T-3489-POD2) is not currently equipped.

Firm groundwater supply as presented in Table 1 and documented in Appendix B, is relatively close to the amount of groundwater rights. However, even with an aggressive well replacement program, it may be difficult to maintain firm groundwater supply due to issues such as long-term drawdown in the aquifer due to reduced recharge, and regional and local pumping. Groundwater quality may also deteriorate with long-term drawdown. As noted previously, the Mountain View Well is not in service primarily due to issues related to water quality, making the total firm groundwater supply quantity presented in Table 1 more difficult to achieve.

Between 2006 and 2010, the City of Alamogordo derived about 80 percent of its water supply from surface water that originates from the Sacramento Mountains and Bonito Lake, and the remaining 20 percent from La Luz and Prather Well Fields, and the Golf Course well, all of which are completed in the basin-fill aquifer. Between 2015 and 2019, the City derived about 73 percent of its water supply from surface water that originates from the Sacramento Mountains, and the remaining 27 percent from groundwater wells. No water has been diverted from Bonito Lake since the Little Bear Fire affected that source in 2012.

In 2019 and 2020, there has been limited pumping from Snake Tank Well Field to test the pipeline and water treatment, but not yet to provide water supply.

3.0 WATER DEMAND PROJECTIONS

3.1 Population Projections

A projected annual growth rate of 1.2 percent continues to be used for water-planning purposes through 2060; this is the same rate used in the previous version of the Plan, and the City's Water Conservation Plan (Wilson & Company, 2016). This rate is consistent with the estimated rates used in the Preliminary Engineering Report for the wastewater treatment plant expansion (Bohannan Huston, 2010), which were adopted by the City. Utilizing this projected annual growth rate of 1.2 percent is considered appropriate for water-planning purposes. Current projections at the county-level suggest slight population decline over the next 20 years (https://gps.unm.edu/pru/projections), but municipal-level trends do not necessarily align with county-level trends.

U.S. Census 2010 indicated a population of 30,403 for City of Alamogordo; however, the City submitted a challenge to the U.S. Census Bureau number in June 2013. Based on actual data collected by the City, the estimated population served by the water system in 2019 was 34,250, including 33,849 individuals within the City limits, and 401 individuals outside the City. Table 2 presents population projections based on the 2019 estimate of the population served, and an annual growth rate of 1.2 percent.

Table 2. City of Alamogordo population projections

year	planning-level projected population [a]
2020	34,661
2025	36,791
2030	39,052
2035	41,452
2040	44,000
2045	46,704
2050	49,574
2055	52,621
2060	55,855

[a] based on 1.2 percent annual growth rate, and 34,250 estimated population served in 2019

3.2 Goals for Gallons Per Capita Per Day Water Use

Total GPCD represents total water supply (total water diverted) divided by the population served by the water system. The City Commission has adopted a total GPCD goal of 165 GPCD, and this number is tied to the court opinions for revised permit T-3825 et al. (see Section 2.1.7). The City does not seek to re-evaluate the GPCD goal at the current time particularly in light of the challenging conditions that the community is currently facing including drought, climate change, and economic hardship associated with the global pandemic. These conditions contribute to flux in terms of overall water usage, and among various categories of water usage. Table 3 presents a comparison of Alamogordo's GPCD goal and others in the region, based on available information.

Single-family residential GPCD represents water consumed by single-family residential customers divided by the population in single-family residential dwellings. The City has a residential GPCD goal of 125 GPCD.

Table 3. Comparison of City of Alamogordo total GPCD goal with other water systems in southern New Mexico

community	projected year	projected population [b]	projected total demand, ac-ft/yr	total GPCD goal
Alamogordo	2060	55,855	10,330	165
Las Cruces	2055	281,708	44,207	140
Hobbs	2050	54,660	16,190	264
Deming	2050	39,526	9,119	206
Lovington	2053	22,670	6,157	242
Truth or Consequences and Williamsburg	2050	14,134	2,795	176
Jal	2045	6,127	1,990	290

[a] 3,000,000 gallons per day wastewater reuse
[b] high growth projection
ac-ft/yr - acre-feet per year
GPCD - gallons per capital per day

3.3 Water Demand Projections

Water demand projections for years 2020 through 2060 presented in Table 4 are based on projected population growth and total GPCD of 165 GPCD.

Table 4. City of Alamogordo water demand projections [projected population * projected total GPCD water use]

year	projected water demand, ac-ft/yr
2020	6,410
2025	6,804
2030	7,223
2035	7,667
2040	8,138
2045	8,638
2050	9,169
2055	9,732
2060	10,330

ac-ft/yr - acre-feet per year

Figure 8 presents a graph of projected demand from 2020 to 2060, and the City's firm groundwater supply. The difference between total firm groundwater supply and projected demand in terms of diversions is 3,061 ac-ft/yr in 2060. The difference between total firm supply (groundwater and surface water) and projected demand is 536 ac-ft/yr in 2060.

3.4 Non-Revenue Water

Non-revenue water is defined by the AWWA water balance (Table 5). Alamogordo's non-revenue water represented about 21 percent of total diverted water between 2015 and 2019 (Table 6; also see AWWA water audit worksheet for 2019 in Appendix E).

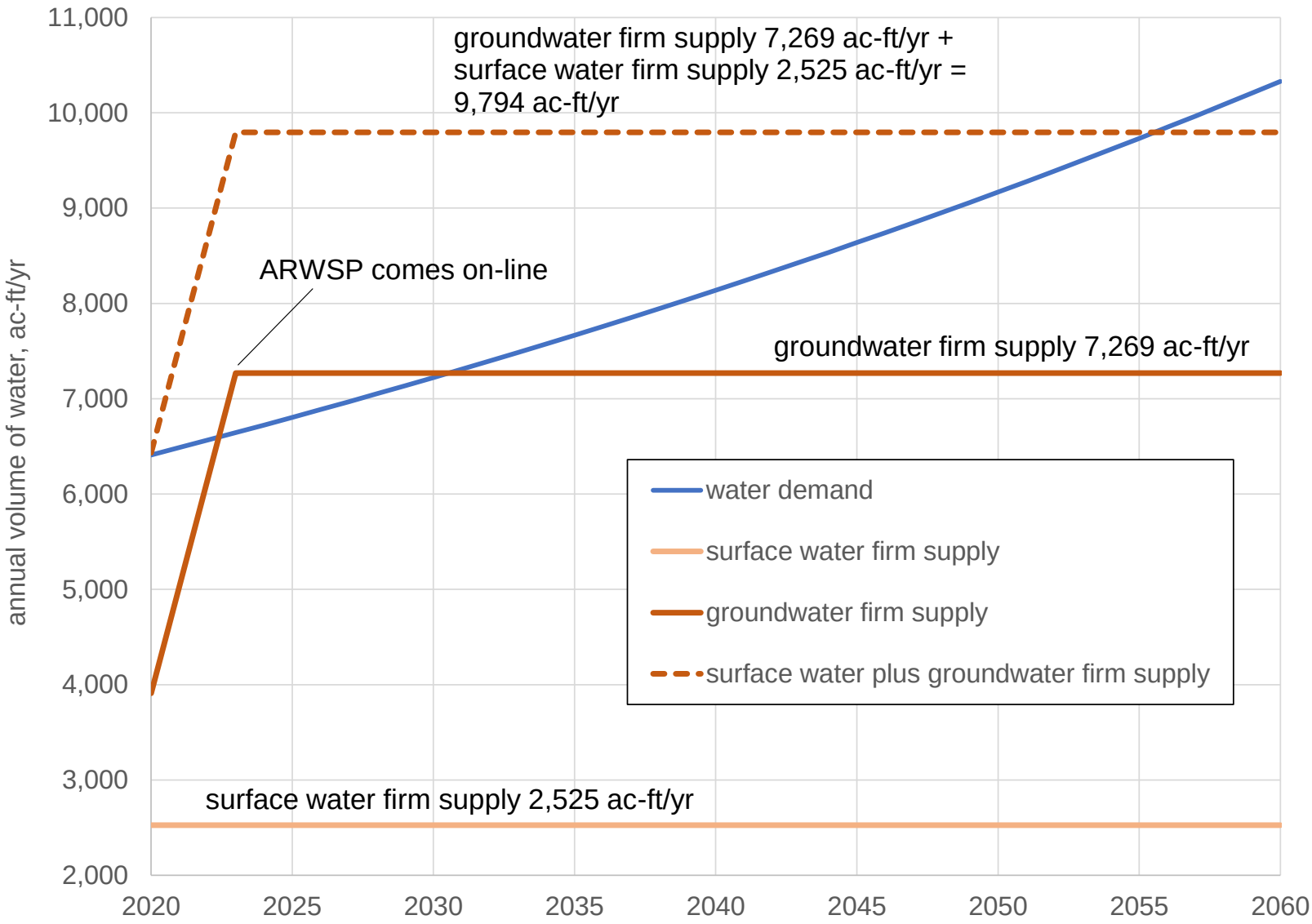

Figure 8. Graph showing City of Alamogordo projected water demands for 2020 to 2060, and the City's firm water supply.

The City's Comprehensive Plan indicates that aspects of the City's water distribution system need improvements or replacement (Consensus Planning, 2018). Many of the existing waterlines have reached the end of their expected operational life, causing leaks and frequent pipeline breaks. Non-revenue water numbers may also be somewhat elevated due to water system flushing, hydrant flushing, and fire protection field testing (unbilled authorized consumption, see Table 5). These flushing processes represent important preventive maintenance, remove sediment from lines, and are critical to fire protection.

The City is working to implement the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical. AWWA has set an industry standard goal of less than 10 percent for water losses (AWWA, 1996). The City has the goal of reducing non-revenue water from 21 percent of total diversions to 10 percent of total diversions by 2060 through water system rehabilitation.

The Comprehensive Plan indicates that it is the City's goal to replace 1,000 ft of water distribution lines each year and repair or replace 100 percent of broken water main valves found in the system. Table 7 presents the City's Infrastructure Capital Improvement Plan (ICIP) for public works for 2019-2023. The City also plans to implement a Water Loss Control Program that includes water audits and an intervention process to implement the controls to reduce water losses (Consensus Planning, 2018).

It should be noted that a considerable part of the near-term budget is dedicated to construction of the Snake Tank (ARWSP) transmission line (see Table 7). It should also be noted that when supply from Bonito Lake comes back on line, City financial resources will be needed to provide finished water not only for City users, but also for Holloman Air Force Base users (see Section 2.1.1; Holloman Air Force Base has surface water rights for Bonito Lake, and the City provides the finished water from Bonito Lake supply). These financial commitments are noted because they represent financial resources that could otherwise be allocated towards reduction of water losses.

Table 5. American Water Works Association (AWWA) water balance

total water diverted	authorized consumption	billed authorized [a]	billed metered	revenue
			billed unmetered	
		unbilled authorized [b]	unbilled metered	non-revenue
			unbilled unmetered	
	water losses	apparent losses [c]	unauthorized	
			customer metering inaccuracies	
			systematic data handling errors	
		real losses [d]	leakage on transmission and/or distribution lines	
			leakage and overflows at Utility storage tanks	
			leakage on service connections	

[a] examples include metered deliveries for residential, industrial, commercial, and institutional use, and park and golf course irrigation
[b] examples include metered main flushing, sewer cleaning, potable well flushing, non-potable production
[c] examples include theft and vandalism, customer metering inaccuracies, and data handling errors
[d] examples include line leakage, and storage tank leakage and overflow

Table 6. City of Alamogordo non-revenue water and total water losses

year	total diversions, ac-ft/yr	authorized consumption, [a] ac-ft/yr	non-revenue water, ac-ft/yr	percentage of diversion that represents non-revenue water	water losses, ac-ft/yr	percentage of diversion that represents water losses	ILI [b]
2015	5,072	4,174	898	18	857	17 [d]	-
2016	4,826	3,824	1,002	21	956	20 [d]	-
2017	4,362	3,625	737	17	703	16 [d]	-
2018	4,975	3,659	1,316	26	1,256	25 [d]	-
2019 [c]	4,800	3,622	1,178	25	1,124	23	3.37
average	4,807	3,781	1,026	21	979	20	-

[a] includes billed (account and bulk sales) and unbilled (main flushing, sewer cleaning, potable well flushing, non-potable production) metered deliveries
[b] ILI = Infrastructure Leakage Index (real losses / unavoidable annual real losses)
[c] from 2019 AWWA Water Audit spreadsheet completed by City, see Appendix E
[d] based on [water losses / non-revenue water] ratio in 2019
ac-ft/yr - acre-feet per year
- not calculated

Table 7. Summary of City of Alamogordo 2019-2023
Infrastructure Capital Improvement Program for public works

project	expenditures, millions of U.S. dollars				
	2019	2020	2021	2022	2023
Snake Tank transmission line	$2.0	$2.0	$2.0	$2.0	$2.0
City Hall HVAC replacement	$0.1	$0.1	$0.1		
Fresnal Canyon Pipeline Replacement, Diversion 5 to Snow Smith Springs	$0.675				
Foothills Water Storage Rehab	$1.0523				
Lower Alamo Water Storage Rehab	$0.8106				
Ocotillo Water Storage Rehab	$0.0568				
Upper Heights Water Storage Rehab	$0.8164				
Griggs Field Park Ground Storage Reservoir	$0.8973				
18th Street Ground Storage Reservoir	$1.4915				
University Park Ground Storage Reservoir	$0.8391				
10th Street Reservoir Exterior	$0.2086				
Facilities for ADA Compliance	$0.3				

4.0 WATER CONSERVATION

The City of Alamogordo has an aggressive water conservation program. As a responsible community situated in the arid Southwest, the City emphasizes and encourages water conservation, and has achieved significant results in water conservation while working to maintain a reasonable quality of life.

4.1 Baseline Water Conservation

Water conservation measures implemented by the City are summarized in the sections below.

4.1.1 Water Conservation Ordinances

- Water Conservation Ordinance No. 948 (1995 and updates) established days and times when outdoor watering is permitted; requires covers on swimming pools when not in use; prohibits outdoor decorative fountains; and places restrictions on vehicle washing; new construction landscaping; and other activities. The June 2020 edition of the City Profile publication reminds residents of the days for outdoor watering based on street address, with no outdoor watering permitted on Mondays, or between 9 am and 6 pm, effective May 1 to November 1.
- Water Rationing Ordinance No. 1008 (1997, amended 2003) mandates reduction in water usage during times of diminished water supplies; established automatic water rate surcharges; and set trigger points for a 3-stage rationing plan. Note: water rationing is not considered a conservation measure except during emergency situations when the City does not have enough supply to meet demand.
- Water Rate Ordinance No. 1106 (2000, amended 2002) established increasing block water rates system, and provides for surcharges in addition to block rates.

4.1.2 Water Reclamation

- The City's water reclamation program mandated use of reclaimed water for irrigation of City green spaces and turf, and for use in construction activities and other non-potable water needs by contractors and City departments, which saves up to 3 MGD of potable water. The City's reclaimed water system includes the Alamogordo Water Reclamation Plant, 16.2 miles of pipeline, a total of 8 pumping stations, and a total of 5.1-million gallons of reservoir storage. In 2019, total reclaimed water use was 1,925 ac-ft/yr.
- The Wastewater Reuse Master Plan Update (Bohannan Huston, 2015) has been completed, with technical review of the reuse system and recommendations for future improvements and expansion of supply, storage, and distribution systems.

- A water model has been developed to replicate field data provided by the Wastewater Reuse Master Plan Update, and help with analysis of existing conditions to provide recommendations and alternatives for improvements to the reuse water system problem areas, including volume, demand, supply, and pressure throughout the whole reuse system.
- The Reclaimed Water Line Looping project has been completed to relieve large pressure swings and improve water flow and quality throughout the reuse system.

4.1.3 Other Water Conservation Measures

- A total GPCD goal of 165 GPCD, and a residential GPCD goal of 125 GPCD, have been established.
- A low-flow toilet rebate program has been in effect since 2001, and was updated in 2016.
- Three raw water storage reservoirs and reclaimed water reservoirs have been lined and covered to reduce evaporation and leakage losses by almost 1 MGD.
- All residential water meters in the City have been replaced with "water smart" meters, and the City maintains a program to replace water meters that are over 12 years old. Larger meters for businesses will be replaced in FY2022.
- The City provides public education resources on water conservation through the City Profile publication, and xeriscaping workshops through the Keep Alamogordo Beautiful program.
- Department of Public Safety / Fire Services has implemented innovative water conserving methods to conduct required equipment testing, resulting in a savings of tens of thousands of gallons per year since 2004.
- The City continues to conduct water quality sampling and analysis, and use the sampling results and compliance tracking data to determine potential contamination sources, susceptibility of the water supply to contamination sources, and potential water system deficiencies to identify measures to be taken to prevent contamination.

4.1.4 Gallons Per Capita Day Water Use

Based on information provided by the City, total GPCD was 128 GPCD on average between 2015 and 2019. The City has complied with condition no. 9 of revised permit no. T-3825 et al., which stipulates that water use shall not exceed 165 GPCD. Detailed information on water use for 2015 through 2019 is provided in the NMOSE GPCD Calculator spreadsheet in Appendix D. Note that in the NMOSE GPCD Calculator spreadsheet, multi-family residential consumption has been included with other metered consumption, as the number of multi-family connections does not

necessarily represent the number of multi-family units. Total GPCD in the NMOSE GPCD Calculator spreadsheet differs somewhat from the 128 GPCD average value stated above due to the fact that the calculations in the NMOSE GPCD Calculator spreadsheet do not utilize data on population served by the water system as determined by the City. Based on information provided by the City, single-family residential GPCD was 90 GPCD on average between 2015 and 2019 (see Appendix D).

It should be noted that GPCD in recent years has continued to be largely supply-driven and the result of implementation of water conservation ordinances related to water use restrictions and surcharges. The City will continue efforts for water conservation, water reclamation, reduction of water losses, and optimization of firm supply, but it should be noted that a slight increase in GPCD in the future may reflect improvement in quality of life and economic development that is needed to sustain the community.

4.2 Water Conservation Plan

The City's Water Conservation Plan (Wilson & Company, 2016) presents goals and strategies for water conservation going forward. The Plan provides an evaluation of water supplier performance, and identifies issues to address through ongoing efforts of the City's Water Conservation Program. Anticipated results of the Water Conservation Plan include: 1) Reduction of non-revenue water by 15 percent by 2026, 2) Continue to maintain a low GPCD, and 3) Reduce peak summer water demands.

In addition, the City's Comprehensive Plan (Consensus Planning, 2018) outlines a number of goals, objectives, and strategies that may aid in water conservation going forward.

4.2.1 Provide for the safe and efficient delivery of water services

Strategies to provide for the safe and efficient delivery of water services may include:

- Secure funding for and implement the projects identified in the Infrastructure Capital Improvement Plan (ICIP) 2019-2023, and continue to update and include projects in future ICIPs. Table 7 presents the City's ICIP for public works in 2019-2023.
- Prepare a Water System Master Plan
- Develop a GIS-based functional database for the City's water distribution system and provide updates to the database on an on-going basis.
- Develop an Operation and Maintenance (O&M) Plan that details maintenance programs, emergency response plan (ERP), standard operating procedures (SOPs), and rehabilitation and replacement planning (see Comprehensive Plan for full description).
- Develop the ARWSP, and utilize water reclamation up to the existing design capacity.

4.2.2 Reduce water losses

The City plans to implement a Water Loss Control Program that consists of three major components:

- Water audit to identify and quantify water uses and losses from the existing wells, water storage tanks, and water distribution system;
- Intervention process to implement the controls to reduce water losses, and repair and replace the leaking areas of the system; and
- Evaluation to determine the success of the intervention process.

4.2.3 Further development or modification of baseline water conservation measures

- Continue, expand, or modify the City's conservation education programs, as needed.
- Continue rebates for replacing existing plumbing fixtures, and consider implementation of new rebate programs for items such as replacement of high-water-use evaporative coolers.
- Consider modification of water rate structure, and increase in water rates.
- Evaluate the performance of water conservation methods on a regular basis and determine whether additional measures are needed.

5.0 REFERENCES

Consensus Planning, 2018, City of Alamogordo 2018 Comprehensive Plan: planning document prepared by Consensus Planning, Inc., in association with Smith Engineering Company, Final Draft 3/2018, 176 p. plus appendices.

[JSAI] John Shomaker & Associates, Inc., 2017, City of Las Cruces 40-year water development plan: consultant's report prepared by John Shomaker & Associates, Inc., for Las Cruces Utilities, 68 p. plus appendices.

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Wilson & Company, 2016, City of Alamogordo Water Conservation Plan, Revised 2016: prepared by Wilson & Company for the City of Alamogordo, 20 p. plus appendices.

APPENDICES

Appendix A.

Background on Surface-Water Resources

APPENDIX A.

BACKGROUND ON SURFACE-WATER RESOURCES

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APPENDIX A.

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APPENDIX A.

A.1.0 BACKGROUND ON SURFACE-WATER RESOURCES

A.1.1 Regional Setting

Within the City of Alamogordo 40-year water planning region, the spring flows from the Sacramento Mountains vary seasonally, and are generally greater during the months of March through May. Spring (and stream) flows generally occur after all of the demands for water in the watershed are satisfied (i.e.; evapotranspiration, upstream diversions, domestic wells, etc.). In wet years, rainfall and snowmelt runoff can be a substantial contributor to the amount of streamflow available for diversion. Storm water runoff from summer thunderstorms occurs rapidly and is difficult to capture and clean to potable water standards.

The U.S. Geological Survey (USGS) has collected a limited dataset of daily base flow and peak flow measurements for Tularosa Creek at Bent and near Tularosa, and for Alamo Creek, La Luz Creek, and the Sacramento River. Only peak flow for Three Rivers was measured by the USGS from 1955 to 1977. A summary of available surface water data is presented as Table A1, and shows the period of record and annual mean streamflow in acre-feet per year (ac-ft/yr). Figure A1 shows stream gage locations.

Table A1. Summary of available surface water data for the City of Alamogordo 40-year water planning region, New Mexico

station name	USGS ID	period of record	water year mean streamflow, ac-ft/yr
Tularosa Creek near Bent, NM	08481500	1949-2019	9,805
Rio Tularosa near Tularosa, NM	08482000	1939-46	11,091
Rio La Luz near La Luz, NM	08483000	1911-12	8,536
Rio Fresnal near Mountain Park, NM	08484000	1911-12	1,050
La Luz Creek at La Luz, NM	08484500	1910-13; 1982-2019 [a]	5,833
Alamo Creek at Woods Ranch near Alamogordo, NM	08485500	1933-50	1,283
Sacramento River near Sunspot, NM	08492900	1984-89	2,173

[a] 1983 to 1987 represent the only years with complete datasets to calculate water year streamflow
ac-ft/yr – acre-feet per year

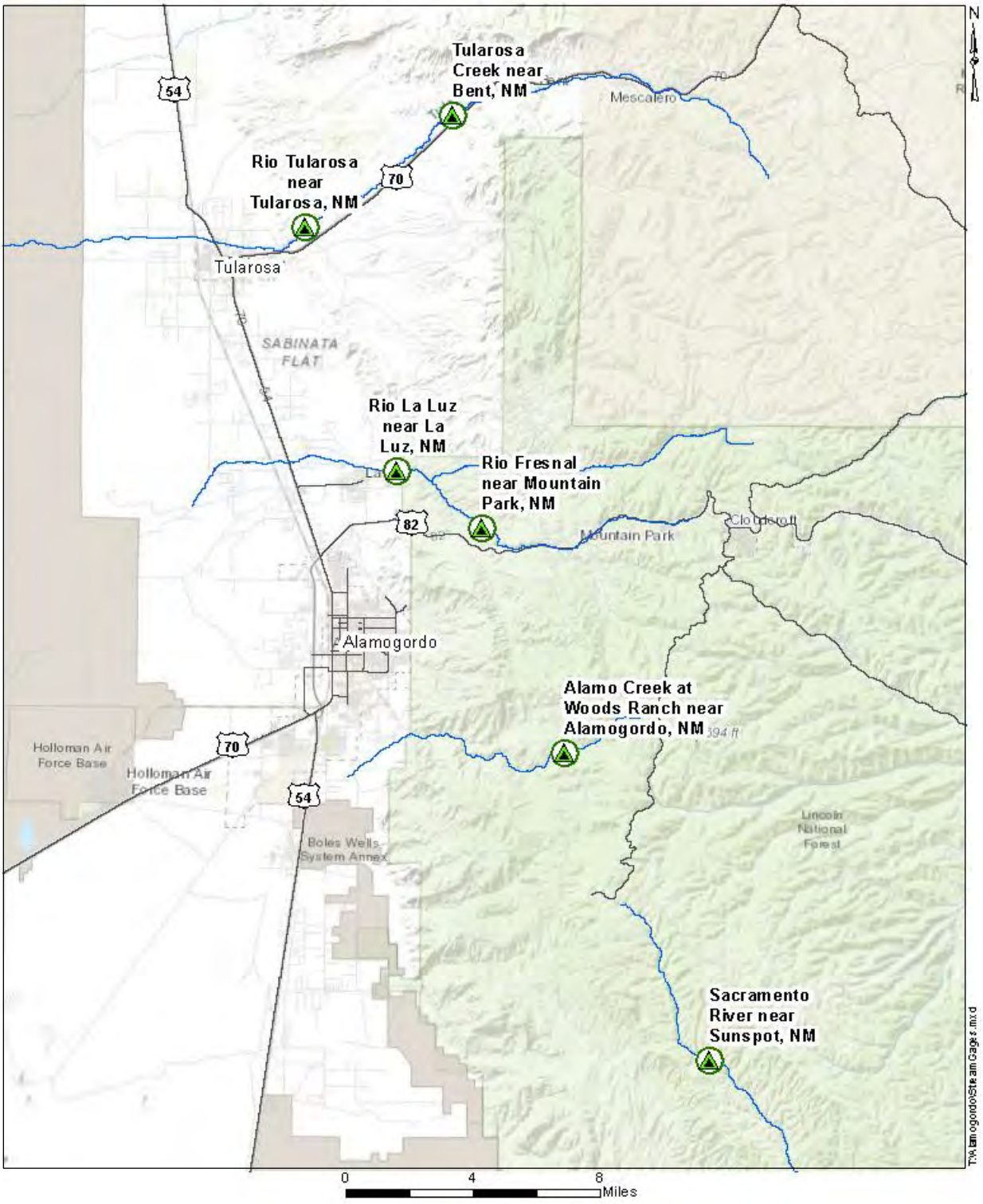

Figure A1. Map showing surface-water gaging stations in the City of Alamogordo 40-year water planning region, New Mexico.

A.1.2 Watershed Budget

The estimated watershed yield provides some estimate of runoff plus storage in the soil horizon and groundwater recharge to mountain block for a particular watershed. Not all of the watershed yield can be captured. Furthermore, not all of the streamflow can be captured; particularly storm flow events. Of particular importance are the water budgets for La Luz Canyon and Alamo Canyon watersheds and the availability of surface water. Table A2 summarizes the surface water components of each of these watersheds. The water rights in La Luz Canyon are greater than the estimate yield, and can only be fully exercised in times of above-average precipitation and streamflow. Upon reviewing Table A2, it is apparent that the availability of streamflow is limited, and surface water is over-appropriated.

Table A2. Surface-water components of Alamo Canyon and La Luz Canyon, City of Alamogordo 40-year water planning region, New Mexico

component	Alamo Canyon	La Luz Canyon
watershed yield, acre-feet per year (ac-ft/yr)	3,460	10,900
mean annual flow, ac-ft/yr	1,280	8,600
percent of streamflow resulting from storm flow events	10 to 20 [a]	
total surface water rights	3,078	6,700 +
estimated range in annual streamflow, ac-ft/yr	700 to 2,000 [b]	4,800 to 13,300 [b]

[a] based on analysis of daily streamflow for Rio Tularosa, Tularosa Creek, and La Luz Creek
[b] based on analysis of annual streamflow for Rio Tularosa, Tularosa Creek, and La Luz Creek

A.1.3 City's Surface Water Supplies

Historically, more than 70 percent of the City of Alamogordo's water supply has been derived from surface water that is affected by drought. Figures A2, A3, and A4 present historical surface-water diversions from La Luz-Fresnal Canyon, Alamo Canyon, and Bonito Lake, respectively, from 1967 to 2010. Historical meter records document water diversions from La Luz-Fresnal Canyon, Alamo Canyon, and Bonito Lake to the City of Alamogordo. Meter records from a Parshall flume, referred to as La Luz-Fresnal Flume, document diversions from springs in La Luz-Fresnal Canyons. Meter records for Alamo Canyon document diversions from the springs in Alamo Canyon. Meter records for the Bonito Lake Receival document diversions from Bonito Lake when they reach La Luz WTP, where water has historically been apportioned between Alamogordo and Holloman Air Force Base.

Table A3 summarizes the annual surface water diversions, shows the average diversion for the period 1967 to 2010, and shows the annual diversion rate that statistically will occur 95 percent of the time (the fifth percentile of the historical data-set).

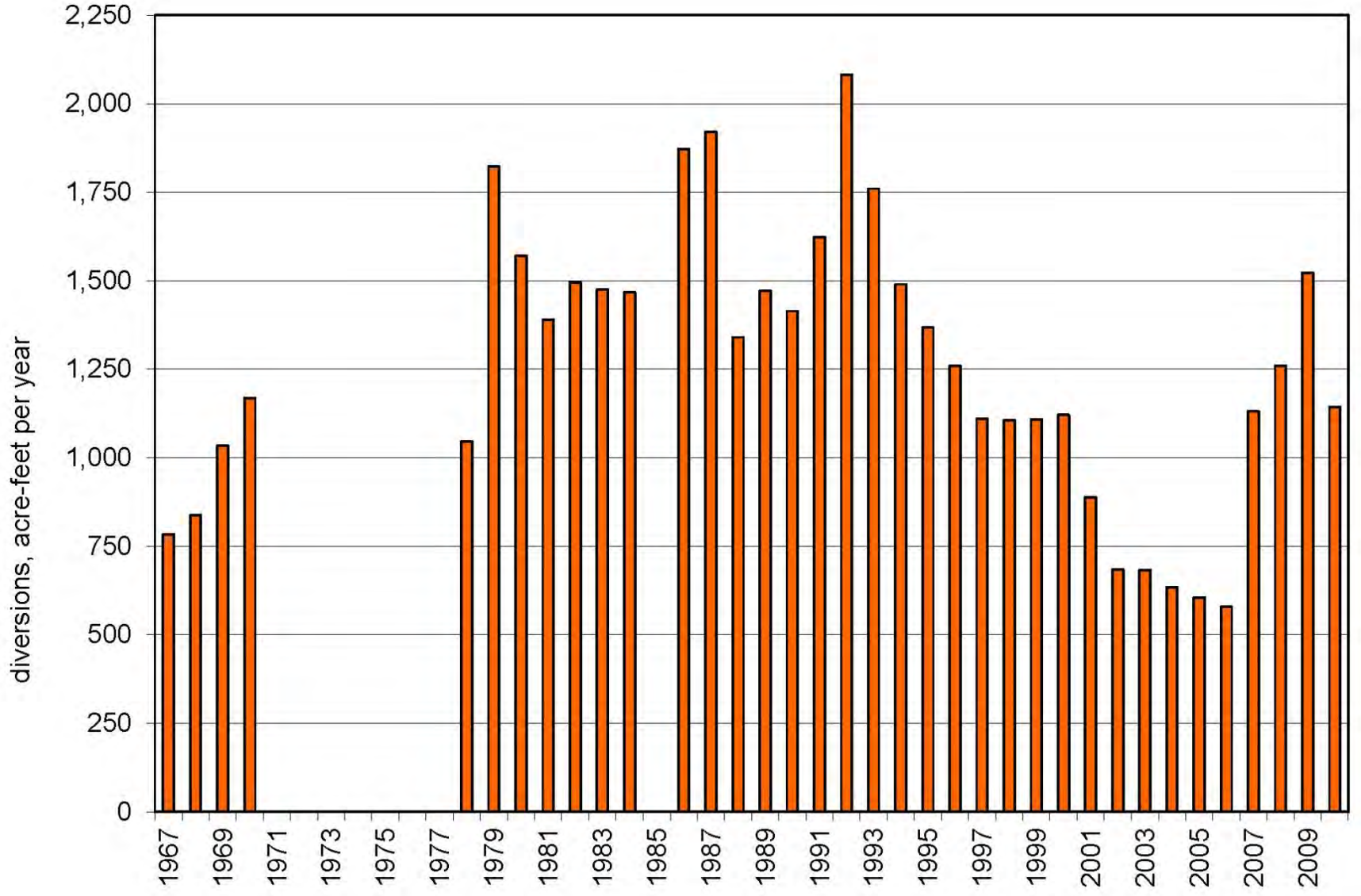

Figure A2. Graph showing surface-water diversions from Alamo Canyon, from 1967 to 2010, for the City of Alamogordo.

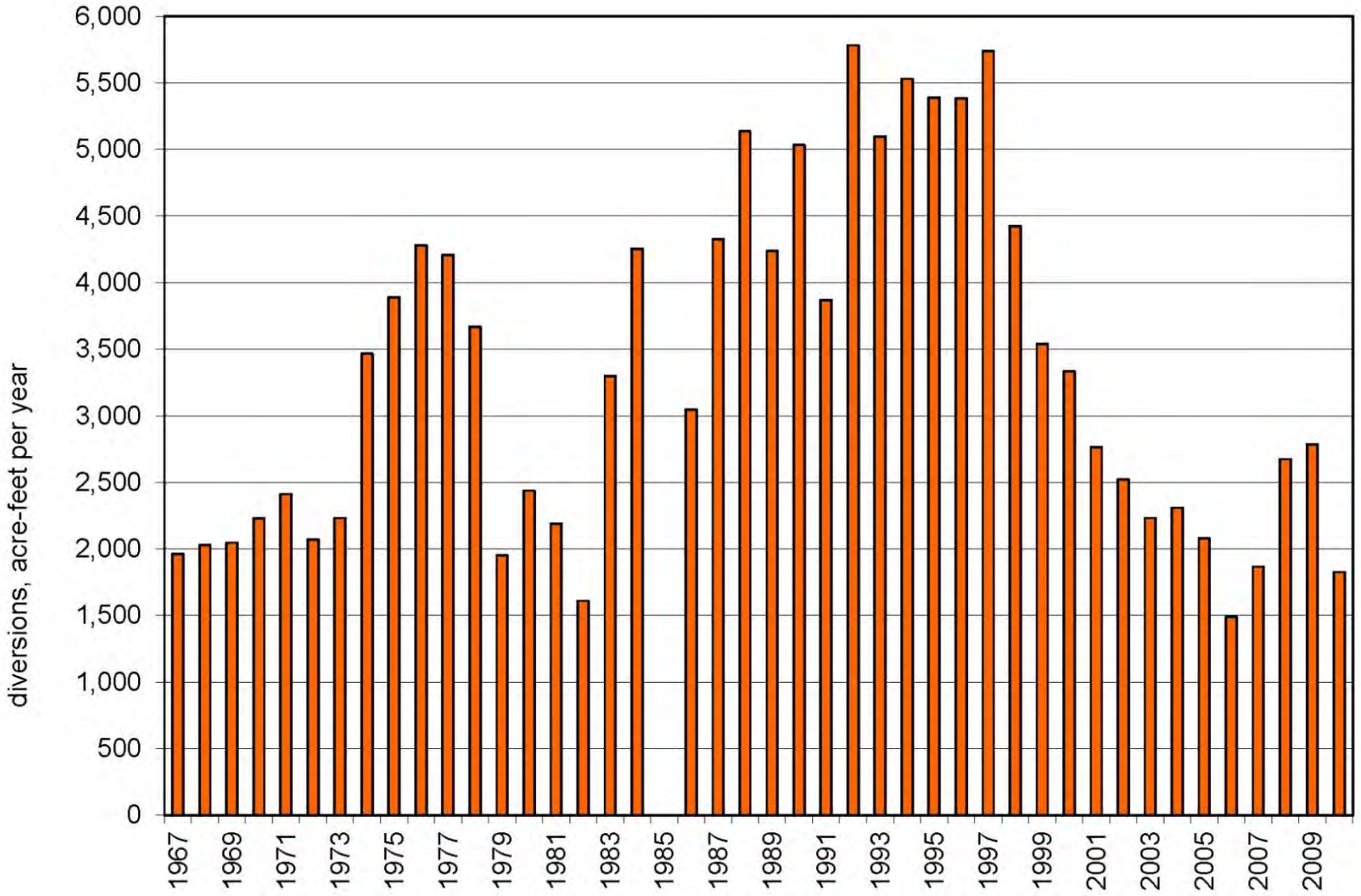

Figure A3. Graph showing surface-water diversions from La Luz-Fresnal Canyon, from 1967 to 2010, for the City of Alamogordo.

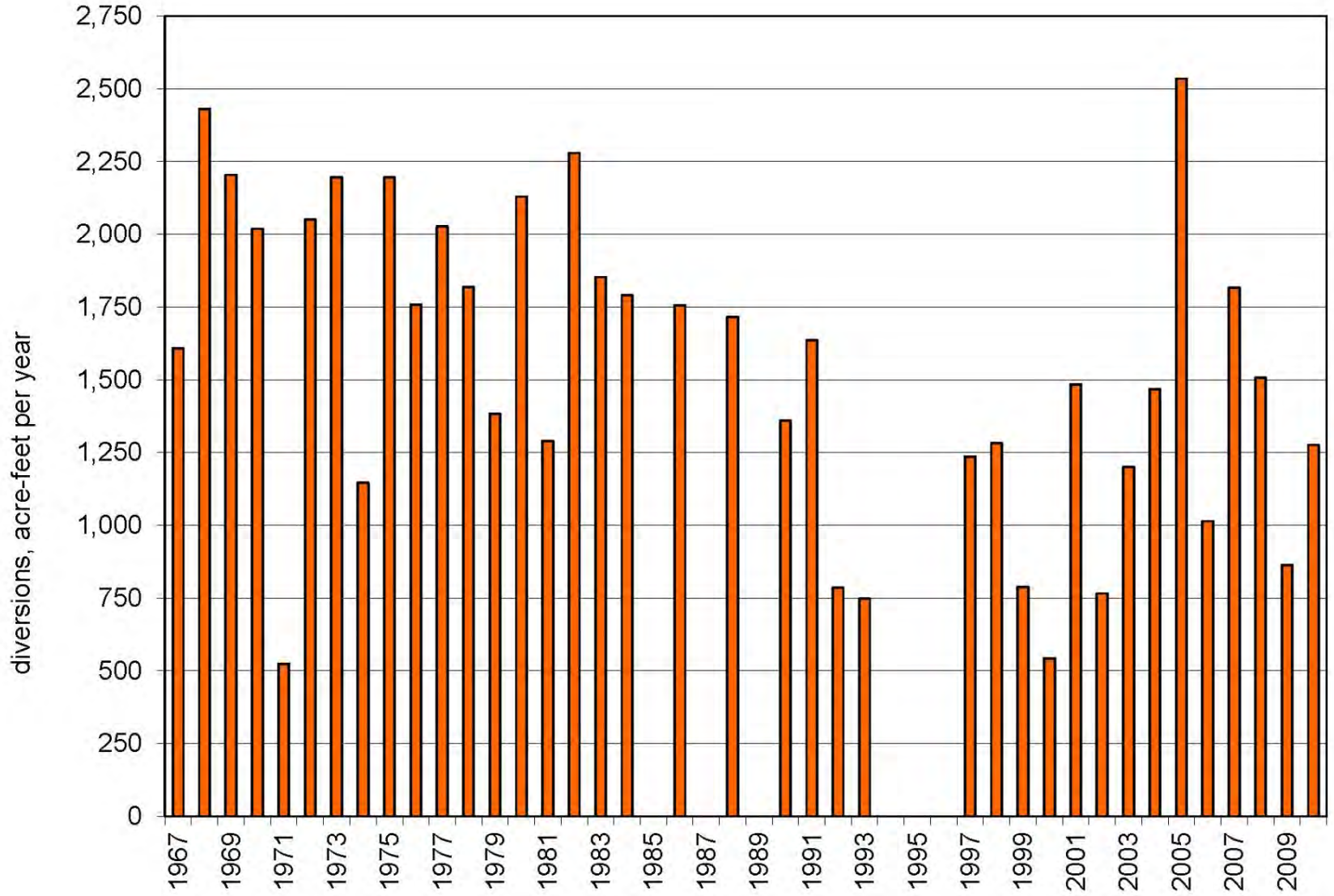

Figure A4. Graph showing surface-water diversions from Bonito Lake, from 1967 to 2010, for City of Alamogordo and Holloman Air Force Base.

Table A3. Historical diversions measured at La Luz-Fresnal Flume, Alamo Canyon, and Bonito Lake Receival, City of Alamogordo 40-year water planning region, New Mexico

year	diversion, acre-ft		
	La Luz-Fresnal	Alamo Canyon	Bonito Lake*
1967	1,961	784	1,608
1968	2,028	838	2,431
1969	2,046	1,034	2,204
1970	2,229	1,169	2,019
1971	2,412	(b)	524
1972	2,070	(b)	2,050
1973	2,232	(b)	2,196
1974	3,466	(b)	1,146
1975	3,891	(b)	2,196
1976	4,279	(b)	1,759
1977	4,209	(b)	2,027
1978	3,670	1,046	1,818
1979	1,951	1,823	1,383
1980	2,437	1,570	2,129
1981	2,189	1,390	1,290
1982	1,610	1,495	2,279
1983	3,299	1,475	1,853
1984	4,255	1,467	1,791
1985	(a)	(a)	(a)
1986	3,047	1,872	1,757
1987	4,326	1,920	(a)
1988	5,137	1,340	1,715
1989	4,237	1,471	(a)
1990	5,032	1,414	1,359
1991	3,869	1,491	1,637
1992	5,782	2,081	786
1993	5,099	1,760	748
1994	5,529	1,490	(a)
1995	5,330	1,368	(a)
1996	5,382	1,260	(a)
1997	5,739	1,111	1,236
1998	4,425	1,106	1,282
1999	3,542	1,108	788
2000	3,334	1,121	542
2001	2,765	888	1,484
2002	2,523	684	766
2003	2,232	683	1,200
2004	2,309	634	1,468
2005	2,080	605	2,535
2006	1,489	579	1,014
2007	1,866	1,131	1,817
2008	2,674	1,260	1,506
2009	2,784	1,522	864
2010	1,826	1,143	1,277
average diversion, acre-ft	**3,318**	**1,257**	**1,539**
diversion exceeded 95% of the time, acre-ft	**1,653**	**601**	**542**
95% tolerance interval	**1,489 to 1,961**	**579 to 784**	**524 to 788**

* total diversions for City of Alamogordo and Holloman Air Force Base
(a) no data available
(b) diversion system under repair during this period and surface-flow diversion data-set incomplete
[c] based on the 5th percentile of the historical dataset

A.1.4 Definition of Firm Yield

A water-supply definition for *firm yield* can be found in Linsley et al. (1982), and is "*Firm yield is the minimum yield during the life of the reservoir* [supply]." Therefore, the firm yield is based on the worst years in the record for water supply, which includes hydrologic and system limitations, and ultimately reflects reliability of supply. A case study in Linsley et al. (1982) demonstrates that simply using the average or median tends to overestimate supply. To base the availability of water supply on the assumption of stationarity of streamflows in semi-arid and arid regions is described by Evans (1985) as unrealistic, and other statistical analyses, such as the use of confidence intervals, provides a more realistic approach to determining firm yield (supply).

A.1.5 Firm Yield Method for Surface Water Sources

The firm yield analysis is based on diversion records, and it is assumed that the amount of water diverted is the maximum amount that could be diverted. This assumption is based upon knowledge of the City's operations and communications with City staff. Any amount of water that was not diverted, for any reason, is not measured and therefore cannot be counted upon. Because the datasets are not normally distributed, non-parametric statistical analysis of the fifth percentile of the historical surface water diversion dataset, and the tolerance interval associated with the fifth percentile, was determined to be the most sound and appropriate method for determining the firm yield of Alamogordo's surface water supplies. These methods rely on historical surface-flow data as opposed to assumptions about future flows (Helsel and Hirsch, 1992). Calculating a percentile of the historical dataset is essentially using observations from the past to make inferences about what can be expected for the future. The fifth percentile was chosen as a conservative flow value that is available upon demand, since 95 percent of historical flows exceeded the fifth percentile.

The tolerance interval is essentially a confidence interval centered around a percentile, and is "the most commonly reported statistic for analyses of low flows (Helsel and Hirsch, 1992)." A confidence level of 90 to 99 percent is commonly used for hydrologic applications (Yevjevich, 1982). A confidence limit of 95 percent was used in calculating the tolerance interval for the fifth percentile. Because the annual surface-water diversion datasets for La Luz-Fresnal Canyon, Alamo Canyon, and Bonito Lake do not have normal distributions, non-parametric methods were used to determine the fifth percentiles and the tolerance intervals presented in Table A3.

A.1.6 Alamo Canyon

Alamo Canyon, which has a drainage area of 25 square miles, drains from the Sacramento Mountains into the lowlands of the Tularosa Basin about 3 miles southeast of Alamogordo. When the City was founded in 1898 its original water supply was brought by pipeline from Alamo Creek. Streamflow measurements from Alamo Creek from 1933 to 1950 indicated an average of 1,283 ac-ft/yr (Table A1), and the USGS has estimated streamflow in Alamo Creek to average 1,433 ac-ft/yr (Table A2). The chemical quality of the water is generally good; it commonly contains about 500 milligrams per liter (mg/L) total dissolved solids (TDS) and about 130 mg/L sulfate. The water rights of Alamo Creek (3,078 ac-ft/yr) are owned by the City of Alamogordo. The City has extended its pipeline upstream to utilize springs in Alamo Canyon and its tributaries. A graph showing the diversions from Alamo Canyon is provided as Figure A2. Diversions from Alamo Canyon averaged 1,257 ac-ft/yr over a 44-year historical period (see Table A3). The minimum diversion of 579 ac-ft/yr occurred in 2006.

A.1.7 La Luz Creek

La Luz Creek is a perennial stream fed by springs along La Luz and Fresnal Canyons and their tributaries. The drainage area of La Luz Creek above the community of La Luz is about 65 square miles. La Luz, located 6 miles north of Alamogordo, was established in 1864, and later the communities of Mountain Park and High Rolls were established upstream along Fresnal Canyon. The City of Alamogordo owns approximately 12,500 ac-ft/yr of water rights associated with La Luz Creek. The USGS gauged daily base flow in La Luz Creek from 1982 to 1989, which showed an average daily base flow of 12 CFS or 8,694 ac-ft/yr (Table A1). La Luz Irrigation District has rights to the first 400 gallons per minute (gpm) diverted from La Luz-Fresnal system, which can significantly limit the City's diversion during drought conditions.

The TDS content of La Luz Creek water varies from 672 mg/L at a spring in Fresnal Canyon to 1,700 mg/L near La Luz railway station.

A graph showing the diversions from La Luz Creek is provided as Figure A3. Diversions from La Luz Creek have averaged 3,318 ac-ft/yr over a 44-year historical period (see Table A3), but a significant decline in water diverted from La Luz Creek has occurred despite the fact that the diversion system has been modified for optimum capture (see Figure A3). The minimum diversion of 1,489 ac-ft/yr occurred in 2006.

The recent decline in diversions from La Luz Creek is largely due to drought conditions, but domestic water demands (from more than 480 wells) in La Luz Creek watershed have increased over the last 15 years. These wells contribute to reducing streamflow by diverting (pumping) groundwater before it reaches the stream and becomes surface flow.

A.1.8 Bonito Lake

Bonito Lake is located approximately 15 miles northwest of the Village of Ruidoso, within the Lower Pecos River Drainage Basin. The Lake is owned and operated by the City of Alamogordo as a municipal water supply for Alamogordo, Holloman Air Force Base (AFB), Carrizozo, Nogal and Ft. Stanton. Although the Lake is not physically within the Tularosa Basin, a 90-mile long pipeline carries Bonito Lake water to Alamogordo and Holloman AFB. The City of Alamogordo and Holloman each own 1,449 ac-ft/yr of water rights (2,898 ac-ft/yr combined). Annual amounts of water diverted from Bonito Lake, which have been less than the combined right, are divided evenly between Alamogordo and Holloman. Other entities owning Bonito Lake water rights, which total approximately 190 ac-ft/yr, are Carrizozo and Nogal.

Water from Bonito Lake, superior in chemical quality at 300 mg/L TDS, is mixed with the spring and groundwater at La Luz Water Treatment Plant (WTP) to increase the overall supply and improve the quality.

Bonito Lake had a surface area of approximately 100 acres (US Bureau of Reclamation, 1989) with a maximum depth of about 75 ft. The Lake was constructed in 1931 and drains a watershed of more than 21,000 acres (33 square miles).

A graph showing the diversions from Bonito Lake is provided as Figure A4. The average annual diversion from Bonito Lake to the City of Alamogordo over a 44-year historical period was only about 760 ac-ft/yr. The total firm supply of Bonito Lake is calculated as 542 ac-ft/yr. The City of Alamogordo's portion is one half of the firm supply based on the total diversion shared with Holloman AFB (Table A3). It should be noted that the diversions from Bonito Lake over a 44-year historical period accounted for only about 5 to 19 percent of the overall water supply to Alamogordo.

Prior to the Little Bear fire, the Bonito Lake supply had been highly unreliable due to low storage during periods of drought, pipeline conditions, periods of poor water quality due to fall and spring turn over, and minimum lake-level requirements for fish, wildlife, and recreation. In addition, the reservoir is over 75 years old and has lost significant storage capacity due to sedimentation. The 2012 Little Bear fire severely burned the majority of the Bonito Lake watershed, and rain storms following the fire silted-in the reservoir to where it was inoperable. Efforts to reclaim Bonito Lake are in progress, but it may be over a decade before Bonito Lake will be able to supply water to Alamogordo.

For planning purposes, it is assumed that the City of Alamogordo's portion of the Bonito Lake supply is approximately 271 ac-ft/yr (half of firm yield).

A.1.9 Firm Yield Analysis

Based on a 44-year period from 1967 to 2010, the diversions that are met or exceeded 95 percent of the time, calculated for La Luz-Fresnal (1,653 ac-ft/yr), Alamo Canyon (601 ac-ft/yr), and Bonito Lake (271 ac-ft/yr) water delivered to the City of Alamogordo, are estimates of the firm yield from each of these sources. Including data from the 1980s and early 1990s leads to a higher estimate of firm yield, because above-normal precipitation during this period caused an increase in streamflow during this time. Table A4 summarizes the City of Alamogordo's surface water sources, water rights and firm yield.

Table A4. City of Alamogordo's surface water sources, water rights, and firm yield, City of Alamogordo 40-year water planning region, New Mexico

surface water source	water right, ac-ft/yr	firm yield, ac-ft/yr
Bonito Lake**	1,449	271
La Luz- Fresnal	891 ac-ft/yr + 16 CFS*	1,653
Alamo Canyon	3,078	601
total surface water	**5,418 ac-ft/yr + 16 CFS***	**2,525**

* 16 cfs (cubic feet per second) is time-of-day limited
** currently firm yield is zero due to the destruction from the Little Bear Fire
ac-ft/yr - acre-feet per year

Therefore, the firm yield of Alamogordo's surface water sources indicates a potential minimum available supply of about 2,525 ac-ft/yr. However, it is possible that the City may experience extended severe drought conditions or other circumstances in the future where there is little or no surface water supply, and water demands must be offset entirely by groundwater resources.

There are three options for determining the availability of surface water for this Plan, and the most conservative figures (numbers 2 and 3 below) have been used:

1. New Mexico Office of the State Engineer (NMOSE) settlement agreement total of 3,513 ac-ft/yr
2. Firm yield calculated total of 2,525 ac-ft/yr
3. Conjunctive use management assumption of zero surface water

For planning purposes, the City of Alamogordo will rely on a future firm surface-water supply of only 2,525 ac-ft/yr. During extreme drought conditions, the City will not rely on any surface water supply.

Appendix B.

Background on Groundwater Resources

APPENDIX B.

BACKGROUND ON GROUNDWATER RESOURCES

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APPENDIX B.

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APPENDIX B.

B1.0 BACKGROUND ON GROUNDWATER RESOURCES

B1.1 Regional Supply

Groundwater in the City of Alamogordo 40-year water planning region can be divided into two generalized geologic settings: 1) the basin fill aquifer, and 2) the bedrock aquifer. The extent and total dissolved solids (TDS) content of water in the basin fill aquifer is shown in Figure B1. The majority of the wells in the planning Region produce from the basin fill aquifer. The basin fill aquifer is known to have the highest well yields in the planning region, suitable for irrigation and municipal supply. All of the City's groundwater supply wells are constructed in the basin fill aquifer; however, some of the most productive wells in the planning region are completed in basin fill as well as bedrock. The bedrock aquifer alone is not suitable for municipal supply wells.

B1.2 City Groundwater Supply

The City has groundwater supply wells associated with La Luz Well Field (T-32-S through T-32-S9), the Prather Well Field (T-33-POD3 and T-33-POD4), the Golf Course Well (T-814), and the Mountain View Well (T-3489-POD2). Well locations are shown in report Figure 3. Historical meter records document water diversions from La Luz and Prather Well Fields, and the Golf Course Well. The Mountain View Well is not currently equipped.

B1.3 La Luz Well Field (T-32-S through T-32-S-9)

Some of the most productive wells in the planning region are completed in basin fill as well as bedrock. One example of production from the basin fill and bedrock aquifers is the City of Alamogordo's La Luz Well Field, where well yields range from 250 gallons per minute (gpm) to 900 gpm. Alamogordo's La Luz Well Field is located a few miles north of Alamogordo. La Luz Well Field data are summarized in Table B1.

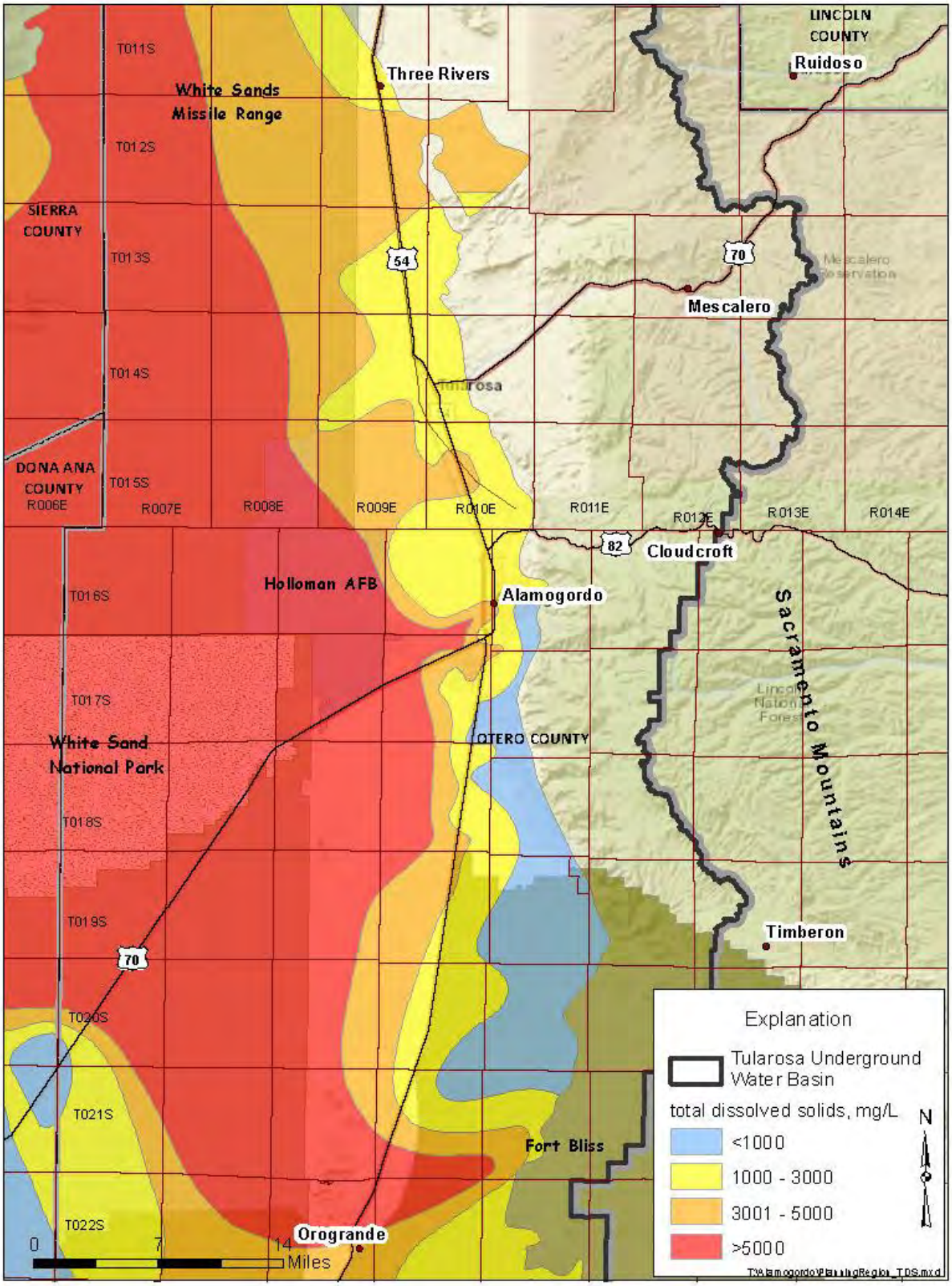

Figure B1. Map showing the extent and total dissolved solids (TDS) content of water in the basin-fill aquifer, City of Alamogordo 40-year water planning region, New Mexico.

Table B1. Summary of well data for the City of Alamogordo's La Luz Well Field, Otero County, New Mexico

well	Well No. 2 repl.	Well No. 3 repl.	Well No. 4	Well No. 5 repl.	Well No. 6 repl.	Well No. 7	Well No. 8
date drilled	2012	2008	1964	2008	1992	1971	1999
total depth, ft	990	880	780	935.7	844	750	991
water level, ft bgl	424	400	440	438	359	336	408
water column, ft	566	480	340	497.7	485	414	583
pumping level, ft bgl	500	590	516	615	500	481	625
instantaneous production rate, gpm	600	500	320	600	900	850	250

feet bgl - feet below ground level
gpm - gallons per minute
n/a - not available

La Luz Well Field consists of seven wells, and is used to meet summer water demands when surface-water diversions are typically low. Historically, the well field has been pumped approximately six months out of the year from April to September. Figure B2 presents historical annual diversions from La Luz Well Field. Annual diversions from La Luz Well Field have ranged from 147 acre-feet per year (ac-ft/yr) to 2,750 ac-ft/yr, with an average of about 1,195 ac-ft/yr. The fluctuation in diversions from the well field has varied as a result of changes in surrounding demand from other groundwater users, encroachment of junior water rights, variable recharge and aquifer storage capacity, and ability to use surface water and reclaimed water to meet part of the City's total water demand.

Water level declines have accumulated in La Luz Well Field area, and the average water level decline has been approximately 0.5 feet per year, but varies from well to well. The observed water level declines in La Luz Well Field area are a result of local and regional groundwater pumping, reduced recharge from captured stream flow, and numerous domestic wells. Additionally, the water quality diminishes throughout the pumping season.

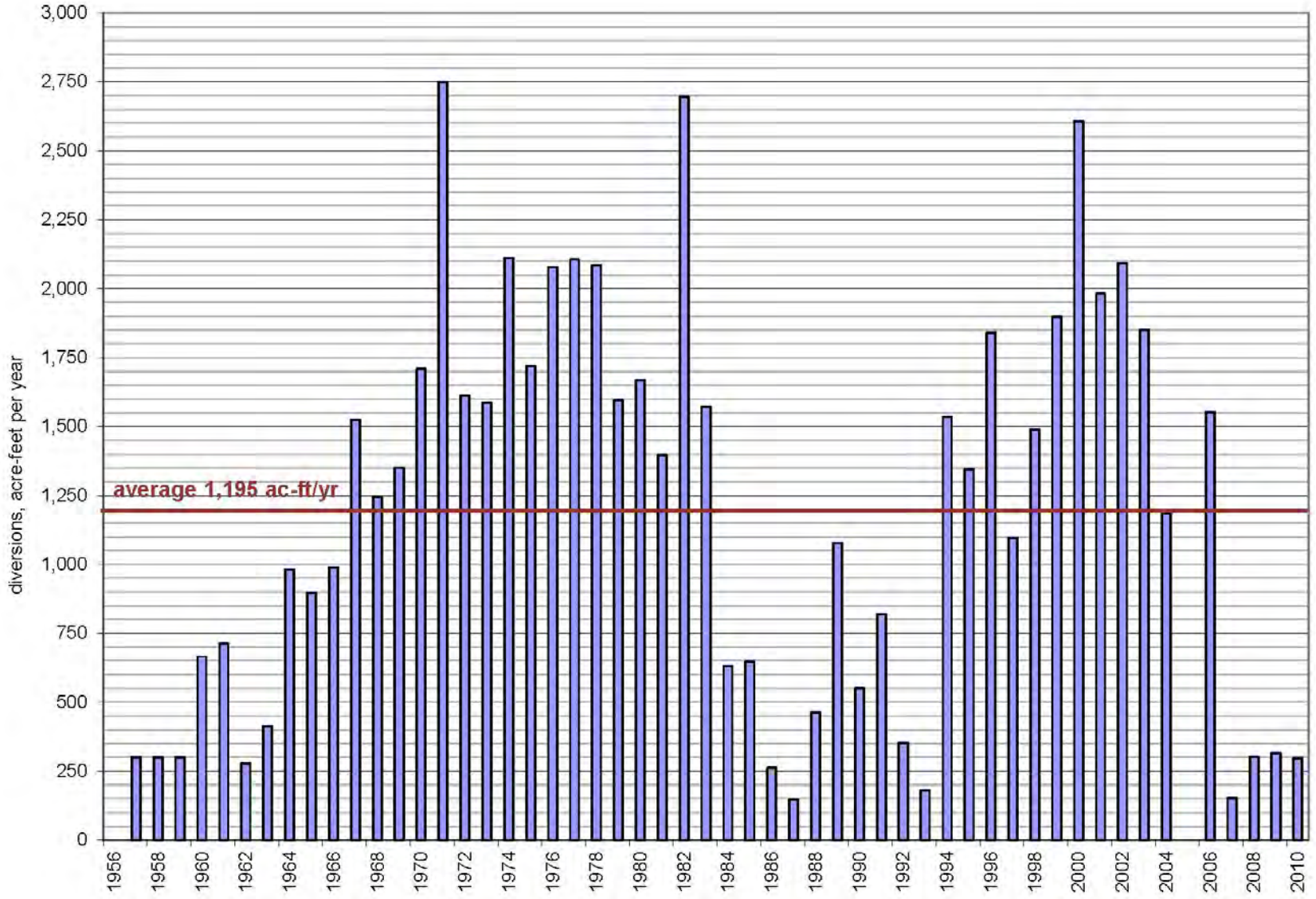

Figure B2. Graph showing groundwater diversions from La Luz Well Field, from 1957 to 2010, for the City of Alamogordo.

Reliable supply from La Luz Well Field is difficult to estimate because it would depend on successful New Mexico Office of the State Engineer (NMOSE) applications to replace wells, and management decisions such as acceptable levels of long-term drawdown and pumping rates of individual wells, as well as recharge and aquifer management.

An analysis of the potential yield from La Luz Well Field was performed using the JSAI groundwater flow model (JSAI, 2006). The long-term predicted yield from La Luz Well Field, assuming a successful well replacement program and optimum well efficiency, is 2,979 ac-ft/yr as shown in Table B2.

Table B2. Summary of predicted yield from La Luz Well Field assuming optimum well efficiency and the ability to replace wells and maintain efficiency

La Luz Well	predicted yield, acre-feet
2	314
3 repl.	538 [a]
4	340
5 repl.	646 [b]
6 repl.	387
7	580
8	174
total	2,979

[a] based on operation at 500 gpm, 8 months out of each year (JSAI, 2009, Well report: City of Alamogordo La Luz Well No. 3-R, T-32-S-4: consultant's report prepared by John Shomaker & Associates, Inc., for City of Alamogordo, 13 p. plus figures and appendices)

[b] based on operation at 600 gpm, 8 months out of each year (JSAI, 2009, Well report: City of Alamogordo La Luz Well No. 5-R, T-32-S-6: consultant's report prepared by John Shomaker & Associates, Inc., for City of Alamogordo, 13 p. plus figures and appendices)

Another factor limiting yield from La Luz wells is water quality. The average TDS concentration is approximately 1,500 mg/L to 1,800 mg/L in water produced from the well field. Without blending with surface water, the water produced from the wells would need to be treated to meet the desired water quality requirement of 800 mg/L TDS. Therefore, the production from La Luz wells is limited by the available surface water for blending or would be reduced to reflect losses due to treatment.

B1.4 Prather Well Field (T-33-POD3 and T-33-POD4)

Prather Wells No. 1 and No. 2 were replaced in January 2010. Currently, based on evaluation of pumping test data, the two Prather wells can produce a combined 500 ac-ft/yr, and the permitted water right for the Prather Well Field is now 500 ac-ft/yr.

B1.5 Golf Course Well (T-814)

The Golf Course Well (T-814) was in poor condition and replaced in 2005. The replacement well was drilled deeper and produced better quality water than the old well. The replacement well is capable of producing 423 ac-ft/yr, which is 153 ac-ft/yr more than the permitted right of 269.9 ac-ft/yr. An application to make a portion of the Golf Course Well diversions supplemental to T-32-S-2 through T-32-S-9 (La Luz wells) for 160 ac-ft/yr was approved by the NMOSE in 2008. Under the approved permit, a total of 429.9 ac-ft/yr can be diverted from the Golf Course Well.

Only in years when the diversion from the Golf Course Well exceeds 269.9 ac-ft/yr will the additional water be counted toward beneficial use of the water right under T-32 et al.

B1.6 Mountain View Well (T-3489-POD2)

The Mountain View Well was replaced during the summer of 2006. The City filed an application to replace T-3489 (True Value Well) at a location 500 feet to the west and in the same administrative block. The application was published and protested, although the NMOSE granted the City emergency authorization to replace T-3489. The Mountain View Well was completed to 500 feet and is capable of producing the allocated water right of 160 ac-ft/yr. Water produced from the Mountain View Well is slightly saline and will require treatment prior to use for drinking water supply.

B1.7 Snake Tank Well Field (T-3825 et al.)

The City's Snake Tank Well Field and ARWSP is under construction and will be on-line soon. The City completed the water rights hearing process and was granted 4,000 ac-ft/yr of brackish water under T-3825 et al., which can be increased up to 5,000 ac-ft/yr, provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 ac-ft/yr. However, for firm yield calculations, an average diversion of 4,000 ac-ft/yr has been assumed.

B1.8 Firm Groundwater Supply

As a way to quantify the City's current and future water needs, and to be consistent with the approach used for surface water, it is necessary to estimate firm groundwater supply of existing groundwater rights using the potential long-term yield of existing wells in their current condition.

Since the development of the previous 40-Year Water Development Plan for the City (Livingston Associates, and JSAI, 2006), La Luz Wells 3 and 5, the Prather Wells, and the Golf Course Well have been replaced and brought into production, and the Mountain View Well has been replaced but is not yet in production. Table B3 presents an estimate of the firm groundwater supply currently available to the City of Alamogordo.

Table B3. Summary of City of Alamogordo's groundwater rights and firm supply

supply name	NMOSE File Number	water right, ac-ft/yr	firm supply, ac-ft/yr
La Luz Wells	T-32-S-2 to T-32-S-9	3,000	2,979 [a]
Prather Wells	T-33-POD3, T-32-POD4	500	500
Golf Course	T-814	269.9	270
Mountain View	T-3456	160.3	160
Snake Tank Well Field	T-3825 et al.	4,000 [c]	3,360 [b]
Total		**7,930.2**	**7,269**

[a] based on increase in firm supply associated with replacing Wells 3 (T-32-S-4) and 5 (T-32-S-6), and planned replacement of additional wells under T-32 et al. to maintain optimum well efficiency
[b] based on 4,000 ac-ft/yr and an 84-percent treatment recovery
[c] permit conditions allow diversion up to 4,000 ac-ft/yr, but can be increased up to 5,000 ac-ft/yr, provided that the sum of annual diversions for any consecutive 5-yr period does not exceed 20,000 ac-ft/yr
NMOSE - New Mexico Office of the State Engineer
ac-ft/yr - acre-feet per year

For planning purposes, the City of Alamogordo will rely on a firm groundwater supply of 7,269 ac-ft/yr, which includes the Alamogordo Regional Water Supply Project (ARWSP). This will be considered the sole water supply for severe drought condition planning. Without ARWSP, the City of Alamogordo has a firm groundwater supply of only 3,909 ac-ft/yr.

Appendix C.

Water Rights Documents

- **Bonito Lake**
- **La Luz-Fresnal**
- **Alamo Canyon**
- **La Luz Wells and Gold Course Well**
- **Prather Wells**
- **Mountain View Well**
- **Snake Tank Well Field**

- **Bonito Lake**

- SP13_permit_1907
- SP13_Bonito_Lake_1180af_license_1932
- SP13_final_judgement _1934

2 C

2-27-07

For original records - see Book 1- Page 10- Misc. Water records.

APPLICATION OF EL PASO & ROCK ISLAND R.R. CO. TO CHANGE POINT OF DIVERSION, ETC., ON BONITO RIVER

El Paso, Texas,

May 21st, 1907

V. L. Sullivan

Territorial Engineer

Application is hereby made by the undersigned for permission to change the place of diversion of five (5) cubic feet of water out of the total amount of water now being diverted from the Bonito river in Lincoln County, New Mexico, through the ditches and irrigating canals heretofore constructed and owned respectively, and used upon the real estate belonging to the following named persons:

Arch Parker, G. M. Hughes, Wm. Graham, P. G. Peters,

Francis M. Crockett, J. P. Perry, John H. Skinner,

Sophia Thinkston, Martin May and _____ Long,

and now held under option and owned by the undersigned, all of which ditches are constructed out of such Bonito river and all of which land, upon which water is so used, lying between the Ft. Stanton Sanitarium Reservation and the junction of the south and west forks of said Bonita river, so that instead of such amount of said water being diverted through said ditches respectively to point of diversion, the same may, by the undersigned be changed from the places now respectively made to a point on the south fork of the Bonita River to be selected and more particularly described when surveys therefore are completed; and that the place and manner of application and use of said water may also be changed by the undersigned so that instead of use thereof for agricultural and domestic purposes, as now conducted, the same may be used for engines and trains and for drinking and other domestic purposes along the line of the railroad so owned by the undersigned.

And for reason of said application the undersigned states as follows:

That it is a corporation organized under the Laws of New Mexico and is the owner and in operation of a line of railroad extending from Carrizozo, New Mexico, to Santa Rosa, New Mexico, which is a section of country devoid of any water suitable for engine purposes or for domestic use, and which requires purification and treatment at great cost and expense before the same can be used for such engine purposes, but when so treated is unfit for use for domestic purposes; that by virtue of said scarcity of water the undersigned has been unable to procure at any other point tributary to its line of railroad, a satisfactory supply of water with which such operations can be conducted and that its inability to do so has resulted and is resulting in great loss to it in the management of its trains and railroad, and that such absence of water fit for domestic use largely tends to prevent it from employing and settling along its line of road, as is necessary, employes sufficient for the operation thereof; and that by virtue of said facts the public interests are greatly damaged and the upbuilding of the section of the country traversed by said railroad largely embarrassed and interfered with. That, recognizing such facts, the undersigned has acquired the ownership and taken options upon the water rights above described and previously owned and enjoyed by the parties named, all of whom have separate ditches coming out of the Bonita River, the exact location of which cannot be described for want of surveys and in good faith intends, without unnecessary delay, to construct a pipe line extending from the south fork of the Bonito river, in event its application herein made is granted, to said railroad and along the lines thereof, a total length of about one hundred and seventy (170) miles; and by means thereof to carry such water so diverted from said Bonito River and across the divide north and west therefrom to the line of said railroad and there supply the same for the purposes aforesaid.

The undersigned states that it has not yet acquired the ownership

of all of the water rights above described, but that it has options for purchase therefor, and that, in event its application for the right to change the point of diversion and the place and manner of use of said waters, is approved by said Territorial Engineer, it will purchase and acquire under said options, before said decision or right is exercised, the remainder of said water rights which it has not to the date hereof so purchased.

The premises considered, the undersigned requests that publication of this application be made by the Territorial Engineer as required by law, and that the same upon such publication being completed, be in all things granted.

El Paso & Rock Island R.R. Co.

By W. A. Hawkins
Agent

STATE OF TEXAS)
) SS
COUNTY OF EL PASO)

On the 21st day of May, 1907, appeared before me W. A. Hawkins, who, being duly sworn, on his oath states that he has read the foregoing application and knows the contents thereof, and that the same is true in all things according to his best information and belief.

(Signed) W. A. Hawkins

Subscribed and sworn to before me on this the 21st day of May, 1907.

(Signed) Jno. Franklin
Notary Public, El Paso, County, Texas

DECISION OF TERRITORIAL ENGINEER IN THE MATTER OF THE APPLICATION OF THE EL PASO & ROCK ISLAND R. R. CO.

DECISION

In the matter of the Application of the El Paso and Rock Island Railway Company to divert waters of Bonito River in Lincoln County, New Mexico.

And now the application of the El Paso and Rock Island Railway Company for permission to change the place of diversion of five (5) cubic feet of water out of the total amount of water now being diverted from the Bonito River in Lincoln County, New Mexico, through ditches and irrigating canals used respectively upon real estate belonging to parties from whom the same has been acquired by the applicant by deed or option contracts from the appropriators and owners thereof, so that instead of such amount of water being diverted in such form and manner the same may by the applicant be changed from such places where such diversions are now made, to a point on the South Fork of the Bonito River in said Lincoln County, to be selected when surveys therefor are completed; and also that the place and manner of application and use of said water may also be changed by said applicant, so that instead of use thereof for agriculture and domestic purposes, the same may be used for engines and trains and for drinking and other domestic purposes along the line of railroad owned by said applicant, and for such purpose carried through a pipe line to said line of railroad, having been taken up in accordance with notice duly given to that effect by publication in the Capitan News, a newspaper of general circulation in the stream system of said Bonito River and the following persons having appeared before me and caused to be filed their protest against the allowance of said application, to-wit:-

Francisco Gomes, Trinidad Gallegos, Ramon Lujan, Losilado Solas, Peter Burlson, Telesforo Lopez, Pedro Samora, Elauterio Miribal, Teodoro Gambora, R. A. Duran, Henry Lutz, Francisco Gonzales, Esequel Vigil, Genovevo Griego, Trankalino Montoya,

E. W. Hulbert, J. A. Talley, Felipe Mes, Willie Fritz, Charles Fritz, F. W. Vorweck, L. H. Bradstreet, T. H. Kirkland, Florencio Mirales, Jose Chaves Y. Gallegos, Yjenio Baca, Santiago Gonzales, Lasero Montoya, Henry Fritz, Samuel Farmer, Rodolfo Montoya, Franciso Vigil, Manuel Martinez, Sembran Vigil, Isidoro Fresquez, Crecencio Torres, Jose Molino, Enriquez Mes, Jose M. Torrez, Lucio Montoya, Guillernio Uderost, Francisco Samora, David Gallegos, Juan Apodaca, Eugene C. Dow, Nicanor Dominguez, James M. Dow, Robert Stewart, Robert Stewart, Jr., A. L. Hulbert, Clifford Hulbert. W. O. Norman, Blanchard Bors., Anselmo Pacheo, Argon Bros., Z. A. Serrano, T. W. Watson, Roque Baldonado, Manuel Sedillo, Antonio Chavez, Ramon Mirabal, Roumaldo Mirabal, Juan Miribal, Jose Guttierres, Demecio Martinez, Victorio Martinez, Porferio Chavez, Jesus Miribal, Candelaris Griego, Florencio Griego, Felipe Gomez, Proopio Pacheo, Jesus Archuleta, Silvester Baca, Eucevio Baca, Gabriel Marques, J. W. Laws, Emma Fritz, J. E. Mundell, J. S. Parker, G. W. Barrett, W. H. Hurt,, Ira Robinson, and therein represented that they are owners or lessees of real estate in Lincoln County, situate adjacent to the Bonito River, which are irrigated and watered for agricultural and domestic purposes from the waters of said river, commencing towards the head water of the said river, with the lands of Ira Robinson, and extending down both banks of the Bonito River for a distance of about thirty five miles, which lands, they allege, have been irrigated and cultivated from said waters for more than thirty five years, and that the rights of said parties to said water are prior to the rights of the parties from whom the said Railway Company has acquired the

rights under which it claims, and also alleging, that said waters of said river become scarce as the season advances from the spring into the summer, to such an extent that they, the said protestants are entitled to the use of the whole thereof, and that at such times said protestants do not receive sufficient water for their said uses, and that in event the application of said applicant is granted, such protestants would have an inadequate supply for their uses, and that therefore they would be damaged by the diversion of any of the said waters at such period by the said applicant under the rights which it claims, and said protestants also having set up various legal objections other than the matters of fact above alleged in opposition to the granting of said application.

And also at the same time having appeared James E. Cree, through his attorney, who filed a protest against the granting of such application, setting up that he is the owner of certain lands in said protest described, and that said Bonito River flows there through, and that a part of said land was irrigated by said waters for many years; that the first appropriation of water was made on said land more than twenty years ago, and that for years thereafter seventy-five acres of said land was irrigated, and that there is appurtenant to said land a valid, subsisting water right owned by such protestant, and that he has used a part of said land for grazing purposes, and has watered large herds of cattle with such waters flowing through such lands for the past fifteen years during each of said years, and that his rights to such water are prior to the rights of the parties from whom the applicant has obtained the rights claimed by it, and that in event the application of such applicant is granted, the water of said Bonito River will be lessened to such an extent, that there will be no water on the land of said protestants during the dry seasons, and that he will be caused a great damage thereby, and also a protest of a general character by the Rio Hondo Reservoir Water Users Association.

And at the same time the said applicant having appeared through its attorneys, and filed affidavits of various parties in support of its right to divert said waters in accordance with its application, and the Engineer having considered said protests and the facts stated and reported by the protestants and also the other evidence and affidavits presented by the applicant, finds and determines as follows: That said applicant is a common carrier by railroad, and that the use of a sufficient amount of water of said Bonito River is necessary for the efficient operation of its trains and engines and other purposes as set up in such application, and that such use is for a beneficial purpose, both to the applicant and to the general public; that the applicant is an appropriator and owner of appropriations of the water of said Bonito River within the meaning of the law, both by legal title and by virtue of contracts from the following named persons:

Arch Parker, J. P. Perry, G. M. Hughes, Andrew C. Austin, Frank F. Austin, P. G. Peters, William Graham, Robert C. Dryden, Francis M. Crockett, John H. Skinner, Sophia Thingsten, Martin May and the Eagle Mining and Improvement Company, and that there is approximately three hundred and fifty (350) acres of land cultivated by the water appropriated from said river by said applicant, and such parties from whom it has such contracts, and that in event such application is granted, it is the purpose and intention of such owners to complete the transfer of such properties to the applicant, and of the applicant to accept the same; that the amount of water owned by the applicant and held under said contracts, while considerable, has never been determined and ascertained in cubic feet per second or by other calculated measurement; that there is apparently a sufficient amount of water in said Bonito River at all times during the years of average rain and snow fall, to supply the necessities and uses of all appropriators thereof, except that occasionally there are years within which there are short periods immediately preceding the summer rains when the same is considerably diminished;

that it is claimed by applicant that during such periods of minimum flow there will always be sufficient water, even though its application should be granted, to supply protestants and others having rights above Fort Stanton Military Reservation, and that at such periods none of the water which will be diverted by said applicant from above would reach the protestants below the Fort Stanton Military Reservation, because they allege the same sinks and does not reappear in said stream to the benefit of said protestants. The Engineer is of the opinion that it is impossible, without extended investigations and surveys, to determine even approximately how much water during such dry season which so sinks, re-appears and becomes serviceable to those below such Reservation, and that it is also impossible, without such investigations and surveys, to determine how much of the water which is claimed and appropriated by the applicant and those from whom it has obtained its rights, is consumed by other uses and does not again reach the stream so as to be serviceable to any of said protestants; and it further appearing to the Engineer that under the above circumstances the rights of all parties will be best protected by the character of a determination here made.

IT IS THEREFORE ORDERED, that the Application of said El Paso and Rock Island Railway Company as so made and filed in this office, be and the same is hereby approved as herein contained, and that said applicant be and is hereby allowed and granted permission and right to change the place and manner of diversion, conveyance and use in the manner and way for the purpose as described in said application, of so much and such part of said five (5) cubic feet per second of the water of said Bonito River the applicant may require for said uses and purposes, and of which it is the owner or shall become the owner of, under said contracts, before the exercise of the right to so divert and change the place and manner of use thereof according to the right hereby approved.

However, the same shall not be exercised at any time to the impairment and detriment of any of the protestants or others having valid claims to the use of water from said stream by subsisting prior, valid appropriations of said water, including all rights to such portions of all return waters of said South Fork of said Bonito River, as said method of proposed diversion may deprive them of.

Done in my office in the City of Santa Fe, on this second day of July, 1907.

Vernon L. Sullivan

Territorial Engineer

NOTICE OF APPEAL FROM DECISION OF TERRITORIAL ENGINEER, DECISION OF BOARD OF WATER COMMISSIONERS, NOTICE OF APPEAL FROM DECISION OF BOARD OF WATER COMMISSIONERS ALL IN THE MATTER OF THE APPLICATION OF THE EL PASO AND ROCK ISLAND R. R. COMPANY.

Appeal was made from the decision of the Territorial Engineer to the Board of Water Commissioners and filed in the office of the Territorial Engineer Aug. 1st, 1907, and is now filed with the Clerk of the said Board.

Acting upon the appeal filed Aug. 1st, 1907. The Board of Water Commissioners affirmed the decision of the Territorial Engineer in the following manner:- (recorded on page 34)

An appeal from the decision of the Board of Water Commissioners was filed with the Clerk of said Board March 28, 1908, by H. B. Hamilton & T. B. Catron, attorneys for protestants.

STATE OF NEW MEXICO)
:
Office of State Engineer)

LICENSE TO APPROPRIATE WATER

WHEREAS, during the period May 22nd, 1907 to June 30th, 1910, the El Paso and Rock Island Railway Company purchased certain lands along the Bonito River in Lincoln County, State of New Mexico, with appurtenant water rights, and

WHEREAS, on May 21st, 1907, said El Paso and Rock Island Railway Company made formal application to the then Territorial Engineer of New Mexico to change the point of diversion and place of use of said waters, which application was formally approved by the Territorial Engineer on July 2nd, 1907, after due publication and consideration of the protest filed by Francisco Gomez, et al, which decision was affirmed by the Board of Water Commissioners on February 3rd, 1908, and

WHEREAS, on November 21st, 1927, the said El Paso and Rock Island Railway Company made application for change from direct diversion of water to storage of water, which was approved by Herbert W. Yeo, State Engineer, on March 22nd, 1928, and

WHEREAS, on August 29th, 1931, said applicant filed Proof of Completion of Works, as evidenced by the Certificate of Construction issued this 30th day of January, 1932, and Proof of Application of Water to Beneficial Use, and

WHEREAS, on September 16th, 1931, the final inspection was made by W. Carlos Powell, Assistant State Engineer,

a licensed surveyor in the State of New Mexico, who was duly authorized to make such inspection and report, and final report was filed thereon on September 22nd, 1931, recommending the issuance of a license for the use of a reservoir of 1,180 acre feet capacity, to insure a continuous flow of five second feet of water.

NOW, THEREFORE, I, Geo. M. Neel, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the laws of said state, do hereby grant to the El Paso and Rock Island Railway Company, a New Mexico Corporation, a license to use a storage reservoir with a capacity of 1,180 acre feet of water, to insure a continuous flow of five second feet, situated at a point on the Bonito River whence the north quarter corner of Section 12, Township 10 South, Range 12 East, N. M. P. M., bears north 37° 28' west, 2,269 feet distant, to be used for railroad and domestic purposes, same to be used as above stated and can be changed only as provided by law, and further provided that the same may not be exercised to the detriment of any others having prior, valid and existing rights to the use of said waters.

IN WITNESS WHEREOF I have hereunto set my hand and official seal this 30th day of January, A. D., 1932.

Geo. M. Neel.
State Engineer.

IN THE DISTRICT COURT OF THE THIRD JUDICIAL DISTRICT

Appeal # 18 OF THE STATE OF NEW MEXICO, WITHIN AND FOR THE

COUNTY OF LINCOLN.

(4)

Recorded June 29, 1934, Book "P" Pages 169-209 District Court Records Lincoln County

EL PASO AND ROCK ISLAND RAILWAY COMPANY, a corporation, and SOUTHERN PACIFIC COMPANY, a corporation,

Plaintiffs,

vs.

THE BLOOM LAND AND CATTLE COMPANY, a corporation, et al.,

Defendants.

No. 3854

FINAL JUDGMENT

This cause coming on regularly to be heard in open court at Alamogordo, New Mexico, on this the 26th day of June, 1934, after due and timely notice of the time and place of hearing to all of the defendants herein excepting those defendants who are in default and those defendants whose whereabouts and Post Office addresses are unknown as appears from the record herein; and the plaintiffs having submitted the record herein, together with the pleadings, stipulations on file herein and the report of hydrographic survey made and filed in this case by the State Engineer of the State of New Mexico as a part of the record herein and having submitted their further evidence in support of the amended complaint herein, and the Court having duly considered the stipulation on behalf of the respective defendants who have entered into stipulations with the plaintiffs and being duly advised in the premises, and no request having been made by any party to this action for any findings or conclusions of law in addition to those hereinafter made, the court makes the following findings of fact and conclusions of law, to-wit:

383139

Findings With Reference to Service of Process, Appearances and Defaults.

The court finds that the following named and designated defendants have been duly sommoned herein by publication in the manner and form prescribed by statute, to-wit: Mrs. Walter Amacher, Juan Zamora, unknown heirs of Martha M. Long, deceased, unknown heirs of Margaret M. Long, deceased; unknown heirs of Ed. Nelson, deceased; unknown heirs of Jose Miranda, deceased; unknown heirs of Francisco Chavez, deceased; unknown heirs of Cresencio Salaz, deceased; unknown heirs of Octaviana Salaz, deceased; unknown heirs of Emma Peppin Chavez, deceased; unknown heirs of George Sena, deceased; unknown heirs of Mrs. George Carrillo de Sena, deceased; and all unknown claimants of interest to water in the Bonito River Stream System; and the court further finds that none of said defendants could be personally served within the jurisdiction of this court because the whereabouts of said defendants and each of them was unknown and that none of said defendants could be served by mail with a copy of the summons and complaint herein because the whereabouts and post office address of each of said defendants was unknown and could not be ascertained; and the court further finds that said publication was made in a duly qualified newspaper published in the English language and that at the time thereof there was no newspaper published in the Spanish language in Lincoln County, New Mexico, and that the said notice by publication was in all respects regular and in compliance with the statutes providing for notice by publication.

The court further finds that the clerk of this court having duly made and filed his certificate in writing herein showing the non-appearence of each of the said defendants who has been so served by publication, on the 19th day of May, 1932, the court made

and filed herein an order adjudging the aforesaid defendants to be in default herein, excepting the defendants Mrs. Walter Amacher and Juan Zamora.

The Court further finds that on the 8th day of October, 1932, the plaintiffs by leave of the court filed their amended complaint herein, which amended complaint added the names of certain additional defendants having or reputed to have interests or claims to water rights in the Bonito River Stream System and which additional defendants were added and substituted in lieu of persons named in the original complaint or originally described therein as unknown heirs or unknown claimants of interest; and that the said amended complaint stated the plaintiffs' cause of action with more particularity than in the original complaint and more particularly described the water rights claimed by the plaintiffs together with descriptions of lands for which the plaintiffs claim irrigation rights, and that the said amended complaint does not state a new or different cause of action from that stated in the original complaint filed herein.

The Court further finds that subsequent to the time of filing the said amended complaint certain other defendants not joined in said amended complaint and hereinafter named were substituted and added as defendants herein, in accordance with orders made by the Court, in lieu of defendants originally joined in this action who have died during the pendency of this action and that this action has been duly revived against the said substituted defendants by orders of the court herein; and that certain of the other defendants hereinafter named have been added and substituted herein by name in lieu of persons originally joined herein as unknown heirs or unknown claimants of interest, all of which duly appears from the record herein.

The court further finds that it was necessary to make a further publication herein because of the discovery of the names of certain defendants who were originally joined as defendants herein under the designation of unknown heirs of certain designated persons or as unknown claimants of interest, and also because of the substitution of certain other persons as defendants in the place of defendants originally joined and who have died since the commencement of this action; and that the following named and designated defendants herein have been duly summoned herein by a further publication in the manner and form prescribed by statute, to wit:

Unknown Heirs of Manuel Zamora, deceased, son of Francisco Zamora, Geronimo Zamora, Unknown heirs of Manuel Zamora, deceased, husband of Teolida Zamora, Unknown heirs of Teolida Zamora, deceased, Unknown heirs of Juan Apodaca, deceased, Unknown heirs of Juanita Apodaca, de Salazar, deceased, Unknown heirs of Telesfora Baca, deceased, Unknown heirs of Teodoro Gamboa, deceased, Unknown heirs of Isidoro Chavez, deceased, Unknown heirs of Victoriana Salazar de Peppin, deceased, Unknown heirs of Florencio Chaves, deceased, Unknown heirs of Refugio Romero, deceased, Unknown heirs of Eloisa Montoya, deceased, Unknown heirs of Pedro Salazar, deceased, Unknown heirs of Rosalia Salazar, deceased, Felipe Salazar, Catarina Salazar de Montoya, Ramona Salazar Alviso, Unknown heirs of Pablo Fresquez, deceased, Unknown heirs of Stephen Remond, deceased, Unknown heirs of Modesto Chavez, deceased, Unknown heirs of Martin Chavez, deceased, Unknown heirs of Francisca Chavez, deceased, Francisca Baldonado, Telesfora Baca, Ezequiel Vigil, Pauline Pacheco, Carmelita Ortiz, and the court further finds that none of said defendants could be personally served within the jurisdiction of this court because the whereabouts of said defendants and each of them was unknown and that none of said defendants could be served by mail with a copy of

the summons and complaint herein because the whereabouts and post office address of each of said defendants was unknown and could not be ascertained, and the court further finds that said publication was made in a duly qualified newspaper published in the English language and that at the time thereof there was no newspaper published in the Spanish language in Lincoln County, New Mexico, and that said notice by publication was in all respects regular and in compliance with the statutes providing for notice by publication.

The court finds that the clerk of this court having duly made and filed his certificate in writing herein showing the non-appearance of each of the defendants named in said further publication and hereinbefore stated and that said defendants, after due service upon them, have failed to appear or plead herein, the said defendants and each of them are in default.

The Court finds that prior to the time of filing the amended complaint herein, to-wit, October 8th, 1932, the following named defendants were duly and regularly summoned herein by the personal delivery to each of them within the State of New Mexico, by a person lawfully qualified to make such service, of a true copy of the original summons and complaint in this action, to-wit: Mileton Vigil, Gorgonio Wilson, Mrs. Jose Miranda, Emilio H. Miranda, the same person as E. H. Miranda, Elfego Griego, De Gracia Chavez, the same person as Mrs. De Gracia Chavez, Porfirio Chavez, Maria Vigil de Fresquez, Francisca Vigil de.Baca, Jose Baca, Lupita Baca, Teodoro Gamboa, Ladislado Salez, Francisco Gomez, Jose Salazar, Sosteno H. Torres, the same person as S. H. Torres, Francisco Zamora, Manuel Benavidez, Ygânio Salazar, Teofilo Salazar, Carrie Dow, Martha Benavidez, Daniel Salazar, Macario Vigil, Tonita Vigil de Montoya, Beatrice Vigil, the same person as Beatris Vigil, Venancio Vigil, misnamed in complaint as Venancia Vigil, Manuel Vigil, Earl L. Woods, Maidie Woods, the same person as Mary J. Woods, A. N. Runnels, Cecilia Vigil de Serna, Jennie Dow, Daniel Vigil, Cristobal Zamora,

Vidal Zamora, Alexandro Zamora, Geronimo Zamora, L. G. Abila, misnamed in the complaint as L. G. Abilo and who is the same person as Lucia Silva, Mary Pruitt, R. B. Pruitt, Lutario Fresquez, W. E. Kimbrell, William Sandfer, misnamed in the original complaint as William Sandfer, Maria Ortega, Eloisa Rodriquez, Crescencio Salaz, R. A. Casey, misnamed in the original complaint as R. E. Casey, Alfred L. Massey, H. A. Massie, the same person as H. A. Massey, Ed Nelson, John Nelson, Frank K. Purcella, Charles J. Page, Oney Remond, misnamed in the original complaint as Onie Bremond, Benjamin Chavez, Lillie C. Klasner, the same person as Lillie Classner, Jesusita Gonzales, Pete Gonzales, Santiago Gonzales, the same person as Jim Gonzales, and Jose Gonzales, all as shown by the return of summons and proof of service filed of record herein. The court further finds that each and all of the aforesaid defendants were served with a copy of the amended complaint herein during the year 1932, excepting the defendants Emilio H. Morenda and Jose Salazer, who later entered appearances herein and were duly served with copies of the said amended complaint; that the said defendant Lillie C. Klasner has entered a general appearance herein; that the defendants Jesusita Gonzales, Pete Gonzales, and Jose Gonzales have duly entered their general appearances herein, but that none of said defendants has filed an answer or other pleading to the amended complaint herein and are in default for their failure to plead thereto; and that the court has personal jurisdiction of each of said defendants.

The court finds that on the 24th day of April, 1933, the defendants Maria Chavez de Baca, Josefita Chavez de Santana and Juanita R de Chavez were duly summoned herein by the Sheriff of Santa Fe County, State of New Mexico, by the delivery to each of them at Santa Fe County, New Mexico, of a true copy of the alias summons together with a copy of the amended complaint herein, and that the court has personal jurisdiction of said defendants.

The court finds that prior to the 22nd day of January, 1934, the following named defendants were duly and regularly summoned

herein by the personal delivery to each of them, within the State of New Mexico, by a person duly qualified to make such service, of a true copy of alias summons and a copy of the amended complaint in this action, to-wit: Crucita Baca, Quirina Chavez, Porfirio Fresquez, P. R. Fuller, misnamed in the amended complaint as R. P. Fuller, Joseph Jaffa, Cista Lujan, Leopoldo Lujan, S. K. Massad, Josefita Montoya, Maria Ortega, Oney Ramond, Eustaquo Silva, Lucia Silva, same person as L. G. Abila, Albino Villareal, Amelio Zamora, Leandro Zamora, as shown by the return of Summons on file herein, and that the court has personal jurisdiction of each of said defendants.

The court further finds that prior to the 5th day of March, 1934, the following named defendants were duly and regularly summoned herein by the personal delivery to each of them within the State of New Mexico by a person duly qualified to make such service of a tru copy of alias summons and a copy of the amended complaint in this action, to wit: Alberto Salazar, Juan Salazar, Facundo Gallegos, Leonor Tarin, Ophelia Romero, Refugio C. Romero, Fego Montoya, Adenago Archuleta, Virginia Ramond; and that the defendant Miliana Otero, the same person as Emeliana Otero, was duly served with alias summons and copy of the amended complaint prior to the 19th day of March, 1934, as appears from proof of service and return of summons on file herein, and that the court has personal jurisdiction of each of said defendants.

The court finds that the defendants La Protectora Community Acequia, the same corporation as La Protectora Ditch, and La Fortuna Community Acequia, La Providencia Community Acequia, Cruz de la Jara Community Acequia, and the Lincoln Acequia Company have duly and regularly entered their appearances herein and admitted the service of summons and a copy of the complaint in this cause upon each of them, as shown by the acceptance of service made by each of said

defendants and duly filed herein, and that each of the said defendants has been duly served with a copy of the amended complaint herein, and that neither of said defendants has filed any answer to the amended complaint herein nor made claim to any water rights of the Bonito River Stream System.

The court finds that the defendants The Bloom Land and Cattle Company, The Titsworth Company and The First National Bank of Tucumcari, New Mexico, having been regularly served with summons herein, entered their appearances herein by their respective attorneys of record and filed answers to the amended complaint herein; and that each of the said defendants subsequently entered into a written compromise agreement and stipulation with plaintiffs, duly filed herein, providing under what terms and conditions a final judgment and decree could be entered and providing that if said decree was drawn and entered in accordance with said stipulations the said named companies would no longer defend against said suit; and the court further finds that the judgment and decree here and now rendered conforms in all respects to the stipulation so made.

The court finds that the defendants Albert Gonzales and Dora Gonzales de Chavez have duly entered their appearances herein by their attorney of record and that copy of the amended complaint herein was duly served on them about the month of October, 1932, and that the court has personal jurisdiction of said defendants.

The court further findsthat each defendant herein whose post office and mail address or whereabouts was known to plaintiffs or to plaintiffs' attorneys, or could be discovered, was duly served with a copy of the amended complaint herein.

The court further finds that the clerk of this court having duly certified that the defendants hereinafter named have failed to appear herein and plead to the plaintiffs' amended complaint and the plaintiffs having moved for an order of default against said defendants, and the said defendants being in default for their failu to plead to the plaintiffs' amended complaint, on the 5th day of

March, 1934, in open court at Carrizozo, New Mexico, the court made an order herein adjudging each of the following named defendants to be in default: Mrs. Walter Amacher, Dora Gonzales de Chavez, De Gracia Chaves, the same person as Mrs. De Gracia Chavez, Quirina Chaves, Albert Gonzales, Jose Gonzales, Pete Gonzales, Jesusita Gonzales, Mileton Vigil, Gorgonio Wilson, L. G. Abilo, Juanita R. de Chavez, Lillie Classner, Lillie C. Klasner, Benjamin Chavez, S. K. Massad, Mrs. Maria Ortega, Josefita Chavez de Santana, Eustaqui Silva, Lucia Silva, Albino Villareal.

The court further finds that the clerk of this court has filed his certificate herein showing that the defendant Leonor Tarlin, Cecilia Vigil de Serna and Luterio Fresquez, have failed to answer the plaintiffs' amended complaint herein and that each of said defendants is in default.

Abatement of Action Against Certain Defendants.

The court finds that certain of the defendants described in the following judgment as deceased persons are now deceased and that this action has abated against each of them.

Dismissals.

The court finds that the defendants Placido Baca, J. and P. Analla Ditch, a community ditch corporation, and Picacho Ditch, a community ditch corporation, have no interest in this action and that they may be dismissed.

Disclaimers.

The court further finds that each of the defendants Lupita Baca, Porfirio Chavez, Jr., Clara Dow, Jennie Dow, Charles Peppin, Edward Peppin, Henry Peppin, Celia Serrano, the same person as Cecilia Serrano, Miliana Otero, the same person as Emiliana Z. Otero, Charles J. Page, Pedro Pina, named in the complaint as Pedro Pena, Alexandro Zamora, the same person as A. Zamora, Francisco Zamora, and Manuel Zamora, entered his or her appearance herein and alleged that he or she does not have any right, title or interest in and to

the waters of the Bonito River Stream System and each filed a disclaimer of interest or title thereto.

The court further finds that each of the defendants Maria Chavez de Baca, the same person as Mrs. M. R. Baca, Modesto Chavez, Porfirio Fresquez, P. R. Fuller, misnamed in the amended complaint as R. P. Fuller, W. E. Kimbrell, A. L. Massey, the same person as A. L. Massie or Alfred L. Massie, H. A. Massey, Josefita Montoya, Ed. Nelson, the same person as E. W. Nelson, Johanna Nelson, John Nelson, Ted Nelson, the same person as A. T. Nelson, Frank Purcella, Eloisa Rodriquez, misnamed in the complaint as Eloisa Rodriguez, Cresencio Salaz, William Sandfer, the same person as W. J. Sandfer, duly entered his or her appearance herein and filed a written disclaimer of any right, title or interest in and to the waters of the Bonito River Stream System, excepting that said disclaimers do not include flood waters arising in said stream system from sources below the Fort Stanton Marine Hospital Reservation.

Appointment of Guardians Ad Litem

The court finds that the plaintiffs having filed their motion for the appointment of guardians ad litem for minor defendants herein, and it appearing that each of said minors has consented and requested the appointment of the guardian appointed on his or her behalf and that each of said minors has been duly and regularly summoned herein by personal service of process, the court heretofore on the 6th day of March, 1934, duly appointed Teofilo Salazar as the guardian ad litem for his children Alberto Salazar and Juan Salazar; Mrs. Roberto Romero as the guardian ad litem for her children Refugio C. Romero and OpheliaRomero; Mrs. Marta Benavides as guardian ad litem for Fego Montoya; Mrs. Clara B. Gallegos as guardian ad litem for her minor child Facundo Gallegos, misnamed Fecundo Gallegos; Elfego Griego as guardian ad litem for Adanago Archuleta; and Mrs. Oney Ramond as guardian ad litem for her minor child Virginia Ramond.

STIPULATIONS

That each of the defendant water-users who is named in the following judgment as a water-user taking water directly from the Bonito River, above the Hondo River, and for whom water rights are established in accordance with their respective ownerships or irrigated lands described in the said judgment, has entered his or her appearance herein and has entered into a written compromise agreement and stipulation with the plaintiffs, which is duly filed of record herein, providing as follows:

"(1) Plaintiffs admit that their rights to divert water from the Bonito River through their present reservoir and pipeline for railroad and domestic purposes are limited to a maximum of five (5) cubic feet per second, and that no more than that amount can be at any time removed out of the Bonito watershed under their existing rights."

"(2) Plaintiffs agree that judgment herein shall describe such rights as being for railroad and domestic purposes along the line of railroad of the El Paso and Rock Island Railway Company as said line of railroad existed in the year 1908".

"(3) Plaintiffs admit that they claim no present right to extend pipe line beyond Santa Rosa, New Mexico, to Tucumcari, New Mexico, over the line owned by the Rock Island and operated by the Southern Pacific Company."

"(4) It is stipulated that storage of water in the Bonito Reservoir, under present rights, is for beneficial uses, to-wit: railroad and domestic purposes, described in the permit of 1907 and subsequent permits relating thereto; and that plaintiffs claim no present right to store water in said reservoir for irrigation purposes on any lands located below the said reservoir."

"(5) In addition to the lands referred to and described in the railroad's original application of 1907, the irrigation of which has been permanently abandoned, the plaintiffs agree that judgment

shall provide for complete abandonment of irrigation of all irrigated lands owned by them above the Fort Stanton Marine Hospital Reservation."

"(6) In addition to the lands mentioned in the preceding paragraph, plaintiffs agree to select and abandon the irrigation of one hundred (100) acres of the lands below Fort Stanton Reservation shown by the State Engineer's Report as having been irrigated in 1931; it being the intention to abandon irrigation of the smaller and irregular tracts, especially when isolated on long ditches, and where soil, gravel and other physical conditions make more excessive water requirements thereon."

"(7) Plaintiffs agree to the policy of keeping the Bonito Reservoir filled to capacity at all times when possible, so that the snow melt run-off and flush flows will autometically pass over the spillway of the Bonito Dam; and further agree so far as possible to have said reservoir filled to capacity out of winter and early spring run-off to the full extent same may be available, so as to avoid interference as much as possible with the overflow of said reservoir during the growing season of the year, shown by the State Engineer's Report to begin about May; and the parties hereto agree that such plan is the most economical from the standpount of agricultural uses; and that such policy may be written into the Court's findings and judgment. Plaintiffs agree that the present capacity of the reservoir and height of the dam shall not be increased under existing rights, except in the manner authorized by law and upon due application to the State Engineer."

"(8) For the purposes of compromise only, plaintiffs accept as correct the acreage of irrigated lands located below the Fort Stanton Marine Hospital Reservation and irrigated directly from the Bonito River, as shown by the State Engineer's Report."

"(9) Plaintiffs and the undersigned defendant or defendants, agree that no irrigation shall be done in the hours of darkness, unless there shall be an attendant at hand at all times when necessary

to see that water so used is properly applied."

"(10) Upon the rendition of judgment substantially in accordance with this stipulation, plaintiffs agree to pay all costs of suit taxed by the Clerk of the Court, and in addition thereto to pay such part of the cost for the State Engineer's Hydrographic Survey as might otherwise be assessable against the defendant or defendants who are parties to this stipulation."

"(11) The undersigned defendant or defendants admit and agree that the plaintiffs are lawfully entitled to take into storage in the Bonito Reservoir, out of any quantities of water arising above the same, sufficient amounts of water to keep the same filled to the present capacity, at all times, and to remove therefrom as may be required for railroad and domestic purposes, and take out of the natural watershed, a maximum flow of water of five (5) cubic feet per second, and no more."

"(12) The undersigned defendants further admit the priority of present water rights of the United States for use at Fort Stanton Marine Hospital Reservation."

"(13) The acreage of irrigated lands below Fort Stanton Marine Hospital Reservation is admitted by defendants to be that shown in the State Engineer's Report."

"(14) The plaintiffs and defendant or defendants undersigned consent and agree that judgment herein may be rendered establishing in each and all of the defendants who are water users on the Bonito River, including defendant or defendants, parties to this stipulation, their respective water rights for agricultural and domestic uses according to the acreage owned by each of the defendants aforesaid, entitled to irrigation, as shown by the State Engineer's Report made by order of the court and filed herein, and for the plaintiffs for the total acreage of irrigated lands shown by said report for the year 1931, less one hundred (100) acres, for irrigation and domestic uses thereon; and all lands for which water rights are to be established for all parties who are water users on the

Bonito shall be described and set out in the judgment of the Court herein, and water rights shall be appurtenant to those lands; PROVIDED: That all of such lands under each irrigation ditch, whether community or private, shall be separately described, and the total quantity of water which shall be allowed for each ditch, and which shall be appurtenant to the separately described lands under each ditch, shall not exceed a total annual maximum amount calculated by allowing three and one-half (3½) acre feet per annum for each acre of irrigated land under such ditch, the distribution of water allowed for each such ditch to be subject to the rules of such community ditch or other ditch as may be agreed or provided by the several owners under such ditch."

"(15) It is agreed that it is not desirable to have and judgment shall not provide for a water master."

"(16) The priorities in rights and distribution of the waters of the Bonito River Stream System which have existed in the past between the respective water users as described in the plaintiffs' amended complaint herein and as reported and described in the State Engineer's Report shall not be changed but shall be continued in the same manner as heretofore and the judgment shall establish such rights as between the respective water-users of the Bonito River Stream System in accordance therewith.

"(17) It is agreed that the State Engineer's Report which has been made under order of the court herein and which has now been filed in this proceeding shall be introduced in evidence in support of the judgment to be made and entered herein."

"(18) It is further agreed that the court may make a provision in the final judgment herein to the effect that the Court shall retain jurisdiction of this cause for any further orders which may become necessary for administrative purposes or to enforce this decree."

The court further finds that each of the defendants who is a water user taking water directly from the Hondo River, to wit: The

Bloom Land and Cattle Company, a corporation, The Titsworth Company, a corporation, Lillie Casey, the same person as Lily Casey, R. A. Casey, Tinnie Raymond Clayton, Chon Fresquez, Dave Fresquez, Manuel Fresquez, Rumando Fresquez, Joseph Jaffa, Ellen E. Moore, Mary Pruitt, R. B. Pruitt, Jane Ramond, John Ramond, Oney Ramond, misnamed in the complaint as Oney Ramon, Virginia Ramond, has entered an appearance herein and has made and entered into a written compromise agreement and stipulation with the plaintiffs, said stipulation being duly filed of record herein, whereby each of the said defendants has agreed to judgment on the same terms, conditions, provisions and effect as those contained in the stipulations hereinbefore set forth and has consented to judgment in favor of the defendant water-users of the Bonito River Stream System in accordance with the said stipulations.

The court further finds that the stipulations aforesaid which were entered into by minor defendants were made by each of them and on his or her behalf by the respective guardians ad litem therefor, appointed by this court in this proceeding.

Title Changes During the Pendency of THIS Action

That during the pendency of this action certain water rights owned by the defendant L. H. Remey have been purchased by the plaintiff the El Paso and Rock Island Railway Company and that the said water rights are included in the one hundred acres on which irrigation is to be discontinued as hereinafter provided and that during the pendency of this action one A. T. Pfingsten of Lincoln County, New Mexico, has purchased and acquired certain tracts of land for which water rights are hereinafter established and adjudged, to-wit, a tract of land known as the Francisco Baldonado Tract, consisting of 0.75 acre lying under the La Provadencia Ditch and those certain tracts of land known as the Pfingsten Place and the G. Wilson Place consisting of 4.30 acres lying and being under the Lincoln Ditch.

Further Findings of Fact.

The court further finds that in accordance with the order of the court heretofore made herein a hydrographic survey of the Bonito River Stream System has been made by the State Engineer of the State of New Mexico and duly filed herein as a part of the record proper in this cause and that the same has also been offered and received in evidence herein on behalf of the plaintiffs; that the said State Engineer's Report is prima facie evidence of the facts and matters therein shown and that for the purposes of this action and to support default judgments herein the same is true except as hereinafter expressly stated, and the court finds that the allegations of the plaintiffs' amended complaint herein are sustained by the record herein, the said State Engineer's Report, the admissions and stipulations of the respective parties filed herein, and the proof and evidence duly submitted to and heard by the court herein, and the court finds that the facts in evidence sustain the final judgment given and rendered herein.

The court further finds that in several particulars the said State Engineer's Report, filed herein, incorrectly indicates the ownership of the irrigated lands for which water rights are hereby established, and on the basis of the evidence duly submitted to the court herein, the court has correctly indicated by the judgment herein the owners or claimants of the several tracts of land for which water rights are hereby established and that the acreage of the several tracts of irrigated lands for which water rights are hereby established is in accordance with and not less than the areas of lands shown by the said State Engineer's Report to be irrigated lands, except as to one hundred acres of land of the plaintiffs on which irrigation is to be discontinued as hereinafter provided; and the court also finds that the lands owned or claimed by the First National Bank of Tucumcari, New Mexico, for which water rights are hereby established, are entitled to be irrigated.

Conclusions of Law.

The court makes the following conclusions of law:

That the court has jurisdiction of the persons of each of the defendants who has been personally served with summons in this action within the State of New Mexico and of each of those defendants who has entered appearance herein, as shown by the foregoing findings of fact, and that this court has exclusive jurisdiction of the subject matter of this action.

That the original complaint herein states a cause of action in equity on behalf of the plaintiffs to establish their water rights as against the unlawful adverse claims of the defendants against them and to restrain and enjoin the defendants and each of them from interference with the plaintiffs' rights and that the said original complaint also conteins all of the allegations required by statute to state a cause of action for a stream adjudication suit, and that by virtue of the statute in such cases made and provided this action became and is a stream adjudication suit for the adjudication of all of the water rights of the Bonito River Stream System, and that the amended complaint herein, which named additional defendants, omitted certain defendants named in the original complaint, not material to this action, and made a more prticular statement of plaintiffs' cause of action, did not change the original cause of action nor state any new cause of action nor broaded the issues of the action.

The court finds that the plaintiffs and the several defendants described in the amended complaint herein as corporations are corporations with capacity to sue and be sued.

That the persons added and substituted as defendants herein since the time of filing of the amended complaint are lawfully joined and made defendants in this action upon the allegations of the amended complaint and traverse thereof.

That this action has been revived against those persons who have been substituted as defendants in lieu of defendants originally joined herein and who are now deceased.

That the stipulations aforesaid which were made by minor defendants by their guardians ad litem do not surrender any legal rights which the said minor defendants respectively have and preserve for such defendants such legal rights as they may have in the premises and that said stipulations were made in the interest of said minors, and the court hereby expressly approves the stipulations made respectively by the said guardians.

The court concludes that the allegations of the amended complaint are fully sustained by the proof herein and that the plaintiffs are entitled to have established in and for them the water rights for railroad, domestic and irrigation purposes which are hereinafter adjudged, to be their lawful rights in and to the waters of the Bonito River Stream System, and that the defendants hereinafter named are entitled to have adjudged to them the water rights hereinafter established respectively for the said defendants.

That the plaintiffs are entitled to default judgment against each of the defendants who has been served by process in this action and who is in default as shown by the foregoing findings.

That the plaintiffs and the defendants on whose behalf water rights are established are entitled to an injunction against the unlawful interference with the rights herein established respectively.

The court further finds that the judgment here and now rendered conforms in all respects to the stipulations between the plaintiffs and the several defendants, which have been submitted to the court and are duly on file herein.

Judgment

Upon the foregoing findings of fact and conclusions of law and the court being fully advised in the premises, the court makes the following judgment and decree:

IT IS BY THE COURT ORDERED AND ADJUDGED That the amended complaint is and shall be amended further by the addition of the names, descriptions and designations of the persons who have been added and substituted as defendants herein and of all persons who have entered appearances herein and who have entered into stipulations with the plaintiffs concerning water rights claimed by them as shown by stipulations duly filed herein and the said amended complaint shall be considered as amended so as to state a cause of action against them for a stream adjudication and otherwise as an action on behalf of the plaintiffs to the same effect as though the said defendants had been originally included within the allegations of the said amended complaint.

IT IS ORDERED AND ADJUDGED that this action has abated, by reason of death, against the following defendants, to-wit, J. Archelati, Florencio Chavez, Martin Chavez, Modesto Chavez, Teodoro Gamboa, Pablo Fresquez, Eloisa Montoya, Refugio Romero, Pedro Salazar, Rosalia Salazar, Manuel Zamora, son of Francisco Zamora, Manuel Zamora, husband of Teolida Zamora, Teolida Samora, and this action is dismissed against them.

IT IS ORDERED AND ADJUDGED, on the motion of the plaintiffs, on the ground that they have no interest in this action, that the defendants Placido Baca, J. and P. Analla Ditch, and Picacho Ditch, are hereby dismissed.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants La Providencia Community Acequia, La Protectora Ditch, La Fortuna Community Acequia, and Cruz de la Jara Community Acequia, community ditch corporations, hve no right, title or interest in and to waters of the Bonito River Stream System.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendants Lupita Baca, Porfirio Chaves, Jr., Clara Dow, Jennie Dow, Charles Peppin, Edward Peppin, Henry Peppin, Celia Serrano, the same person as Cecilia Serrano, Miliana Otero, the same p rson as Emeliana Z. Otero, E. H. Ramey, Charles J. Page, Pedro Pina, named in the complaint as Pedro Pema. Alexandro Zamora, the same person as A. Zamora, Francisco Zamora, Manuel Zamora, and each of them, have no right, title, or interest whatsoever in and to the waters of the Bonito River Stream System.

IT IS, BY THE COURT, ORDERED, ADJUDGED AND DECREED:

That the defendants heretofore adjudged to be in default herein continue to be and are now in default herein and in addition thereto the following defendants are in default herein, to-wit: Unknown heirs of Manuel Zamora, deceased, son of Francisco Zamora, Geronimo Zamora, Unknown heirs of Manuel Zamora, deceased, husband of Teolida Zamora, Unknown heirs of Teolida Zamora, deceased, Unknown heirs of Juan Apodaca, deceased, Unknown heirs of Juanita Aodaca de Salazar, deceased, Unknown heirs of Telesfora Baca, deceased, Unknown heirs of Teodoro Gamboa, deceased, Unknown heirs of Isidoro Chavez, deceased, Unknown heirs of Victoriana Salazar de Peppin, deceased, Unknown heirs of Florencio Chavez, deceased, Unknown heirs of Refugio Romero, deceased, Unknown heirs of Eloisa Montoya, deceased, Unknown heirs of Pedro Salazar, deceased, Felipe Salazar, Caterina Salazar de Montoya, Romana Salazar Alviso, Unknown heirs of Pablo Fresquez, deceased, Unknown heirs of Rosalia Salazar, deceased, Unknown heirs of Modesto Chavez, deceased, Unknown heirs of Stephen Ramond, deceased, Unknown heirs of Martin Chavez, deceased, Unknown heirs of Francisca Chavez, deceased, Francisca Baldonado, Telesfpra Baca, Ezequiel Vigil, Pauline Pacheco, Carmelita Ortiz, Cecilia Vigil de Serna, Leonor Tarin, Lutherio Fresquez, and judgment by default and pro confesso is hereby rendered against each and all of said defaulting defendants, and they and each of them are adjudged to have no right, title or interest in

and to the waters of the Bonito River Stream System adverse in anywise to the title, estate and rights of the plaintiffs hereinafter declared and established, and to have no right, title or interest whatsoever in and to the waters of the Bonito River Stream System excepting the rights of those defendants hereinafter expressly named who may have or claim some right, title or interest in and to the real estate for which water rights are hereinafter established and adjudged.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED: That the plaintiff the El Paso and Rock Island Railway Company is the owner and the plaintiff the Southern Pacific Company is the lessee of water rights in the Bonito River Stream System consisting of the right to take into storage in the Bonito Reservoir, a reservoir on said stream owned by the plaintiff the El Paso & Rock Island Railway Company, out of any quantities of water arising above the said reservoir, sufficient amounts of water to keep th same filled to the present capacity of the said reservoir, at all times, and to remove therefrom as may be required for railroad and domestic purposes, and to take out of the natural watershed of the Bonito River Steeam System, a maximum flow of five (5) cubic feet per second, and no more; that the said rights are for railroad and domestic purposes and uses along the line of railroad of the El Paso and Rock Island Railway Company as said line of Railroad existed in the year 1908) and that the existing rights of the said plaintiffs do not permit the extension of any pipe line for distribution of their water supply to any point east of Santa Rosa, New Mexico; and it is especially provided that the plaintiffs and their successpr pr successors shall pursue the policy of keeping the Bonito Reservoir filled to capacity at all times when possible, so that the snow melt run-off and flush flows will automatically pass over the spillway of the Bonito Dam; and they shall so far as possible have said reservoir filled to capacity out of winter and early spring run-off to the full extent same may be available, so as to avoid interference as much as possible with the overflow of said reservoir during the growing season of the year, shown by the State

Engineer's Report to begin about May, and so as to make the most economical use of the water supply of said stream from the standpoint of agricultural uses; and it is provided that plaintiffs shall not increase the present capacity of the Bonito Reservoir and height of the dam except in the manner authorized by law and upon due application to the State Engineer; and that the said rights of the said plaintiffs are and shall be prior and superior to the rights hereinafter established and adjudged for the defendants herein.

IT IS FURTHER ORDERED That the plaintiffs shall at all times maintain a suitable and sufficient device or appliances for measuring with practicable engineering accuracy into their pipe line or pipe lines the total quantity of water which the plaintiffs are entitled to take from the said reservoir for their railroad and domestic purposes and that the State Engineer or any qualified representative of any defendant water user shall have the right at all reasonable times to inspect the said device or appliances for measuring the same.

IT IS FURTHER ORDERED AND ADJUDGED That in addition to the lands referred to and described in the original application of 1907 by the plaintiff El Paso and Rock Island Railway Company, shown in the amended complaint, the irrigation of which has been permanently abandoned, and as an additional offset to the plaintiffs' storage rights for railroad and domestic purposes aforesaid, the plaintiffs shall permanently discontinue the irrigation of any and all lands owned by them along the Bonito River above the Fort Stanton Marine Hospital Reservation, and in addition thereto, and as a further offset to such storage rights so established and adjudged for the plaintiffs, the plaintiffs shall further discontinue the irrigation of the following described lands consisting of one hundred (100) acres, and no water rights are hereby established and adjudged therefor, to-wit:

91.63 acres of land forming one continuous tract, lying between La Protectora Ditch and the Bonito River of varying width, approximately one and one-half (1½) miles long, heretofore entitled to be irrigated

from La Protectora Ditch, and situated in the Southwest Quarter of Section 20; the East Half of the Northwest Quarter and the Northeast and Southeast Quarters of Section 29; and the Southwest Quarter of Section 28; all in Twp., 9 S, R-16-E, N. M. P. M., and

8.37 acres, more or less, being that part of the Dotson (or Barber) Tract between the Lincoln Ditch and the Public Road, which is entitled to irrigation, situated in the South Half of the Northeast Quarter, and the North Half of the Southeast Quarter of the Northwest Quarter of Section 33, Twp. 9-S, R-16-E, N.M.P.M., all lying and being in Lincoln County, New Mexico.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED That the respective owners of the lands hereinafter designated and described and which lie along the Bonito River and within the County of Lincoln, State of New Mexico, are and shall be entitled to water rights for the irrigation of said lands and for domestic purposes in connection therewith to the extent that water from the said Bonito River Stream System is available therefor and in accordance with the method of distribution and priorities in right of use as between the water-users of the said stream system as hereinafter described and provided and as otherwise hereinafter provided, to-wit:

That the lands owned by the plaintiff the El Paso and Rock Island Railway Company and leased by the plaintiff Southern Pacific Company for which such water rights are and shall be established are described as follows, to-wit:

Lands receiving water through the Lutz Ditch, consisting of 25.02 acres, as follows, to-wit:

Beginning at the southeast corner of tract of land formerly owned by M. Zamora, which corner is on t he north line of the south half of Section 15, Twp. 9-S, R-15-E, N.M.P.M., whence the 1/4 corner on the west line of said Section 12 W, 1903.3 feet distant, Run thence N-2 degrees 00' E, along the east line of said Zamora tract to the south bank of Salado Creek; thence following the bank of said creek, to

the west line of a tract of land owned by Fred Pfingsten; thence south along said line to the south line of the north half of said Section 15; thence east along the south line of the north half of Section 15, to the south bank of Salado creek; thence following south bank of said creek in a southeasterly direction 240 feet; thence S-17 degrees 00'-E, to the north bank of the Bonito River; thence following the north bank of the Bonito River in a southwesterly direction 255 feet; thence S-69 degrees 00'-W, 395 feet; thence N-30 degrees 30'-W, 130 feet; thence S-86 degrees 30'-W, 260 feet; thence S-58 degrees 30' W, 275 feet; thence N-26 degrees 30'-W, 25 feet; thence S-62 degrees 15'-W, 155 feet; thence S-15 degrees 30'-E, 100 feet; thence S-71 degrees 45'-W, 252 feet; thence N-51 degrees 00'-W, 295 feet; thence N-30 degrees 45'-E to the Lutz ditch; thence following the meanderings of the Lutz ditch to the south line of the north half of Section 15; thence along said line, which is the south boundary of the M. Zamora lands, in an easterly direction to the place of beginning, lying and being in Section 15, Twp. 9-S, R-15-E, N. M. P. M., and containing 25.02 acres of land irrigated by the Lutz ditch.

Lands receiving water through the Government Springs Ditch, consisting of 33.85 acres, as follows, to-wit:

Begin at a ppint on the Government Springs ditch whence the 1/4 corner on the West line of Sec. 15, Twp. 9-S, R-15-E, N.M.P.M. bears N-83 degrees 00'-W; thence N-9 degrees 30'-W to the South Bank of the Bonito River; thence following the meanderings of said river bank downstream to a point distant 120 ft. from the last above named point; thence S-45 degrees 00'-E, 75 ft; to the west line of a tract of land on the Government Springs ditch; owned by S. H. Torres, thence following said ditch upstream to the place of beginning, containing 0.15 irrigated acre: all lying and being in the NW 1/4 of the SE 1/4 of Section 15, Twp. 9-S, R-15-E., N. M. P. M. and irrigated by the Government Springs Ditch.

From the NE corner of a tract of land owned by S. H. Torres, on the

east line of Section 15, Twp. 9-S, R-15-E, N.M.P.M. which is the accepted quarter corner and whence the 1/4 corner on the west line of said Section is 5252.5 feet distant, run west along the North line of the SE 1/4 of said Sec. 15, 300 feet; to the place of beginning: Run thence S-1 degree 00'-W, to the Government Springs ditch; thence following the meanderings of said ditch in a westerly direction to the east line of the tract of land formerly owned by M. Zamora; distant 655 feet from the last above named point; thence N-3 degrees 15'-E, to the north line of the south half of said Section 15, thence west along the north line of the S 1/2 of Sec. 15 to its intersection with the Upper Providencia ditch; thence in an easterly direction, following the meanderings of the Upper Providencia ditch, to the point where that ditch joins with the flume across the Bonito River; thence S-68 degrees 00'-E, 100 feet; thence S-39 degrees 15'-E, to the north line of the S. H. Torres tract on the north line of the S 1/2 of Sec. 15, thence following said line in a westerly direction to the place of beginning. Also an irregularly shaped parcel of land adjoining the above tract on the north containing 0.55 acre lying between the Upper Providencia ditch and the Bonito River: All lying and being in Sec. 15, Twp 9-S, R-15-E, N. M. P. M., and containing 12.83 acres of land irrigated by the Government Springs ditch.

From the NE corner of a tract of land belonging to S. H. Torres, which is the accepted 1/4 section corner on the east line of section 15, Twp. 9-S, R-15-E, N.M.P.M., whence the 1/4 section corner on the west line of said section is W-5252.5 feet distant, run N-76 degrees 40'-E, 1518 feet to a point on the Government Springs ditch, for a place of beginning. Run thence N-31 degrees 30'-W, to the south bank of the Bonito River; thence N-60 degrees 45'-E, 170 feet; thence S-87 degrees 30'-E, 404 feet; thence N-1 degree 30'-W, 156 feet; thence N-67 degrees 00'-E, 308 feet; thence N-85 degrees 0'-E, 223 feet; thence S-81 degrees 0'-E, 177 feet; thence N-71 degrees 30'-E, 328 feet; thence S-78 degrees 0'-E, 121 feet; thence N-65 degrees 00'-E, 253 feet; thence S-49 degrees 30'-E, 453 feet; thence S-7 degrees 0'-E to the Government

Springs ditch; thence in a westerly direction, with the meanderings of said ditch, to the place of beginning, containing 20.87 acres of land irrigated by the Government Springs ditch, and situated in the S 1/2 of the N-1/2 of Section 14, Twp. 9-S, R-15-E, N.M.P.M.

Lands receiving water through the Upper Providencia (Nicanora) Ditch, consisting of 16.99 acres, as follows, to-wit:

From the NE corner of a tract of land owned by S. H. Torres, which is the accepted 1/4 section corner on the east line of Section 15, Twp. 9-S, R-15-E, N.M.P.M., whence the 1/4 corner of the west line of said Section is 5252.5 feet distant, run N-7 degrees 00'-W to a point on the Upper Providencia ditch, for a place of beginning. Run thence in an easterly direction, following the meanderings of the Upper Providencia ditch to a point on said ditch 3442 ft. distant from the place of beginning; thence S-2 degrees 30'-E, to the north bank of the Bonito River; thence following said bank of the river in a Westerly direction to a point 915 feet distant from the last mentioned point; thence S-69 degrees 00'-W, 335 ft; thence S-55 degrees 30'-W, 255 feet; thence S-84 degrees 00'-W, 110 ft; thence N-11 degrees 30'-W, to a point on the Upper Providencia ditch; thence following the meanderings of said ditch to a point 293 feet distant from the last above mentioned point; thence S-5 degrees 45'-E, to the north bank of the Bonito River; thence S-82 degrees 00'-W, 176 feet; thence S-32 degrees 00'-W, 224 feet; thence S-81 degrees 30'-W, 830 feet; thence S-31 degrees 30'-W, 188 feet; thence N-82 degrees 00'-W, 112 feet; thence N-55 degrees 45'-W, 204 ft; thence N-7 degrees 30'-W to the place of beginning, except 0.85 acre lying along the lower side of the Upper Providencia ditch, containing 16.99 acres of land, irrigated by the Upper Providencia ditch, all lying and being in S 1/2 of the N 1/2 of Section 14, Twp. 9-S, R-15-E, N. M. P. M.

Lands receiving water through the Cruz de Jara Ditch, consisting of 15.01 acres, as follows, to wit:

Begin at a point where the east line of the W 1/2 of the SW 1/4 of Section 13, Twp. 9-S, R-15-E, N.M.P.M., which is also the west line of a parcel of land owned by T. Salazar, crosses the Cruz de Jara ditch. Run thence in a westerly direction following the meanderings of said ditch, to a point 683 feet distant from the last above named point; thence S-0 degrees 30'-W, 68 ft; thence N-66 degrees 45'-W, 160 feet; thence S-19 degrees 00'-W, 57 feet; thence S-51 degrees 00'-E, 71 ft; thence S-81 degrees 30'-E, ;25 ft; thence S-0 degrees 30'-W, 45 ft; thence S-56 degrees 00'-E, 188 ft; thence S-68 degrees 50'-E, 280 ft; thence N-79 degrees 30'-E, 200 ft; thence N-48 degrees 30'-E, to the said east line of the W 1/2 of the NW 1/4 of the SW 1/4; thence north, along said lines to the place of beginning, containing 4.91 acres of land irrigeted by the Cruz de Jara ditch and situated in the W 1/2 of the SW 1/4 of the NW 1/4 and W 1/2 of the NW 1/4 of the SW 1/4 of Section 13, and SE 1/4 of the NE 1/4 of Section 14 Twp. 9-S, R-15-E, N. M. P. M.

From the NE corner of the S 1/2 of the SE 1/4 of Section 13, Twp. 9-S, R-15-E, N. M. P. M., run S-89 degrees 45'-W, 2763.48 feet to the west line of a tract of land owned by G. Sena on the north bank of the Rio Bonito for the place of beginning. Run thence N-6 degrees 56'-E to the Cruz de Jara ditch; thence in a northwesterly direction, following the meanderings of the Cruz de Jara ditch 428 ft. to the west boundary of a tract of land owned by Manuel Benavides; thence S-6 degrees 17'-W to the north bank of the Bonito River; thence in a southeasterly direction, following the north bank of said river to the place of beginning, containing 4.90 acres of land irrigeted by the Cruz de Jara ditch, situated in N 1/2 of the S 1/2 of Section 13, Twp. 9-S, R-15-E, N. M. P. M.

From the SE corner of Section 13, Twp. 9-S, R-15-E, N.M.P.M., run N-74 degrees 30'-W, 738 feet to a point on the north bank of the Bonito River, for the place of beginning. Run thence N-7 degrees 00'-W, 40 feet; thence N-25 degrees 30'-W, 142 feet; thence N-53 degrees 00'-W, 389 feet; thence N-53 degrees 10'-W, 376 feet; thence S-35 degrees

45'-W to the north bank of the Bonito River; thence following the north bank of the Bonito River in a southeasterly direction to the place of beginning, containing 3.39 acres of land irrigated by the Cruz de Jara ditch; situated in the S. 1/2 of the S.E. 1/4 of Section 13, Twp. 9-S, R-15-E, N. M. P. M.

From the SE corner of Section 13, Twp. 9-S, R-15-E, N.M.P.M. run N-40 degrees 00'-W to a point on the Cruz de Jara ditch for the place of beginning. Run thence S-41 degrees 00'-W, 97 feet; thence N-57 degrees 10'-W 90 ft; thence N-27 degrees 30'-E, to the Cruz de Jara ditch; thence in a southeasterly direction, following the meandering of the Cruz de Jara ditch, to the place of beginning, containing 0.19 acre of land irrigated by the Cruz de Jara ditch, situated in the SE 1/4 of the SE 1/4 of Section 13, Twp. 9-S, R-15-E, N.M.P.M. Also a tract of 1.62 acres, lying in the southeast corner of Section 13, and the Northeast corner of Section 24, both in Twp. 9-S, R-15-E; and in the southwest corner of Section 18, Twp. 9-S, R-16-E, N.M.P.M.

Lands receiving water through the Sedillo Ditch, consisting of 48.05 acres, as follows, to wit:

From the 1/4 section corner on the South line of Sec. 13, Twp. 9-S, R-15-E, N.M.P.M. run thence S-89° 00' W, 170 feet to a point on the west line of the property formerly owned by Wm. Sevier; thence N-40° 0'-E along said line to a point on the Sedillo ditch, for the place of beginning. Run thence along said line N-40°00'-E to the Providencia ditch, thence following the meanderings of the Providencia ditch in a southeasterly direction to a point 750 ft. distant from the last above named point, thence S-74°50'-W, 250 feet; thence N-55°-00'-W, 98 feet; thence N-24°30'-W, 90 feet to the east line of the tract of land formerly owned by Wm. Sevier; thence S-56°00'-W along said line to the Sedillo ditch; thence in a northwesterly direction following the meandering of the Sedillo ditch to the place of beginning, containing 6.65 acres of land, irrigated by the Sedillo ditch, and situated in the S.W. 1/4 of the S.E. 1/4 of Section 13, Twp. 9-S, R-15-E, N.M.P.M.

30.87 acres in the south half of the northeast quarter, and the north half of the southeast quarter, of the northeast quarter of Section 24, Twp. 9-S, R-15-E; and in the southwest corner of the northwest quarter, and the west half of the southwest quarter of the northwest quarter of Section 19, Twp. 9-S, R-16-E, N.M.P.M.

8.08 and 2.45 acres in the southwest quarter of the northwest quarter of Section 19, Twp. 9-S, R-16-E, N. M. P. M.

Lands receiving water through the Providencia Ditch, consisting of 109.30 acres, as follows, to wit:

From a point on the west line of a tract of land owned by G. Sena, where said line is intersected by the North line of the S. 1/2 of the S. 1/2 of Section 13, Twp. 9-S, R-15-E, N.M.P.M., at a distance of 2600 feet from the east line of said section, run S-13°15'-E, 234 ft. to a point on the Providencia ditch for the place of beginning. Run N-22°00'-E, to the south bank of the Bonito River; thence following said bank of the Bonito River in a northwesterly direction 274 feet; thence due south to the Providencia ditch; thence in a southeasterly direction, following the meandering of said ditch, to the place of beginning, being a tract of orchard containing 0.47 acre irrigated by the Providenci ditch and situated in the S. 1/2 of the S. 1/2 of Section 13, Twp. 9-S, R-15-E, N. M. P. M.

From a point on the West line of a tract of land formerly owned by Wm. Sevier, whence the 1/4 corner of the south side of Section 13, Twp. 9-S, R-15-E, N.M.P.M. bears N-89°00'-E, 170 feet; run thence along said west line of Wm. Sevier tract, N-40°00'-E, to the Providencia ditch, the place of beginning. Run thence in a southeasterly direction following the meandering of the Providencia ditch to a point 750 feet distant from the last above named point; thence N-57°-00'-E, 218 feet; thence N-15°40'-W to the south bank of the Bonito River; thence in a northwesterly direction, following same river bank to a point whence the place of beginning bears S-40°00'-W; thence S-40°00'-W, to the place of beginning, containing 3.29 acres of land, irrigated by the Providencia ditch and situated in the S.W. 1/4 of the S.E. 1/4 of Sec. 13, Twp. 9-S, R-15-E, N.M.P. M.

Begin at a point on the south bank of the Bonito River; whence the SE corner of Section 13, Twp. 9-S, R-15-E, bears S-87° 00'-E, 870 ft. distant. Run thence S-17°15'-W, 120 feet; thence S-74°00'-W, 135 ft; thence N-64°15'-W, 98 ft; thence N-27°00'-W, 163 ft; thence N-24°45'- to the south bank of the Bonito River; thence following the meandering of the south bank of the Bonito River in a southeasterly direction to the place of beginning, containing 1.20 acres of land, irrigated by the Providencia ditch, and situated in the S. 1/2 of the S.E. 1/4 of Section 13, and the N.E. 1/4 of the N.E. 1/4 of Section 24, Twp. 9-S, R-15-E of the N. M. P. M.

From the 1/4 corner of the west line of Section 19, Twp. 9-S, R-16-E, N.M.P.M. run N-18°10'-E to the Providencia ditch for the place of beginning; run thence N-31°45'-E to the south bank of the Bonito River; thence in a southeasterly direction following the meandering of said river bank to a point whence the NW corner of a tract of land owned by P. Baca bears S-17°45'-E, thence S-43°00'-W, 100 ft; thence S-64°30'-E, 155 feet; thence in a southerly direction to said Baca corner; thence S-31°20'-W, 242.5 feet; thence N-53°30'-W, 70 feet; thence S-34°30'-W to the NW corner of a tract of land owned by Teodoro Gamboa; thence S-34°30'-W along the west line of said tract ofland owned by Teodoro Gamboa to the south fork of the Providencia ditch; thence following the meandering of the south fork of the Providencia ditch and the main Providencia ditch in a northwesterly direction to the place of beginning. There is excepted from the above as unirrigated, an irregularly shaped tract of land, lying along a field lateral of the Providencia ditch, containing 4.73 acres, the southwest corner of which bears N-33°30'-E, 1350 feet distant from the 1/4 corner of the west line of Section 19; also a tract of land containing 0.44 acre of unirrigated land, being the yard of a residence, the SE corner of said yard being at a point on the Providencia ditch whence the said 1/4 corner of Section 19 bears S-66°00'-W, 1080 feet distant; also a tract of land of 0.40 acre, unirrigated, located as follows: Beginning at a point on the north fork of the Providencia ditch, whence the 1/4 corner on the

west line of Section 19 bears S-72°15'-W, 1095 ft. distent; run thence N-47°30'-E, 190 ft; thence S-82°00'-E, 40 ft; thence S-13°45'-W to said ditch; thence in a northwesterly direction, following the meandering of said ditch, to place of beginning; also there is excepted from the above a tract of 0.30 acre on the Francisco Baldonado place. The above described tract contains 21.23 acres of land irrigated by the Providencia ditch, and is situated in the N.W. 1/4 and the N. 1/2 of the S.W. 1/4 of Section 19, Twp. 9-S, R-16-E, N.M.P.M.

0.15, 0.68, 2.18 and 0.90 acres in the southeast quarter of the northwest quarter, and the north half of the southwest quarter of Section 19, Twp. 9-S, R-16-E.

5.33 acres in the southeast quarter of the northwest quarter, the northeast quarter of the southwest quarter, and the northwest quarter of the southeast quarter, of Section 19, Twp. 9-S, R-16-E.

2.78, 1.88, 0.45, 1.13, 3.98, 0.70, 0.60, 0.12, 0.60,0.50 and 0.90 acres, comprising one tract of 12.49 acres in the west half of the southeast quarter of Section 19, Twp. 9-S, R-16-E.

From the corner common to Sections 19, 20, 29 and 30, Twp. 9-S, R-16-E, N.M.P.M., run N-0°30'-W to the Lincoln ditch for the place of beginning. Run thence in a westerly direction, following the meandering of said ditch to a point on said ditch, 100 feet in an easterly direction from the south end of the Lincoln diversion dam; thence S-30°50'-E, 378 ft; thence S-53°20'-W, 96 feet; thence N-36°20'-258 feet, thence N-65°30'-W, 182 feet to the east line of a tract of land owned by E. Griego, thence along said east line to the Providencia ditch; thence in a southeasterly direction following the meanderings of the Providencia ditch, to the north side of the Lincoln-Tapitan road; thence S-87°00'-E, 425 feet; thence S-66°40'-E, 340 feet; thence S-30°00'-E, 159 feet; thence N-17°00'-E, 465 feet, thence S-80°00'-E, 232 feet; thence North to the place of beginning, containing 14.84 acres of land irrigated by the Providencia ditch and situated in the S. 1/2 of the S.E. 1/4 of Section 19, Twp. 9-S, R-16-E, N.M.P.M.

From a point on the Providencia ditch, whence the corner common to Sections 19, 20, 29 and 30, Twp. 9-S, R-16-E, N.M.P.M., bears

S-47°00'-W, 750 feet distant, run north 96 feet; thence N-53°00'-E, 148 feet; thence N-77°30'-E to the Lincoln ditch, thence in a southeasterly direction with the meanderings of the Lincoln ditch to a point on said ditch, whence the above mentioned section corner bears S-63°00'-West, thence S-55°00'-W to the Providencia ditch; thence following the meanderings of said ditch in a northwesterly direction to the place of beginning, containing 3.00 acres of land irrigated from the Providencia ditch, and situated in the S.W. 1/4 of the S.W. 1/4 of Section 20, Twp. 9-S, R-16-E, N. M. P. M.

From a corner on the west side of a tract of land belonging to Jose Miranda, whence the corner common to Sections 19, 20, 29 and 30 bears N-74°45'-W, 557.5 feet distant, run S-16°30'-W, 100 feet along the Miranda line to the southwest corner of said Miranda tract, thence S-89°00'-E, along the south line of said tract 62 feet to the place of beginning. Run thence S-17&30'-E, 80 ft; thence S-43°00'-E, 920 feet; thence N-84°15'-W, 246 feet; thence S-20°30'-E, 195 feet, thence S-63°30'-E, 242 feet, thence S-37°30'-W to the Providencia ditch, thence in a southeasterly direction, following the meandering of the Providencia ditch and a north branch thereof, to a point whence the above mentioned section corner bears N-46°00'-W; thence S-65°15'-E to the Lincoln ditch at the north line of a tract of land belonging to the Salaz Estate; thence in a northerly direction following the meandering of the Lincoln ditch to a point whence the above mentioned section corner bears N-63°00'-W; thence S-39°50'-W 120 feet; thence N-42°00'-W, 108 feet; thence N-56°30'-W, 265 feet; thence N-30°30'-W, 102 feet, thence N-27°00'-E, 54 feet; thence N-81°00'-E, 166 feet, thence S-67°15'-E, 272 feet; thence N-19°15'-E, to the Lincoln ditch; thence in a northwesterly direction, following the meandering of the Lincoln ditch, 726 feet; thence S-89°30'-W, 137 ft; thence N-60°50'-W, 391 ft; thence N-12°30'-W, to the Lincoln ditch; thence following the meandering of the Lincoln ditch, in a northwesterly direction 64 feet; thence N-76°00'-W, 111 ft; thence S-66°30'-W, 98 ft; thence S-21°00'-W, 198 ft; thence S-3°45'-E to the south line of Section 20; thence west

along said section line to the east line of the Miranda tract above mentioned, distant 750 feet from the southwest corner of said Section 20; thence S-16°50'-W, 207.5 feet; thence S-87°10'-W to the place of beginning, irrigated by the Providencia ditch and situated in the S. 1/2 of the S.W. 1/4 of Section 20, and the N.W. 1/4 of Section 29, Twp. 9-S, R-16-E, N. M. P. M., containing 39.54 acres.

Lands receiving water through the La Protectora Ditch, consisting of 16.65 acres, as follows, to wit:

6.65 acres in the N.E. 1/4 of the S.E. 1/4 of Section 19, Twp. 9-S, R-16-E, N.M.P.M., irrigated by La Protectora Ditch. 10.00 acres in the S-1/2 of the N.W. 1/4 of the S.W. 1/4 the N.1/2 of the S.W. 1/4 of the S.W. 1/4 and the S.W. Corner of the N.E. 1/4 of the S.W. 1/4 og Section 20, Twp. 9-S, R-16-E, N.M.P.M., irrigated by La Protectora Ditch.

Lands receiving water through the Lincoln Ditch, consisting of 26.99 acres, as follows, to wit:

3.10 and 1.90 acres forming a continuous tract of 5.00 acres in the northwest quarter of the southeast quarter of Section 29, Twp. 9-S, R-16-E, N. M. P. M.

Begin at a point whence the 1/4 corner common to Sections 28 and 29, Twp. 9-S, R-16-E, N.M.P.M. bears N-40°32'-E, 1957.3 feet distant. Run thence S-75°31'-E, 126.8 feet; thence S-44°34'-W to the Lincoln ditch; thence in a northwesterly direction, following the meanderings of the Lincoln ditch, to a point whence the place of beginning bears N-44°17'-E, thence N-44°17'-E to the place of beginning containing 1.20 acres of land irrigated by the Lincoln ditch and situated in the town of Lincoln, in the S.1/2 of the S.E. 1/4 of Section 29, Twp. 9-S, R-16-E, N. M. P. M.

Begin at a point whence the 1/4 corner common to Sections 28 and 29, Twp. 9-S, R-16-E, N.M.P.M. bears N-26°50'-E, 1786 feet distant. Run thence S-73°05'-E, 111.3 feet; thence S-22°54'-W, 135 feet; thence in a northwesterly direction 50 feet, to the S.E. corner of a residence situated on this tract; thence in a northeasterly direction

along the residence 42 feet; thence in a northwesterly direction along the line of the residence to a point on the west line of this tract whence the place of beginning bears N-22°04'-E; thence N-22°04'-E to the place of beginning, containing 0.20 acre of land irrigated by the Lincoln ditch, and situated in the Town of Lincoln, in the S.E. 1/4 of the S.E. 1/4 of Section 29, Twp. 9-S, R-16-E, N.M.P.M.

From a point on the South side of the public road through the town of Lincoln, whence the 1/4 corner common to Sections 28 and 29, Twp. 9-S, R-16-E, N.M.P.M., bears N-12°40'-E, 1746.2 feet distent, run S-26°52'-E, 295 feet; thence N-71°30'-W, 60 feet; thence N-26°52'-E, 62 feet; thence N-71°30'-W, 62 feet; thence S-26°52'-W, to the Lincoln Ditch; thence in a Northwesterly direction following the meanderings of the Lincoln Ditch to a point on the east line of a tract of land formerly owned by I. C. Aragon, whence the N.W. Corner of this tract bears N-22°54'-E; thence following the east line of said Aragon Tract N-22°54'-E to the N.W. corner of this tract; thence S-71°30'-E, 323 feet to the place of beginning, containing 2.13 acres of land irrigated by the Lincoln Ditch, and situated in the Town of Lincoln, in the S.E. 1/4 of the S.E. 1/4 of Section 29, Twp. 9-S, R-16-E, N.M.P.M.

0.13 acres lying near the center of the Southeast Quarter of Section 29, Twp. 9-S, R-16-E, N.M.P.M.

0.23 and 1.18 acres, forming one continuous tract of 1.41 acres in the Southwest corner of Section 28, and the Northwest corner of Section 33, Twp. 9-S, R-16-E, N. M. P. M.

From a point on the South side of the public road through the town of Lincoln, whence the 1/4 corner common to Sections 28 and 29, Twp. 9-S, R-16-E, N. M. P. M., bears N-20°00'-W, 2577.3 feet, run N-57°58'-W, 311 feet to the East line of a tract of land owned by R. Salazar; thence along said line S-33°34'-W, 558 feet; thence S-58°00'-E, 135 feet; thence S-33°30'-W to the Lincoln Ditch; thence

following the meanderings of the Lincoln Ditch in a Southeasterly direction to the west side of a tract of land owned by F. Chavez; whence the place of beginning bears N-30°53'-E; thence following said Chavez line N-30°53'-E to the place of beginning, containing 4.65 acres of land irrigated by the Lincoln Ditch and situated in the Town of Lincoln, in the S.W. 1/4 of the S.W. 1/4 of Section 28, and in the N.W. 1/4 of the N.W. 1/4 of Section 33, Twp. 9-S, R-16-E, N.M.P.M.

10.39 acres in the S.E. 1/4 of the S.W. 1/4 of the S.W. 1/4 of Section 28; the N.E.Corner of the N.W. 1/4 of the N.W. 1/4 and the W. 1/2 of the N.E. 1/4 of the N.W. 1/4 of Section 33; all in Twp. 9-s, R-16-E, N. M. P. M.

1.88 acres in the N.E. 1/4 of the S.E. 1/4 of the N.W. 1/4 of Section 33, Twp. 9-S, R-16-E, N. M. P. M.

Lands receiving water through the Titsworth Ditch, consisting of 35.04 acres, as follows, to wit:

Beginning at a point on the Titsworth ditch, whence the N.W. corner of Section 29 bears N-59°00'-W, run thence in a southeasterly direction, following the meanderings of the Titsworth ditch to the point where it intersects the west line of a tract of land owned by E. L. Woods, whence the 1/4 corner of the west line of Section 28 bears N-43°00'-E; thence N-43°00'-E to the south bank of the Bonito River; thence follpwing the meanderings of said river bank in a northerly direction to a point whence the 1/4 corner on the east line of Section 29 bears N-85°50'-E; thence S-77°10'-W, 146 feet; thence N-43°30'-W, 1198 feet; thence N-51°30'-W to the south bank of the Bonito River; thence following the meanderings of said river bank to a point whence the place of beginning bears S-48°00'-W thence S-48°00'-W to the place of beginning, containing 26.27 acres of land irrigated by the Titsworth ditch, and situated in the W.1/2 of the N.W. 1/4 amd S.W. 1/4 of the N.E.1/4 and N.1/2 of the S.E.1/4 of Section 29, Twp. 9-S, R-16-E, N. M. P. M.

2.56, 0.58, 0.80, 0.73, 0.22 and 1.80 acres in the southwest quarter of the southwest quarter; and 0.95 acre in the south half of the south half of the southwest quarter, of Section 28, Twp. 9-S, R-16-E:

Also 1.13 acres in the southeast corner of the southwest quarter, and the southwest corner of the southeast quarter, of the southwest quarter of Section 28, and in the northwest corner of the northeast quarter and the northeast corner of the northwest quarter, of the northwest quarter of Section 33, all in Twp. 9-S, R-16-E, N.M.P.M.

Lands receiving water through the North Laws Ditch, consisting of 8.25 acres, as follows, to wit:

Begin at a point on the North Bank of the Bonito River, whence the Northwest corner of the Cemetery on the public road bears N-82°15'-W; Run thence N-77°15'-E, 473 feet; thence N-21°15'-W, 238 feet; thence N-60°00'-E, 45 feet; thence N-5°00'-E to the North Laws ditch; thence in a northwesterly direction, following the meanderings of said ditch to a point 600 feet distant from the last above mentioned point; thence S-54°00'-W to the north bank of the Bonito River; thence in a southerly direction, following the meanderings of said river bank, to the place of beginning, containing 8.25 acres of land irrigated by the North Laws ditch and situated in the N.E. 1/4 of Section 33, Twp. 9-S, R-16-E, N. M. P. M.

Lands receiving water through the South Laws Ditch, consisting of 18.18 acres, as follows, to wit:

From a point on the north side of the public road through the town of Lincoln, which is the southeast corner of a tract of land sold by J. W. Laws to Fred Pfingsten, whence the 1/4 corner common to Sections 28 and 29, Twp. 9-S, R-16-E, N.M.P.M. bears N-24°15'-W; run N-35°00'-E to the South Laws Ditch for a place of beginning. Run thence in a southeasterly direction, following the meanderings of said ditch, to a point on the east line of a tract of land sold by A. Rome

to Fred Pfingsten, distant 2210 feet from the last above mentioned point; thence N-22°30'-E, following said line, to the Hulbert Ditch; thence N-41°00'-W 725 feet; thence N-52°30'-W 222 feet; thence N-72°00'-W 290 feet; thence N-44°30'-W to the south bank of the Bonito River; thence following the meanderings of said bank in a northwesterly direction to a point whence the place of beginning bears S-45°00'-W; thence S-45°00'-W to the place of beginning, containing 18.18 acres of land irrigated by the South Laws Ditch, and situated in the S.E. 1/4 of the S.W. 1/4 of Section 28, and the N.1/2 of Section 33, Twp. 9-S, R-16-E, N. M.P. M.

Lands receiving water through the Hulbert Ditch, consisting of 82.37 acres, as follows, to wit:

Beginning at a point on the south bank of the Bonito River whence the S.E. corner of the N.E. 1/4 of Section 33, Twp. 9-S, R-16-E, N.M.P.M. bears S-2°45'-E; run thence following the meanderings of said river bank upstream to a point on same distant 712 feet from the last above named point; thence N-75°00'-W to a point on the south bank of the Bonito River; thence S-56°00'-W, 188 ft; thence S-58°30'-E, to the Hulbert ditch, thence following the meanderings of the said Hilbert ditch downstream to a point on same distant 1110 feet from the last above mentioned point; thence N-40°45'- E, to the place of beginning, contsining 5.13 acres of land situated in the S. E. 1/4 of the N. E. 1/4 of Section 33, Twp. 9-S, R-16-E, N.M.P.M. and irrigated by the Hulbert ditch.

Beginning at the 1/4 corner of the south line of Section 34, Twp. 9-S, R-16-E, N. M. P. M., run N-42°30'-W to a point on the Hulbert ditch as the place of beginning; thence N-39°00'-E, 588 feet; thence X-55°15'-E, 380 feet; thence N-46°10'-W, 385 feet; thence N-54°30'-E to the South bank of the Bonito River; thence in an easterly and southeasterly direction following the meanderings of said river bank, to a point whence the above mentioned 1/4 corner bears S-11°45'-E thence S-65°00'-E, 215 feet; thence S-46°45'-E, 375 feet; thence N-81° 15'-E, 305 feet; thence S-51°30'-E, 494 ft; thence S-19°00'-E, 652 feet

thence N-45°20'-W, 704 feet; thence N-72°30'-E 92 feet; thence N-2°00'-E, 94 feet; thence N-55°00'-E, 70 feet, thence N-55°30'-W, 24 feet; thence S-73°00'-W, 212 feet; thence N-59°30'-W 558 ft; to the N.W. corner of a tract of land formerly owned by Geo. H. Crumb; thence S-2°00'-E, to the Hulbert ditch; thence following the meanderings of the Hulbert ditch in a northwesterly direction 1875 feet, more or less, to the place of beginning, except a tract of 0.90 acre in the S.W. 1/4 of the S.E. 1/4 of Sec. 34 aforesaid, 0.83 acre in the S. 1/2 of the N.E. 1/4 of the S.W. 1/4 of Sec. 34, along the Hulbert ditch, and a tract of 0.98 acre of unirrigated rough land lying along a field lateral; the irrigated tract contains 26.94 acres of land irrigated by the Hulbert ditch and situated in the S. 1/2 of Section 34, Twp. 9-S, R-16-E, N.M.P.M.

From a point on the west line of a tract of land formerly owned by Geo. H. Crumb, where the same is crossed by the Hulbert ditch and whence the 1/4 corner on the south line of Section 34, Twp. 9-S, R-16-E, N.M.P.M. bears S-2°00'-E, run S-54°30'-E, 200 feet; thence N-61°45'-E, 100 ft; thence S-50°30'-E, 188 feet; thence N-75°30'-E, 142 feet; thence N-51°30'-W, 444 feet; thence S-40°30'-W, 105 feet; thence N-50°30'-W, 58 feet; thence in a southwesterly direction to the place of beginning, containing 1.58 acres of land irrigated by the Hulbert ditch and situated in the S. 1/2 of the S. 1/2 of Section 34, Twp. 9-S, R-16-E, N. M. P. M.

From the 1/4 corner on the south side of Section 34, Twp. 9-S, R-16-E, N. M. P. M. run N-38°30'-E, 656 feet to the place of beginning. Run thence N-38°30'-E, 102 feet; thence S-52°00'-E, 377 feet; thence S-85°00'-W, 118 ft; thence in a northwesterly direction to the place of beginning, containing 0.75 acre of land, irrigated by the Hulbert ditch and situated in the S. W. 1/4 of the S. E. 1/4 of Section 34, Twp. 9-S, R-16-E, N. M. P. M.

From the 1/4 corner on the south line of Section 34, Twp. 9-S, R-16-E, N. M. P. M. run N-74°15'-E to a point on a south fork of the

Hulbert ditch, formerly known as Hulbert #3 ditch, for the place of beginning. Run thence N-44°00'-E, 238 feet; thence S-59°00'-E, 1105 feet; thence S-22°30'-W, 61 feet; thence S-51°00'-E, 238 feet, to the southerly line of a tract of land formerly owned by Geo. H. Crumb; thence S-47°15'-W following said line to its intersection with the above mentioned ditch; thence in a northwesterly direction along said ditch to the place of beginning; containing 10.28 acres of land irrigated by the Hulbert ditch and situated in the S.1/2 of the S.E. 1/4 of Section 34, Twp. 9-S, R-16-E, and the N. 1/2 of the N.E. 1/4 of Section 3, Twp. 10-S, R-16-E, N. M. P. M.

From the southwest corner of the N.W. 1/4 of Section 2, Twp. 10-S, R-16-E, N. M. P. M., run S-38°20'-E to a point on the Hulbert ditch where said ditch is intersected by the west line of a tract of land formerly owned by L. Montoya, for the place of beginning. Run thence N-50°15'-E, 511 feet along said line; thence N-50°00'-W, 115 feet; thence N-9°00'-W, 355 feet; thence N-27°30'-W, 608 feet; thence N-8°30'-W, 54 feet; thence N-44°00'-W, 885 feet to a point on the northwesterly line of a tract of land formerly owned by F. Chavez, said point being at a distance of 560 feet from the south bank of the Bonito River along said line; thence N-48°30'-E, 363 feet along said line; thence S-46°15'-E, 858 feet; thence S-77°45'-E, 58 feet; thence S-5°00'-W, 319 feet to the south bank of the Bonito River; thence S-36°45'-E, 582 feet; thence S-45°00'-E, 187 feet; thence N-45°00'-E to the bank of the Bonito River; thence in a southeasterly direction 325 feet, with the meandering of said river bank to a point distant 335 feet from the last above mentioned point, downstream; thence S-50°40'-W, 635 feet; thence N-46°30'-W, 141 feet to the East line of the above mentioned Montoya tract; thence S-52°30'-W following said line, to the Hulbert ditch; thence in a northwesterly direction, following the meanderings of said ditch, to the place of beginning, containing 20.59 acres of land, there being excepted from above described tract, a strip containing 0.90 acre adjoining the Hulbert Ditch near the point of beginning, lying in the S. W. 1/4 of the N. W.

1/4 and the N.W. 1/4 of the S. W. 1/4 of Section 2, said 20.59 acres is irrigated by the Hulbert ditch and situated in the E. 1/2 of the N. E. 1/4 of Sec. 3, and W. 1/2 of the N. W. 1/4 of Section 2, Twp. 10-S, R-16-E, N. M. P. M.

0.98 acre in the southeast quarter of the northeast quarter of Section 3, T-10-S, R-16-E, N. M. P. M.

5.72 acres in the east half of the southwest quarter, and the west half of the southwest quarter of the southeast quarter of Section 2, Twp. 10-S, R-16-E, N. M. P. M.

From the 1/4 corner of the south line of Section 2, Twp. 10-S, R-16-E, N. M. P. M. run No-14°30'-W to a point on the south bank of the Bonito River for the place of beginning. Run thence S-52°20'-W, 338 feet; thence S-30°00'-E, 304 feet; thence S-14°40'-E, 128 feet; thenceS-42°00'-E, 288 feet; thence S-50°00'-E 565 feet; thence N-32°30'-E, 96 feet; thence N-2°30'-W, 130 ft; thence N-16°30'-W to the north bank of the Bonito River, thence following the meanderings of said bank in/northwesterly direction to the place of beginning, containing 10.40 acres of land, irrigated by the Hulbert ditch and situated in the N. E. 1/4 of the S. W. 1/4 of Section 2, Twp. 10-S, R-16-E, N. M. P. M.

Lands receiving water through the E. Fritz Ditch, consisting of 55.46 acres, as follows, to wit:

Beginning at the junction of the Hulbert ditch and the E. Fritz ditch, whence the 1/4 corner on the south line of Section 2, Twp. 10-S, R-16-E, N. M. P. M. bears S-3°15'-E, run thence N-44°15'-E, 204 feet; thence S-50°00'-E, 78 feet; thence N-44°30'-E to the south bank of the Bonito River; thence S-36°00'-E 433 feet; thence S-17°30'-E, 132 feet; thence S-6°30'-W, 324 feet; thence S-15°30'-E to the south bank of the Bonito River; thence following the meanderings of said river bank in a southeasterly direction to a point whence the S. E. corner of Sec. 2, aforesaid, bears N 14°30'-W; thence S-33°00'-W to a point on the E. Fritz ditch; thence following the meanderings of the E. Fritz ditch in a northwesterly direction to the place of beginning.

Of the above described tract there is an unirrigated 2.22 acres lying along the river bank in the N.E. 1/4 of Sec. 11, and 1.63 acres lying along the E. Fritz ditch near the N. E. corner of the S. W. 1/4 of the N. E. 1/4 of Section 11, having 48.81 acres of land irrigated by the E. Fritz ditch and situated in the E. 1/2 of the S. W. 1/4 and the W. 1/2 of the S. E. 1/4 of Section 2, and N. E. 1/4 of Section 11, and the S. W. 1/4 of the N. W. 1/4 of Section 12, Twp. 10-S, R-16-E, N. M. P. M.

Beginning at a point on the south bank of the Bonito River, whence the S. E. corner of the N. W. 1/4 of Sec. 12, Twp. 10-S, R-16-E, N. M. P. M. bears N-26°50'-E, run thence S-44°00'-W to a point on the E. Fritz ditch; thence in a northwesterly direction following said ditch to a point on said ditch, whence the above mentioned corner bears N-76°30'-E; thence N-24°30'-E, to the south bank of the Bonito River; thence in a southeasterly direction following the meanderings of said river bank to the place of beginning, containing 6.65 acres of land irrigated by the E. Fritz ditch, and situated in the N. E. 1/4 of the S. W. 1/4 of Section 12, Twp. 10-S, R-16-E, N. M. P. M.

Lands receiving water through the Hulbert Spring Ditch, consisting of 11.53 acres, as follows, to wit:

From the S. W. corner of the N. W. 1/4 of Section 34, Twp. 9-S, R-16-E, N. M. P. M., run N-52°30'-E tp a point on the Hulbert Spring ditch. Run thence in a southeasterly direction, following the meanderings of said ditch to a point; whence the above mentioned corner bears S-84°30'-W, 1330 ft. distant; thence S-26°00'-W, 365 feet to the north bank of the Bonito River; thence N-76°00'-W, 158 ft; thence S-6°00'-W, 182 feet to the said river bank; thence S-84° 30'-W, 118 ft; thence N-84°10'-W, 216 ft; thence N-67°00'-W, 360 feet; thence N-43°30'-W, 198 feet; thence N-12°15'-W, 136 ft; thence N-9°00'-E, 183 feet; thence N-40°45'-E, 220 feet; thence in an easterly direction to the place of beginning, containing 11.53 acres of land irrigated by Hulbert Spring and situated in the S. 1/2 of

the N. W. 1/4, and N. 1/2 of the S. W. 1/4 of Section 34, Twp. 9-S, R-16-E, N. M. P. M.

Lands receiving water through the F. Chavez Ditch, consisting of 39.87 acres, as follows, to wit:

3.00 acres lying between the F Chavez Ditch and the Bonito River in the S. 1/2 of the S. E. 1/4 of the S. E. 1/4 of Section 34, Twp. 9-S, R-16-E, N. M. P. M.

From the N. W. Corner of Section 2, Twp. 10-S, R-16-E, N.M.P.M. run 3°00'-W to a point on the F. Chavez Ditch, and continuing the same course 40 feet to the place of beginning. Run thence S-41°00'-E, 391 feet; thence S-55°00'-E, 577 feet; thence S-47°15'-W, 277 feet; thence S-46°20'-E, to the F. Chavez Ditch; thence S-41°30'-W, 220 feet; thence S-43°45'-E, 150 feet; thence N-68°30'-E to the F. Chavez Ditch; thence S-72°30'-E, 143 feet; thence S-40°30'-E, 190 feet; thence S-14°15'-E, 645 feet; thence N-67°30'-W to the North bank of the Bonito River; thence following the meanderings of said bank to a point distant 650 feet from the last above named point; thence N-72°30'-W, 140 feet; thence N-5°00'-E, 218 feet; thence N-5°00'-W, 160 feet; thence N-41°15'-W, 920 feet; thence N-12°45'-E, 97 feet; thence in a Northeasterly direction to the place of beginning, containing 14.87 acres of land irrigated by the F. Chavez Ditch and situated in the N. E. 1/4 of the N. E. 1/4 of Section 3 and the West 1/2 of the N. W. 1/4 of Section 2, Twp. 10-S, R-16-E, N. M. P. M.

From the 1/4 corner on the South line of Section 2, Twp. 10-S, R-16-E, N. M. P. M., run East to a point on the Chavez Ditch, formerly a part of the Dow Ditch, for the place of beginning. Run thence in a Northwestern direction, following the meanderings of said ditch, to a point whence the 1/4 corner mentioned above bears S-12°00'-W; thence N-61°00'-W, 255 feet; thence N-80°00'-W to a point on the Chavez Ditch; thence S-30°00'-E to the North bank of the Bonito River; thence following the meanderings of said river bank in a southeasterly

direction to a point whence the above mentioned 1/4 corner bears S-39°45'-W; thence S-23°00'-E to the north bank of the Bonito River; thence following the meanderings of said river bank in a southeasterly direction 330 ft; thence N-86°0'-E, 350 ft; thence in a southeasterly direction to the place of beginning, containing 22.00 acres of land irrigated by the F. Chavez ditch and situated in the N. E. 1/4 of the S. W. 1/4 and S. E. 1/4 of Section 2, Twp. 10-S, R-16-E, N. M. P. M.

Lands receiving water through the E. Fritz Spring Ditch, consisting of 9.16 acres, as follows, to wit:

1.43 acres lying between the E. Fritz Spring Ditch and the Bonito River, extending southwestwardly from the dam and reservoir below the E. Fritz Spring in the E. 1/2 of the N. E. 1/4 of the S. W. 1/4; and the W. 1/2 of the N. W. 1/4 of the S. E. 1/4 of Section 12;

Also 7.73 acres lying southeastwardly downstream from the above mentioned tract, between the E. Fritz Spring Ditch and the Bonito River, in the E. 1/2 of the N. E. 1/4 of the S. W. 1/4, and the N. W. 1/4 of the S. E. 1/4 of Section 12:

All the above mentioned land is in Section 12, Twp. 10-S, R-16-E, N. M. P. M., and irrigated by the E. Fritz Spring Ditch.

Lands receiving water through the Elena Vigil Ditch, consisting of 38.16 acres, as follows, to wit:

5.83 acres in the east half of the northeast quarter; 5.50 acres in the southeast quarter of the northeast quarter, and the northeast quarter of the southeast quarter; 2.93 acres in the northeast quarter of the southeast quarter; all in Section 13, Twp. 10-S, R-16-E, N.M.P.M.: also 0.15 and 10.03 acres lying in the east half of the southeast quarter of said Section 13, and in the west half of the southwest quarter of Section 18, Twp. 10-S, R-17-E, N.M.P.M.: also 3.32 acres in the southwest quarter of the southwest quarter of said Section 18: forming one continuous tract of 31.71 acres irrigated by Elena Vigil Ditch.

6.45 acres in the southwest quarter of the southwest quarter of Section 18, and the north half of the northwest quarter of Section 19, Twp. 10-S, R-17-E, N. M. P. M.

Lands receiving water through the Las Chosas Ditch, consisting of 75.18 acres, as follows, to wit:

Beginning at a point on Las Chosas Ditch 740 feet distant from the headgate thereof on the Bonito River and whence the N. W. corner of Section 13 bears N-85°30'-W; run thence N-74°30'-E to a point on the south bank of the Bonito River; thence S-17°43'-E 330 feet; thence S-29°10'-E 405 ft; to a point 18 feet from the south bank of the Bonito River; thence S-6°00'-E, 383 ft; thence S-18°10'-E, 542 ft; thence S-8°30'-E, 198 ft. to a point 25 feet west of the west bank of the Bonito River; thence S-87°20'-W 177 ft; thence S-17°30'-E, 608 ft; thence S-20°00'-E, 922 ft; thence S-28°15'-E, 540 ft; thence S-40°45'-E, 808 ft. to a point 40 feet west of the west bank of the Bonito River; thence 0°45'-E, 430 ft; thence S-55°00'-E 275 ft, to a point 30 feet west of the west bank of the Bonito River; thence S-20°10'-E, 252 ft; thence S-43°00'-E, 111 ft; thence S-63°00'-E, 181 ft; thence S-27°40'-E, 154 ft; thence N-73°50'-E, 70 ft. to a point 30 ft. west of the west bank of the Bonito River; thence S-25°20'-E, 252 ft; thence N-70°00'-E, 25 ft; thence S-32°00'-E to the west bank of the Bonito River; thence following the west bank of the Bonito River S-16°43'-W, 190 ft; thence S-20°40'-E, 588 ft. to a point on a wire fence, whence the N. W. corner of an adobe dwelling near the N. W. corner of the S. E.1/4 of the N. W. 1/4 of Section 19, Twp. 10-S, R-17-E, N.M.P.M. bears S-20°20'-W, 90 ft. distant; thence S-66°20'-W to a point on Las Chosas ditch; thence following the meanderings of said ditch in a northwesterly direction to the place of beginning. The above described tract includes unirrigated acreage to the amount of 2.97 acres lying in long, narrow strips and small irregularly shaped parcels, along Las Chosas Ditch. It contains 75.18 acres of land irrigated by Las Chosas ditch and is situated in the S. W. 1/4 of the N. W. 10/4, and N. 1/2 of the N. W. 1/4 of

Section 19, the S. W. 1/4 pf the S. W. 1/4 of Section 18, Twp. 10-S, R-17-E; and E. 1/2 of the S. E. 1/4 amd part of the N. E. 1/4 of Section 13. Twp. 10-S, R-16-E, N. M. P. M.

Lands receiving water through the H. Fritz Spring Ditch, consisting of 25.75 acres, as follows, to wit:

Beginning at the junction of the H. Fritz Spring didth and the Bradstreet & Vorwerk ditch, whence the S. E. corner of Section 29, Twp. 10-Sm R-17-E, N. M. P. M. bears S-73°40'-E; Run thence in a northwesterly direction, following the meanderings of the Fritz Spring ditch to a point on the same whence the above mentioned corner bears S-61°15'-E; thence S-83°00'-W, 120 ft; thence N-61°30'-W, 195 ft; thence S-31°30'-", 40 ft; thence N-61°30'-W, 548 ft; thence S-30°45'-W, 345 ft; thence S-60°30'-W, 138 ft; thence N-62°30'-W, 60 ft; thence N-32°00'-W, 118 ft; thence S-59°45'-W, 158 ft; thence S-33°45'-W, 245 ft; thence S-18°43'-E 303 ft; thence S-51°30'-E, 320 ft; thence S-87°00'-E, 393 ft; thence N-84°30'-E to the Bradstreet & Vorwerk ditch, thence following the meanderings of the Bradstreet & Vorwerk ditch to the place of beginning, there being excepted two adjoining tracts of 3.60 and 3.00 acres in the S. 1/2 of Section 29, Twp 10-S, R-17-E, N. M. P. M., containing 18.19 acres of irrigated land, and 1.13 acres of unirrigated barnyard.

Also:- A garden plot of 0.38 acres lying just south of the residence and adjoining the main branch of the spring ditch on the north, the S. E. corner of which is on said ditch 710 feet above its junction with the Bradstreet ' Vorwerk ditch.

Also:- A tract of orchard and garden described as follows: Beginning at a point on the H. Fritz Spring Ditch 25 feet above the junction of the Fritz Spring and Bradstreet & Borwerk ditches, as heretofore located. Run thence N-59°20'-E, 140 ft; thence N-44°45'-W, 728 ft; thence N-44°00'-E, 192 ft. to the south line of the public road, thence S-49°30'-E, 943 ft., following the south line of the punlic road; thence S-10°00'-W, 108 ft; thence S-32°15'-E, 112 ft; thence S-61°30'-E, 120 ft; thence N-86°15'-E to the said south line

of the public road; thence following said line S-41°30'-E, 197 ft; thence S-20°15'-E, 140 ft; thence N-80°15'-W, to the above mentioned H. Fritz Spring ditch; thence following the meanderings of said ditch in a northwesterly direction to the place of beginning, containing 7.18 acres of irrigated land.

All of the above tracts are irrigated by the H. Fritz Spring Ditch, and are situated in the E. 1/2 of the S. W. 1/4 and the S. 1/2 of the S. E. 1/4 of Section 29- Twp. 10-S, R-17-E, N. M. P. M.

Lands receiving water through the Fbitz and Gonzales Ditch, consisting of 7.88 acres, as follows, to wit:

Beginning at a point on the South bank of the Bonito River, whence the S. E. Corner of Section 29, Twp. 10-S, R-17-E, N. M. P. M., bears S-85°00'-E,; run thence S-48°15'-W, 80 feet; thence S-17°50'-W, 108 feet; thence S-60°00'-W, to a point on the Fritz and Gonzales Ditch; thence following said ditch in a northwesterly direction 350 feet to a point; thence N-30°10'-E, to the south bank of the Bonito River; thence following the meanderings of said river bank in a southeasterly direction to the place of beginning, containing 2.68 acres of land irrigated by the Fritz and Gonzales dutch and situated in the S. W. 1/4 of the S. L. k.4 of Section 29, and the N. W. 1/4 of t N. E. 1/4 of Section 32, Twp. 10-S, R-17-E, N. M. P. M.

5.20 acres near the center of the N. E. 1/4 of Section 32. Twp. 10 R-17-E, N. M. P. M.

Lands receiving water through the Bradstreet and Vorwerk Ditch, consisting of 57.32 acres, as follows, towit:

Beginning at the junction of the Hl Fritz Spring ditch and the Bradstreet & Vorwerk ditch, whence the S. E. corner of Section 29. Twp 10-S, R-17-E, N.M.P.M. bears S-74°00'-E; Run thence in a southeasterly direction, following the meanderings of said ditch to a point on said ditch, whence the above mentioned corner bears N-39°00'-E; thence N-60°00'-W to a point on the lower branch of the Bradstreet &Vorwerk

ditch, thence following the meanderings of said ditch in a northwesterly direction to the point where the main ditch branches; thence following the north branch to the place of beginning, containing 16.82 acres of land irrigated by the Bradstreet & Vorwerk Ditch and situated in the S. 1/2 of the S. E. 1/4 of Section 29, and the N. 1/2 of the N. E. 1/4 of Section 32, Twp. 10-S, R-17-E, N. M. P. M.

Beginning at a point on the Bradstreet & Vorwerk ditch whence the N. E. corner of Section 32, Twp. 10-S, R-17-E, N.M.P.M. bears N-29°15'-E and the N. W. corner of the dwelling on this tract bears N-66°00'-E; Run in a southeasterly direction, following the meanderings of said ditch to a point on same, at a wire fence, whence the S. E. corner of Section 32 bears S-21°40'-W; thence S-65°00'-W to a point on the lower branch of the Bradwtreet & Vorwerk ditch; thence following the meanderings of said ditch to a point on same 1175 ft. distant from the last above mentioned point; thence N-36°0'-W, 415 ft; thence N-21°0'-E, 165 ft; thence N-57°20'-W, 98 ft; thence N-33°30'--W to a point on the east bank of the Bonito River; thence in a northwesterly direction following the meanderings of said river bank to a ppint whence the place of beginning, bear N-66°0'-E; thence N-66-°0'-E to the place of beginning, containing 40.50 acres of land irrigated by the Bradstreet & Vorwerk ditch and situated in the S. E. 1/4 of the N.E. 1/4 and N.E. 1/4 of the S.E. 1/4 of Section 32; and the N. W. 1/4 of the S. W. 1/4 of Section 33, Twp. 10-S, R-17-E, N. M. P. M.

Lands receiving water through the J. Gonzales Ditch, consisting of 23.91 acres, as follows, to wit:

Beginning at a point on the west bank of the Chavez arroyo, whence the N. W. corner of Section 11, Twp. 11-S, R-17-E, bears N-87°40'-E: - Run thence N-73°45'-W to the Jose Gonzales ditch; thence following the meanderings of said ditch in a westerly direction to a point on the east line of a private road distant 600 feet from the last above mentioned point; thence following said line S-0°45'-E

to the public road at a point on the south line of the N. E. 1/4 of the N. E. 1/4 of Section 10; thence eastward along said line to the west bank of the Chavez arroyo; thence following the meanderings of said bank in a northerly direction to the place of beginning.

The above described tract contains 23.91 acres of land irrigated by the Jose Gonzales ditch, and situated in the N. E. 1/4 of the N. E. 1/4 of Section 10, and the S. E. 1/4 of the S. E. 1/4 of Section 3, Twp. 11-S, R-17-E, N. M. P. M.

Lands receiving water through the Kirkland Ditch, consisting of 62.44 acres, as follows, to wit:

Begin at a point on the Kirkland ditch, where said ditch is intersected by the north line of the S. W. 1/4 of the N. E. 1/4 of Section 4, Twp. 11-S, R-17-E, N. M. P. M. Run thence following the meanderings of the Kirkland Ditch downstream, to a point distant 1650 feet from the place of beginning; thence S-38° 30'-W, 915 ft; thence N-44° 10'-W, 568 ft; thence N-10° 00'-E, 233 ft; thence N-42° 15'-E, 130 ft; thence N-15° 45'-W, 178 ft; thence S-83° 30'-W, 75 ft; thence N-20° 30'-W 450 feet; thence southwestwardly to the northerly bank of the Bonito River; thence northwestwardly along said river bank to the southerly boundary line of a tract of land owned by S. Gonzales, thence eastwerdly along said boundary line to the point of beginning, containing 31.41 acres of land lying in the W. 1/2 of the N. E. 1/4, the N. W. 1/4 of the S. E. 1/4 and the E. 1/2 of the E. 1/2 of the N. W. 1/4 of Section 4, Twp. 11-S, R-17-E, N. M. P. M.

Beginning at a point on the Kirkland ditch whence the 1/4 corner on the East side of Section 4, Twp. 11-S, R-17-E, bears N-36° 45'-E; run thence S-2° 30'-E to the A. Chavez ditch, thence following said ditch to a point distant 195 feet from the last above mentioned point; thence S-10° 30'-W, 150 ft; thence S-82° 45'-W to a point on the north bank of the Hondo River; thence along said river bank to a point 320 feet distant from the last above mentioned point; thence N-74° 45'-W, 290 ft; thence N-4° 50'-E, 255 feet; thence N-68° 15'-W to the north

bank of the Hondo River; thence N-11° 30'-W to the P. Chavez ditch; thence following the meanderings of the P. Chavez ditch in a northwesterly direction to a point distant 580 feet from the last above mentioned point; thence N-18° 30'-E, 135 ft; thence N-39° 00'-W, 122 ft; thence N-38° 30'-E to the Kirkland Ditch; thence following the meanderings of the Kirkland ditch downstream to the place of beginning. There is excepted from this area a tract of unirrigated land of triangular shape, containing 0.44 acre, and lying in the E. 1/2 of the N. W. 1/4 and the W. 1/2 of the N. E. 1/4 of the S. E. 1/4 of said Section 4.

Also a garden tract of 0.15 acre situated just east of the dwelling adjoining the above described land and near the place of beginning of the above description.

The above tracts contain 31.03 acres of land situated in the S. E. 1/4 of Section 4, Twp. 11-S, R-17-E, N. M. P. M., irrigated by the Kirkland Ditch.

That the land and real estate owned or reputed to be owned or claimed by the defendants A. N. Runnels and Mrs. Lula Runnels or in which the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 0.64 acre, known as the A. N. Runnels Tract, or a part thereof, lying and being under the Runnels Ditch and located within the north half of the southwest quarter of the southwest quarter of Section 8, T 10 S, R 13 R, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Crucita Baca, the same person as Crusita Baca, Quirina Chavez, the same person as Quirina Zamora Chavez, Emelio Zamora, the same person as Emilio Zamora, Delfin Zamora and Leandro Zamora, or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 5.93 acres, known as a part of the Manuel Zamora Place, lying and being under the Lutz Ditch, being lots or parcels of 5.33 acres and 0.60 acres in the southeast quarter of the northwest quarter of Section 5, T 9 S, R 15 E.; also those certain tracts or parcels of land containing 1.80 acres known as the Manuel Zamora Place, or a part thereof, lying and being under the Government Spring Ditch, consisting of lots or parcels containing 0.77 and 1.03 acres in the northeast quarter of the southeast quarter of Section 15, T. 9 S, R 15 E.

That the land and real estate owned or reputed to be owned or claimed by defendant Sosteno H. Torres, the same person as S. H. Torres, or in which the said defe ndant has or claims some interest, for which such water rights are and shall be established, is described as follows to wit:

Those certain tracts or parcels of land containing 3.18 acres known as the S. H. Torres Place, or a part thereof, lying and being under the Government Spring Ditch, consisting of lots or parcels containing 1.90, 0.47 and 0.28 acres in the northeast quarter of the southeast quarter of Section 15, and the northwest quarter of the southwest quarter of Section 14; also 0.53 acre in the northwest and northeast quarters of the southeast quarter of Section 15, all in T 9 S, R 15 E.

That the land and real estate owned or reputed to be owned or claimed by the defendants Regina Apodaca de Baca, the same person as Regina B. Baca, Alberto Salazar, Juan Salazar and Teofilo Salazar, or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 1.82 acres known as the Teofilo Salazar Place, or a part thereof, lying and being under the Cruz de Jara Ditch, and described as being 1.82 acres lying between the Cruz de Jara ditch and the Bonito River, located approximately 1100

feet southeastwardly along said ditch, from the road in Salazar Canyon; situated in the Northeast quarter of the Northwest quarter of the Southwest quarter of Section 13, Twp. 9-S, R-15-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendant Mrs. Walter Amacher or in which the said defendant has or claims some interest, for which such water rights are and shall be established is described as follows, to-wit:

Those certain tracts or parcels of land containing 5.72 acres known as the G. Sena Place, or a part thereof, lying and being under the Cruz de Jara Ditch and described as 4.80 acres in the west half of the southeast quarter and 0.92 acre in the north half of the southwest quarter, all in Sec. 13-T-9-S, R-15-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Isabel Salazar and Yginio Salazar, or in which said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to wit:

That certain tract or parcel of land containing 5.26 acres known as the Yginio Salazar Place, or a part thereof, lying and being under the Cruz de Jara Ditch, which land is located in the northeast quarter of the southwest quarter of Section 13, T-9-S, R-15-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Genoveva Salazar and Jose Salazar, or in which said defendants have or claim some interest, for which such wate rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 1.60 acres known as the Jose Salazar Tract, or a part thereof, lying and being under the Sedillo (La Fortuna) Ditch, which land is located in the northeast quarter of the southwest quarter of Sec. 13, T-9-S, R-15-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Manuel Benavidez and Margarita Benavidez, or in which said defendants have or claim some interest, f or which

such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 3.73 acres known as the Manuel Benavidez Place, or a part thereof, lying and being under the Cruz de Jara Ditch, which land is located in the northeast quarter of the southwest quarter of Sec. 13, T-9-S, R-13-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Cristobal Zamora, Juan Zamora, the same person as Jual Salas Zamora, Victoria Zamora and Vidal Zamora, the same person as Vidal Samora, or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 7.47 acres known as the Francisco Zamora Place, or a part thereof, lying and being under the Cruz de Jara Ditch, which land is located in the northwest corner of the northwest quarter of Sec. 19, T-9-S, R-16-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendant A. T. Pfingsten or in which said defendant has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 0.75 acre, more or less, known as the Francisco Baldonado Tract, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the west half of the west half of Section 19, T-9-S, R-16-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Mrs. Enrique Flores, Amelia Gamboa Flores, Marcelina Gamboa and Carolina Sanchez or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 0.89 acre known as the T. Gamboa Tract, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the north half of the southwest quarter and the south half of the northwest quarter, of

Section 19, T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by defendant Telesfor Baca, the same person as Telesforo Baca, or in which said defendant has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 5.11 acres known as the Telesforo Baca Tract, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the southeast quarter of the northwest quarter of Section 19, T-9-S, R-16-E, N.M.P.M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Beatris Chaves, the same person as Beatrice Chaves, misnamed in the complaint as De Gracia Chavez or Mrs. De Gracia Chavez, Porfirio Chavez, Francisca Vigil de Baca, Isidro Fresquez, Maria Vigil de Fresquez, Tonito Vigil de Montoya, Beatris Vigil, Daniel Vigil, Macario Vigil, Manuel Vigil, Venancio Vigil, misnamed in the complaint as Venancia Vigil, or in which either of said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 15.89 acres known as the F. Chavez Place, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the south half, and in the south half of the southeast quarter of the northwest quarter of Section 19, T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Anselmo Baca, Bona Baca, the same person as Bony B. Baca, Carmen Baca, Jose Baca, Josefita Baca, Juanita Baca de Bassford, and Agnes St. John, or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 0.60 acre known as the Jose Baca Place, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the south half of

Section 19, T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Adanago Archuleta and Elfego Griego, or in which one of the said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to wit:

Those certain tracts or parcels of land conteining 2.33 acres known as the E. Griego Place, or a part thereof, lying and being under the La Providencia Ditch, which land is located within the southwest quarter of the southeast quarter and southeast quarter of the southeast quarter of Section 19, T 9 S, R 16 E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants E. H. Miranda, the same person as Emilio H. Miranda, Mrs. Jose Miranda and Mrs, Ramona Salazar or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

That certain tract or parcel of land containing 1.07 acres known as the Jose Miranda Place, or a part thereof, lying and being under the La Providencia Ditch, which is described as lying approximately 550 feet east of the section corner common to Sections 19, 20, 29 and 30, T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Francisco Gomez, Cista Lujan, the same person as Sista Lujam, Leopoldo Lujan and Ladislado Salaz, or in which one or more of the said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 16.28 acres known as the Salaz Estate, or a part thereof, lying and being under the La Providencia Ditch, which land is located in the southeast corner of the northwest quarter, the southwest corner of the northeast quarter and the northeast corner of the southwest quarter of Section 29,

T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendants Carroe Dow and the Lincoln Acequia Company, or in which either of said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 16.29 acres known as the Peppin Estate, or a part thereof, lying and being under the Lincoln Ditch, which land is described as one continuous tract lying near the center of Sec. 29, T-9-S, R-16-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by defendants Earl L. Woods, the same person as Dr. E. L. Woods, Maidie Woods, the same person as Mary J. Woods, and Lincoln Acequia Company, or in which said defendants have or claim some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 1.77 acres known as the Dr. Woods Place, or a part thereof, lying and being under the Lincoln Ditch, which land is located within the east half of the southeast quarter of Section 29, T-9-S, R-16-E, N.M.P.M., in the town of Lincoln.

That the land and real estate owned or reputed to be owned or claimed by the defendants Balentin Gallegos, Facundo Gallegos, the same person as Fecundo Gallegos, Juan Gallegos, the same person as John Gallegos, Lugarita G. Gonzales, Miguel Gallegos, Sebiro Gallegos, Amelia Vigil, the same person as Emelia Vigil, Elfego Vigil, and Lincoln Acequia Company, or in which either of the said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 2 acres, known as the F. Chavez Place, or a part thereof, lying and being under the Lincoln Ditch, which land is described as 0.38 and 0.15 acres, forming one continuous tract of 0.53 acre, on the north side of the

public road through the Town of Lincoln, in the southwest quarter of the southwest quarter of Section 28; also 0.47 and 0.85 acres in the southwest quarter of the Southwest quarter of Section 28, and the northwest quarter of the northwest quarter of Section 33; also, 0.15 acre in the northwest quarter of the northwest quarter of Section 33; all in T-9-S, R-16-E in the Town of Lincoln.

That the land and real estate owned or reputed to be owned or claimed by the defendants A. T. Pfingsten, Gorgonio Wilson and Lincoln Acequia Company, or in which either of said defendants has or claims some interest, for which water rights are and shall be established, is described as follows, to-wit:

These certain t racts or parcels of land containing 4.30 acres, part of which is known as the G. Wilson Place and part of which is known as the Pfingsten Place, or parts thereof, lying and being under the Lincoln Ditch, which land is described as comprising one tract of 4.30 acres in the southeast corner of Section 29, the southwest corner of Section 28, the northwest corner of Section 33, and the Northeast corner of Section 32, all in T-9-S, R-16-E, N.M.P.M., in the Town of Lincoln.

That the land and real estate owned or claimed by the defendants Mrs. Teodora Maes, the same person as Theodora Romero Maes, Carmen Romero, Mary Romero, Tyreio Romero, the same person as Tereio Romero, Mrs. Roberta Romero, the same person as Mrs. Refugio Romero, Refugio C. Romero, Ophelia Romero, and Lincoln Acequia Company, or in which either of said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

These certain tracts or parcels of land containing 2.28 acres known as the R. Romero Place, or a part thereof, lying and being under the Lincoln Ditch, which land is located in the southeast corner of Section 29, and the southwest corner of Section 28, T-9-S, R-16-E, N. M. P. M., in the Town of Lincoln.

That the land and real estate owned or reputed to be owned or claimed by the defendents Martha Benavidez, the same person as Marta Benavidez, Fego Montoya, Daniel Salazar, Federico Salazar, Lincoln Acequia Company, or in which either of said defendants has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 4.62 acres known as the Pedro Salazar Estate, or a part thereof, lying and being under the Lincoln Ditch, which land is described as comprising one continuous tract of 4.62 acres, in the north half of the northwest quarter of Section 33, T-9-S, R-16-E, N. M. P. M., in the Town of Lincoln.

That the land and real estate owned or reputed to be owned or claimed by the defendant, The First National Bank of Tucumcari, or in which said defendant has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 7.50 acres known as the Cleto Chavez Place or the property of the First National Bank of Tucumcari, N. . or a part thereof, lying and being under the Las Chosas Ditch and described as being 7.50 acres in the southeast quarter of the northwest quarter of Section 19, Twp. 10-S, R-17-E, N. M. P. M.

That the land and real estate owned or reputed to be owned or claimed by the defendant Santiago Gonzales, the same person as Jim Gonzales, or in which the said defendant has or claims some interest, for which such water rights are and shall be established, is described as follows, to-wit:

Those certain tracts or parcels of land containing 23.24 acres, known as the S. Gonzales Place, or a part thereof, lying and being under the Fritz and Gonzales Ditch, which land is located within the east half of Sec. 32, the southwest quarter of Sec. 33, T-10-S, R-17-E, and in the northwest quarter of Sec. 4, T-11-S, R-17-E, N.M.P.M.; and

also 0.53 acres lying and being under the Kirkland Ditch, which land is located in the southeast corner of the northeast quarter of the northwest quarter of Sec. 4, T-11-S, R-17-E, N. M. P. M.

IT IS FURTHER ORDERED AND ADJUDGED that in all instances where there appears to be a variance in the descriptions of lands shown in the amended complaint and in this final judgment that the amended complaint shall be deemed to be amended by trial amendment to agree with the descriptions shown in this judgment, which the court finds to be correct, to the same effect as though such amendments were actually written into the face of the said amended complaint.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the period of use of water for irrigation for the lands of the defendant The First National Bank of Tucumcari, New Mexico, adjudged to have water rights through the Las Chosas Ditch shall be prorated in accordance with the acreage adjudged for said land, that is to say, the said defendant's period of use of water for irrigation purposes compared to the whole use of water out of the said Las Chosas Ditch shall be in the same ratio as the said defendant's irrigated acreage bears to the whole irrigated acreage under said ditch and the said defendant's irrigation rights shall be fully equal, according to said acreage, to the rights for all other irrigated lands under the said ditch and the said defendant bank shall have the right to take and use water for general domestic uses for one family or household and for stock water in connection with said land at all times when water for irrigation purposes is being delivered to the said land and at such times to store in a tank or reservoir such amounts of water as are reasonably necessary for such purposes; and it is further provided that beginning with the farming season of 1934 the said defendant and its successors shall bear and share all costs of construction and maintenance of diversion dam and ditches and perform ditch labor in the proportion that its irrigated acreage bears to the entire irrigated acreage under the said Las Choses Ditch, this provision being in accordance

with stipulation between the plaintiffs and the said defendent filed herein.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the priorities in rights and distribution of the waters of the Bonito River Stream System which have existed in the past between the respective water users taking water from the Bonito River shall not be changed but shall be continued in the same manner as heretofore and that said method of rotation of use, water distribution, and priority is and shall be according to the description thereof as stated in paragraph XXII of the plaintiffs' amended complaint herein and as likewise reported in the State Engineer's Report filed of record herein, which system of rotation and priorities is as follows: the priorities of the rights for the use of the waters of said stream system obtain from the upmost point of diversion downward along said stream so that each claiment of water rights in said stream has priority over all water users diverting water below his, the upper user's, point of diversion, regardless of the time or order in time of the original appropriations of the waters of said stream, and all water users diverting water below are inferior and subsequent in right of diversion respectively to each and all water users diverting water at any point above the diversion point of such lower water user; and that according to the system of priority so obtaining, each water user in turn, or each community ditch in turn, diverts and applies to beneficial uses, all of the available water in said stream required for the full and complete irrigation of the lands of such water users, respectively, or the lands under such ditches respectively, allowing the remainder, if any, of the waters of such stream to flow to the next point of diversion down the stream; and provided that the distribution of water allowed for each such ditch shall be subject to the rules of such community ditch or other ditch or according to the agreements of the several owners of lands under such ditch, or the established customs of such ditch.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that in the irrigation of all of the lands hereinbefore described and for which water rights are established no irrigation shall be done in the hours of darkness unless there shall be an attendant at hand at all times when necessary to see that water so used is properly applied and used without undue waste.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the areas of lands lying under each diversion ditch taking water from the Bonito River are those hereinbefore described and that the total quantity of water which shall be allowed for each ditch, and which shall be appurtenant to the separately described lands under each ditch, shall not exceed a total annual maximum amount for each ditch calculated by allowing three and one-half (3½) acre feet per annum for the total area of the irrigated lands under each such ditch.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the plaintiffs and each of the defendant water-users taking water from the Bonito River shall have water for domestic uses and purposes including stock water, with the right to store in cisterns, tanks or reservoirs such amounts of water as are reasonably necessary for such purposes for each of the homesteads, farms, ranches or places of which the lands for which irrigation rights are hereby established form the whole or a part, which rights shall have the same rotation and priorities as the water rights for irrigated lands to which such domestic water rights shall be appurtenant; and that said domestic water rights shall be used and enjoyed according to the rules and customs of each diversion ditch supplying the same and as herein otherwise expressly provided.

But it is provided that in declaring and establishing the water rights which are and shall be appurtenant to the lands hereinbefore described the court does not adjudicate and determine the respective rights or any rights of the several defendants in and to any of such lands and that the water rights herein declared and established shall

be vested in the lawful or equitable owners of such lands or of interests therein according to the interest which they respectively may have therein, whether known or unknown defendants and whether or not such defendants have been adjudged to be in default herein.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the defendant A. T. Pfingsten is and shall be entitled to water rights from the Bonito River according to the permit of the State Engineer, dated March 10, 1931, Permit No. 1893, which permit is for a ditch with the maximum capacity of eight cubic feet per second, the point of diversion of said ditch being located at a point on the west bank of the Bonito River, whence the southeast corner of Section 19, Township 10 south, Range 17 east bears south 36° 40' east, 4830 feet distant, the diversion dam being a log and brush dam with its top six feet above the bottom of the stream, and the outlet being a 30 inch corrugated iron pipe, with its bottom set one foot above the top of the dam, and allows water to be diverted for use in irrigating 55 acres of land in the northeast quarter of Section 30, and 15 acres of land in the southwest quarter of the northwest quarter of Section 29, Township 10 south, Range 17 east, and it being provided by said permit that the maximum diversion authorized thereby shall not exceed the equivalent of 210 acre feet per annum, and the said permit was granted subject to the provision that it shall not be exercised to the detriment of any persons having prior, valid and existing rights to the waters of said stream system.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the plaintiffs and each and all of the defendants hereinbefore named and designated who are water-users taking water from the Bonito River, shall not make any interference with the flow of any excess or surplus of the water requirements for the water rights of the United States for uses at the Fort Stanton Marine Hospital Reservation and over the water rights hereinbefore declared and established, which such excess would naturally flow and discharge to the Hondo River and make contribution

to any existing water rights of the defendants, to wit, The Bloom Land and Cattle Company, a corporation, The Titsworth Company, a corporation, Lillie Casey, the same person as Lily Casey, R. A. Casey, Tinnie Ramond Clayton, Chon Fresquez, Dave Fresquez, Manuel Fresquez, Rumeldo Fresquez, Joseph Jaffa, Ellen E, Moore, Mary Pruitt, R. B. Pruitt, Jane Ramond, John Ramond, Oney Ramond, misnamed in the complaint as Oney Ramon, Virginia Ramond, Maria Chavez de Baca, the same person as Mrs, M. R. Baca, Porfirio Fresquez, P. R. Fuller, misnamed in the complaint asR. P. Fuller, W. E. Kimbrell, A. L. Massey, the same person as A. L. Massie or Alfred L. Massie, H. A. Massey, Josefita Montoya, Ed Nelson, the same person as E. W. Nelson, Johanna Nelson, John Nelson, Ted Nelson, the same person as A. T. Nelson, Frank Purcells, Eloisa Rodriquez, misnamed in the complaint as Eloisa Rodriguez, Crescencio Salaz, William Sandfer, the same person as W. J. Sandfer, except and unless by virtue of future lawful apporpriations thereof, and provided, that the court does not by this judgment undertake to establish respectively the several interests, if any, of the said Hondo water-users to any such surplus of water discherging from the Bonito River to the Hondo River.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that this judgment is intended to be a complete stream adjudication of the waters of the Bonito River Stream System and that the water rights hereinbefore established are all of the water rights lawfully appropriated, existing and beneficially used out of the waters arising in the said stream system and diverted directly from the Bonito River or from springs along said stream, excepting the present water rights of the United States for uses at the Fort Stanton Marine Hospital Reservation, and that there are no waters arising in the Bonito River Stream System in excess of the water rights aforesaid excepting those which make some cpntribution to the water supply of the water-users of the Hondo River aforesaid.

IT IS FURTHER ORDERED that the plaintiffs shall pay all costs of this action including the costs for hydrographic survey in accordance with plaintiffs stipulations, provided and on the condition that this decree is not appealed from or sought to be set aside and is accepted as final by each defendant herein; otherwise the court shall retain jurisdiction to make further orders with reference to costs as to any defendant or defendants who may seek to set aside or appeal from this judgment.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that each of the defendants herein and his, her or their agents, servants, and employees, is enjoined from making any interference with the water rights herein established for the plaintiffs and for each other defendant herein, respectively, and the plaintiffs are likewise enjoined from interference with the rights established, respectively, for the defendants herein.

IT IS FURTHER ORDERED AND ADJUDGED that the court shall retain jurisdiction of this cause for any further orderd which may become necessary for administrative purposes or to enforce this decree.

Done in open court at ~~Las Cruces~~ ALAMOGORDO, New Mexico, this 26th day of June, 1934.

(Signed) Numa C. Frenger

JUDGE, etc.

Form of Judgment submitted by

E. R. WRIGHT

/s/ Harry H. McElroy
HARRY H. McELROY

Attorneys for Plaintiffs

O.K.

/s/ L. O. Fullen.

/s/ W. A. Dunn

- **La Luz-Fresnal**

- SD1110_etal_license
- SD1115_license
- SD1342_license
- NMOSE license_SD-1122,1383,1411,1412_June 30, 1961
- NMOSE license_SD-1455,1456_Sept. 11, 1963

STATE OF NEW MEXICO
OFFICE OF STATE ENGINEER

LICENSE TO CHANGE POINT OF DIVERSION
AND
TO CHANGE PLACE AND METHOD OF USE

License Nos. 01110, 01111, 01112, 01113, 01114, 01118, 01119, 01120, 01121 and 01122

Refers to Declaration Nos. 01110, 01111, 01112, 01113, 01114, 01118, 01119, 01120, 01121 and 01122

WHEREAS, on the 30th day of March, 1948, the Town of Alamogordo, County of Otero, State of New Mexico, filed in the office of State Engineer of New Mexico, certain Declarations of Old Rights, Changes of Ownership, and Applications to Change Place and Method of Use of a total of 373.2 acre feet per annum of the adjudicated waters of La Luz - Fresnal Stream System, as follows:

Declaration Nos. 01110 and 01111

Declaration filed claiming old rights adjudicated from La Luz Creek as follows:

FORMER OWNER	SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	DECL.NO.
C. H. Springer	NW¼NW¼	29	15 S.	12 E.	4.5	01110
Estate	SW¼NW¼	29	15 S.	12 E.	0.4	01110
Estate	NE¼NE¼	30	15 S.	12 E.	10.0	01110
Estate	SE¼NE¼	30	15 S.	12 E.	3.9	01110
Col Walker	SE¼NW¼	25	15 S.	11 E.	8.0	01111
Col. Walker	SW¼NW¼	25	15 S.	11 E.	4.5	01111
				Total	31.3	

Application filed to Change Place and Method of Use of 93.9 acre feet per annum of water, from irrigation upon said 31.3 acres of land, to municipal uses in the Town of Alamogordo, and to Change Points of Diversion of same to the Town of Alamogordo Pipe Line.

Declaration Nos. 01112 and 01113

Declaration filed claiming old rights adjudicated from La Luz and Maruchi Creek as follows:

FORMER OWNER	SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	DECL.NO.
George Carl	NE¼NW¼	24	15 S.	11 E.	4.1	01112
George Carl	NW¼NW¼	24	15 S.	11 E.	8.8	01112
George Carl	SW¼NE¼	23	15 S.	11 E.	11.6	01112
George Carl	SW¼NE¼	23	15 S.	11 E.	1.5	01112
George Carl	NE¼SE¼	23	15 S.	11 E.	9.1	01112
George Carl	NW¼SE¼	23	15 S.	11 E.	4.6	01112
J. H. Castledine	NW¼NE¼	27	15 S.	11 E.	3.9	01113
J. H. Castledine	NE¼NW¼	27	15 S.	11 E.	8.75	01113
J. H. Castledine	NW¼NW¼	27	15 S.	11 E.	3.25	01113
				Total	55.00	

Application filed to Change Place and Method of Use of 166.8 acre feet of water per annum from irrigation upon said 55.6 acres of land to municipal uses in the Town of Alamogordo, and to Change Points of Diversion of same to the Town of Alamogordo Pipe Line.

Declaration Nos. 01114, 01118, 01119, 01120, and 01121.

Declaration filed claiming old rights adjudicated from La Luz and Maruchi Creek as follows:

FORMER OWNER	SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	DECL.NO.
Isidro Garcia	NW¼SE¼	30	15 S.	11 E.	5.4	01114
Manuel Gutierrez	SW¼NE¼	29	15 S.	11 E.)		01118)
Manuel Gutierrez	SE¼NE¼	29	15 S.	11 E.)	14.6	01118)
Manuel Gutierrez	NE¼NE¼	29	15 S.	11 E.)		01118)
Manuel Gutierrez	SE¼SE¼	20	15 S.	11 E.)		01118)
Gorgonio Torres	W½NE¼SE¼	30	15 S.	11 E.	3.6	01119
Eselo Barela	SE¼NW¼	29	15 S.	11 E.	4.6	01120
Eva Bridgeford	SE¼NE¼	25	15 S.	11 E.	4.7	01121
Eva Bridgeford	SW¼NE¼	25	15 S.	11 E.	4.6	01121
				Total	37.5	

Application filed to Change Place and Method of Use of 112.5 acre feet per annum of water from irrigation upon said 37.5 acres of land to municipal uses in the Town of Alamogordo, and to Change Point of Diversion of said water to the Town of Alamogordo Pipe Line.

Declaration No. 01122

Declaration filed claiming old rights adjudicated from La Luz - Fresnal Stream System to Alamogordo Improvement Company, which rights in Final Decree Cause No. 1037, District Court of Otero County, New Mexico, limited the rate of diversion to a maximum of 16 cubic feet per second of combined natural and flood flow.

Application filed to change point of diversion from heading of La Luz Community Ditch, at a point on La Luz Creek, more fully described hereinafter, to three points on the Town of Alamogordo Pipe Line, also described hereinafter, and

WHEREAS, on the 6th day of April, 1948, the State Engineer of New Mexico issued Notices of Publication, fully describing all proposed changes in points of diversion and places and method of use which were to be effected, and

WHEREAS, on the 29th day of October, 1948, Proof of such publication was filed by the Alamogordo News, and

WHEREAS, on the 29th day of October, 1948, all protests having been disposed of in favor of the applicant, said applications were given due consideration and formally approved by the State Engineer, and

WHEREAS, on the 1st day of May, 1951, the Town of Alamogordo duly filed Proofs of Completion of Works, and Proofs of Application of Water to Beneficial Use, setting forth therein that the contemplated changes in place and method of use and the changes in points of diversion had actually been made in accordance with the applications as approved by the State Engineer, and

WHEREAS, on the 1st day of May, 1951, Report on Final Inspection was filed by William F. Turney, registered professional engineerr and land surveyor in the State of New Mexico, who had been duly authorized by the State Engineer of New Mexico, to make such inspection and report, found that irrigation had been abandoned and that the water was now used for municipal purposes and recommending the issuance of a Certificate of Construction and a License in accordance with the laws of the State of New Mexico, and

WHEREAS, all rights claimed in the declarations cited hereinbefore, were confirmed by Decree of District Court of Otero County, New Mexico (Alamogordo Improvement Company) vs. E. F. Cadwallader et als., Cause No. 1037) or in Amendment to said Decree as ordered December 30, 1918, and

WHEREAS, it appears from the Decree in said Cause No. 1037, that the priority of Declarations numbered 01110, 01111, 01112, 01113, 01114, 01118, 01119, 01120, and 01121 is as of the year 1884, and the priority of Declaration No. 01122 is as of the year 1866.

NOW, THEREFORE, I, John H. Bliss, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the laws of said State, do hereby grant to the Town of Alamogordo, County of Otero, State of New Mexico, this License, with priorities as set forth hereinbefore, to change points of diversion and places and method of use of certain waters of the La Luz - Fresnal Stream System as follows:

Declaration No. 01110; Priority 1884

Change diversion of 56.4 acre feet per annum of La Luz Creek waters, from an earth dam and open ditch at a point on La Luz Creek, in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest Corner of Section 30, said Township and Range, bears N. 69° 12' W., 3414 feet distant, to a concrete box and the Town of Alamogordo Pipe Line at the same identical point of diversion.

Abandon all irrigation uses upon the 18.8 acres of land described hereinbefore under said Declaration No. 01110, and transfer the 56.4 acre feet of irrigation water therefrom to municipal uses in the Town of Alamogordo.

Declaration No. 01111; Priority 1884

Change Point of Diversion of 37.5 acre feet per annum of La Luz Creek waters, from a point on La Luz Creek, in the NW¼NW¼ of Section 30, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest Corner of Section 30, said Township and Range bears N. 32° 17' W., 1506 feet distant, to the Town of Alamogordo Pipe Line, at a point in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, Township 15 South, Range 12 East, bears N. 69° 20' W., 3414 feet distant.

Abandon all irrigation uses upon the 12.5 acres of land described hereinbefore under said Declaration No. 01111 and transfer the 37.5 acre feet of irrigation water therefrom to municipal uses in the Town of Alamogordo.

Declaration No. 01112; Priority 1884

Change Point of Diversion of 119.1 acre feet per annum of Maruchi Creek waters, from a point on Maruchi Creek, in the NE¼SW¼ of Section 24, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest Corner of said Section 24, bears N. 83° 02' W., 3076 feet distant, to the Town of Alamogordo Pipe Line at a point in the SW¼SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest Corner of said Section 23, bears S. 82° 31' W., 552 feet distant.

Abandon all irrigation uses upon the 39.7 acres of land described hereinbefore under Declaration No. 01112, and transfer the 119.1 acre feet of water therefrom to municipal uses in the Town of Alamogordo.

Declaration No. 01113; Priority 1884

Change point of diversion of 47.7 acre feet per annum of Maruchi Creek and La Luz Creek waters, from a point on Maruchi Creek, in the NE¼NE¼ of Section 27, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast Corner of said Section 27 bears N. 59° 16' E., 767 feet distant, and from a point on La Luz Creek in the SW¼NE¼ of Section 26, Township 15 South, Range 11 East, whence the Northeast Corner of said Section 26 bears N. 45° 52' E., 1942 feet distant, to a point on the Town of Alamogordo Pipe Line, in the SW¼SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southeast Corner of said Section 23

bears S. 62° 31' W., 552 feet distant and to a point on Town of Alamogordo Pipe Line in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, Township 15 South, Range 12 East bears N. 69° 20' W., 3414 feet distant.

Abandon all irrigation uses upon the 15.9 acres of land described hereinbefore under Declaration No. 01113 and transfer the 47.7 acre feet of water therefrom to municipal uses in the Town of Alamogordo.

Declaration No. 01114; Priority 1884

Change point of diversion of 16.2 acre feet per annum of La Luz Creek waters, from a point on La Luz Creek, in the SW¼NE¼ of Section 29, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast Corner of said Section 29 bears N. 44° 40' E., 3619 feet distant to a point on Town of Alamogordo Pipe Line, in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East whence the Northwest Corner of Section 30, said Township and Range bears N. 69° 20' W., 3414 feet distant, and to a point on Town of Alamogordo Pipe Line, in the SW¼SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest Corner of said Section 23, bears S. 82° 31' W., 552 feet distant.

Abandon all irrigation uses upon the 5.4 acres of land described hereinbefore under Declaration No. 01114 and transfer the 16.2 acre feet of water therefrom to municipal uses in the Town of Alamogordo.

Declaration No. 01118; Priority 1884

Change point of diversion of 43.8 acre feet per annum of La Luz Creek waters from a point on La Luz Creek, in the NE¼NE¼ of Section 28, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast Corner of said Section 28 bears N. 66° 08' E., 614 feet distant to a point on Town of Alamogordo Pipe Line, in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, said Township and Range bears N. 69° 20' W., 3414 feet distant, and to a point on Town of Alamogordo Pipe Line, in the SW¼SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest Corner of said Section 23, bears S. 82° 31' W., 551 feet distant.

Abandon all irrigation uses upon 14.6 acres of land within the 27. acres described heretofore under Declaration No. 01118, and transfer said 43.8 acre feet of water to municipal uses within the Town of Alamogordo.

Declaration No. 01119; Priority 1884

Change Point of Diversion of 10.8 acre feet per annum of La Luz Creek waters, from a point on La Luz Creek in the SW¼NE¼ of Section 29, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest Corner of said Section 29 bears N. 44° 40' E., 3619 feet distant to a point of Town of Alamogordo Pipe Line, in the NE¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, said Township and Range bears N. 69° 20' W., 3414 feet distant.

Abandon all irrigation uses upon the 3.6 acres of land described heretofore under Declaration No. 01119 and transfer said 10.8 acre feet of water to municipal uses within the Town of Alamogordo.

Declaration No. 01120; Priority 1884

Change Point of Diversion of 13.8 acre feet per annum of La Luz Creek waters from a point on La Luz Creek, in the NE¼NE¼ of Section 28, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast Corner of said Section 28 bears N. 66° 08' E., 814 feet distant, to a point on the Town of Alamogordo Pipe Line, in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, said Township and Range bears N. 69° 20' W., 3414 feet distant.

Abandon all irrigation uses upon the 4.6 acres of land described heretofore under Declaration No. 01120 and transfer said 13.8 acre feet of water to municipal uses within the Town of Alamogordo.

Declaration No. 01121; Priority 1884

Change point of diversion of 27.9 acre feet per annum of La Luz Creek waters from a point on La Luz Creek in the NW¼NW¼ of Section 30, Township 15 South, Range 12 East, whence the Northwest Corner of said Section 30 bears N. 32°17' W., 1506 feet distant, to a point on Alamogordo Pipe Line, in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, said Township and Range, bears N. 69° 20' W., 3414 feet distant.

Abandon all irrigation uses upon the 9.3 acres of land described heretofore under Declaration No. 01121 and transfer said 27.9 acre feet of water to municipal uses within the Town of Alamogordo.

Declaration No. 01122; Priority 1866

Change Point of Diversion of 16 cubic feet per second of combined natural and flood flows, of La Luz-Fresnal Stream System, used for municipal purposes from point of diversion of La Luz Community Ditch on La Luz Creek, in the NW¼NW¼ of Section 30, Township 15 South, Range 30, bears N. 25° 20' W., 1303 feet distant, to the Town of Alamogordo Pipe Line, Fresnal Creek Section, at a point on Fresnal Creek, in the NW¼NE¼ of Section 32, Township 15 South, Range 11 East, whence the Northwest Corner of said Section 32, bears N. 25° 20' W., 1303 feet distant, and to Town of Alamogordo Pipe Line, Maruchi (Calichar) Creek Section, at a point on Maruchi (Calichar) Creek, in the SW¼SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest Corner of said Section 23, bears S. 82° 31' W., 552 feet distant, and to a point of Town of Alamogordo Pipe Line, La Luz Creek Section, on La Luz Creek, at a point on La Luz Creek in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest Corner of Section 30, said Township and Range bears N. 69° 20' W., 3114 feet distant.

Same to be used as above stated and can be changed only as provided by law and further provided that this License shall not be exercised to the detriment of any other persons having prior valid and existing rights to the use of the waters of said stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 5th day of June, 1951.

John H. Bliss
State Engineer

By: Arthur F. Brown
Assistant State Engineer

STATE OF NEW MEXICO)
)
OFFICE OF STATE ENGINEER)

LICENSE TO CHANGE POINT OF DIVERSION
AND
TO CHANGE PLACE AND METHOD OF USE

(Declaration No. 0919
(Declaration No. 01115
License No. 01115 Amended and 0919 Refers to (Declaration No. 01115
Amended

WHEREAS, on the 25th day of April, 1941, the Aguadero Corporation, of Alamogordo, County of Otero, State of New Mexico, filed in the Office of State Engineer of New Mexico, a Declaration of Old Water Right Numbered 0919, wherein they claimed priority antedating the year of 1907, for the appropriation of La Luz Creek waters, and further, said same was decreed in Cause No. 1037, Otero County District Court, and used for the irrigation of 24 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
* NW¼ NW¼	27	15 S.	11 E.	5
* NE¼ NE¼	28	15 S.	11 E.	7
NE¼ SW¼	29	15 S.	11 E.	10
NW¼ SW¼	29	15 S.	11 E.	2
				24

* Later claimed again in Declaration No. 01115

and

WHEREAS, on the 30th day of March, 1948, the City of Alamogordo, County of Otero, State of New Mexico, filed in the Office of State Engineer of New Mexico, a Declaration of Old Water Right Numbered 01115 wherein they claimed priority before 19 March, 1907, for the appropriation of La Luz Creek Drainage Area Waters, to the extent of 55.2 acre feet per annum for the irrigation of 18.4 acres of land with adjudicated rights in Cause No. 1037, District Court in and for Otero County New Mexico, said lands being described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
SE¼ SE¼	21	15 S.	11 E.	1.3
NE¼ NE¼	28	15 S.	11 E.	9.2
NW¼ NW¼	27	15 S.	11 E.	7.9
				18.4

and

WHEREAS, on the 30th day of March, 1948, said City of Alamogordo made application to the State Engineer of New Mexico, for a Permit to Change Point of Diversion and Place and Method of Use of said 55.2 acre feet of water all as more fully described hereinafter, and

WHEREAS, on the 6th day of April, 1948, Notice of Publication was ordered by the State Engineer and Proof of said Publication was filed on 29 October, 1948, by the Alamogordo News, and

WHEREAS, on the 6th day of June, 1948, said applications were protested by Donald Osborne Bonnell, and

WHEREAS, on the 12th day of April, 1956, there was held in the City of Alamogordo, a meeting of representatives of the City of Alamogordo, Donald Osborne Bonnell with his attorney and engineer and representatives of the State Engineer, for the purpose of arriving at an understanding whereby the protested Applications Numbered 01115, 01116, 01117, 01342, 01343, 01344, 01345 and 01346, might be acted on in a manner agreeable to all parties concerned, and

WHEREAS, on the 11th day of May, 1956, there was agreed to and executed, a "Stipulation and Settlement," between the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, by his Attorney George L. Zimmerman, Esq., subject to the approval of the State Engineer of New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 11th day of June, 1956, a meeting was held in the City of Santa Fe, Office of State Engineer, between representatives of the City of Alamogordo, Donald Osborne Bonnell, and State Engineer, at which time an amendment to "Stipulation and Settlement" was drawn and executed for the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, subject to the approval of the State Engineer of

New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 23rd day of October, 1956, there was drawn and executed a second Amended Stipulation, between the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, subject to the approval of the State Engineer of New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 22nd day of May, 1956, the City of Alamogordo withdrew its Applications and Declarations Numbered 01116 and 01117 and its Declaration No. 01115, and

WHEREAS, on the 1st day of June, 1956, the City of Alamogordo filed Declaration No. 01115 Amended and 0919, claiming priority as of the year 1884 for the appropriation of 36 acre feet per annum of La Luz Creek waters used for the irrigation of 12 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
NW¼ NW¼	27	15 S.	11 E.	5
NE¼ NE¼	28	15 S.	11 E.	7
				12

and

WHEREAS, on the 31st day of January, 1957, all protests having been disposed of, Applications Numbered 01115 Amended and 0919 were approved for the Change in Point of Diversion and Place and Method of Use of 36 acre feet of water per annum, subject to the terms in the order of approval, and

WHEREAS, on the 25th day of June, 1957, Proof of Completion of Works and Proof of Application of Water to Beneficial Use were duly filed by the owner and holder of said Permit Nos. 01115 Amended and 0919, and

WHEREAS, on the 25th day of June, 1957, Report on Final Inspection was filed by William F. Turney, registered professional engineer and land surveyor in the State of New Mexico, who had been duly authorized by the State Engineer of New Mexico, to make such inspection and report, recommending the issuance

of a Certificate of Construction and a License in accordance with the Laws of the State of New Mexico.

NOW, THEREFORE, I, S. E. Reynolds, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the Laws of said State, do hereby grant to the City of Alamogordo, County of Otero, State of New Mexico, this License No. 01115 Amended and 0919 to Change Point of Diversion of 36 acre feet per annum of La Luz Creek waters from a point on La Luz Creek in the SW¼ NE¼ of Section 26, Township 15 South, Range 11 East, N.M.P.M., whence Northeast corner of said Section 26, bears North 45° 52' East, 1942 feet distant, to a point on La Luz Creek in the NW¼ NW¼ of Section 29, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of Section 30, said Township and Range, bears North 69° 20' West, 3414 feet distant, and to a point on Maruchi (Colichar) Creek in the SW¼ SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest corner of said Section 23, bears South 82° 31' West, 552 feet distant.

License is also granted to Change Place and Method of Use of 36 acre feet per annum of La Luz Creek waters from irrigation purposes on 12 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
NW¼ NW¼	27	15 S.	11 E.	5
NE¼ NE¼	28	15 S.	11 E.	7
				12

to municipal uses of the City of Alamogordo, County of Otero, State of New Mexico, same to be used as above stated and can be changed only as provided by law, and further provided that this license be not exercised to the detriment of any other persons having prior valid and existing rights to the use of the waters of said stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 16th day of December, 1960.

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

STATE OF NEW MEXICO)
)
OFFICE OF STATE ENGINEER)

LICENSE TO CHANGE POINT OF DIVERSION
AND
LICENSE TO CHANGE PLACE AND PURPOSE OF USE

License No. 01342, 01343, 01344, 01345 and 01346

Refers to Declaration Nos. 01342, 01343, 01344, 01345 and 01346

WHEREAS, on the 20th day of July, 1953, the City of Alamogordo, County of Otero, State of New Mexico, filed in the Office of the State Engineer of New Mexico, certain Declarations of Old Water Rights, Changes of Ownership, and Applications to Change Points of Diversion and Place and Purpose of Use of a total of 186.9 acre feet per annum of the adjudicated waters of the La Luz Fresnal Stream System as follows:

Declaration No. 01342

Declaration filed claimimg old rights adjudicated from Maruchi (Colichar) Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMER OWNER	DECL.NO.
SW¼SW¼	23	15 S.	11 E.	4.8	Frank Kearney	01342
SE¼SW¼	23	15 S.	11 E.	8.8	Frank Kearney	01342
			Total	13.6		

Application filed to Change Place and Purpose of Use of 40.8 acre feet per annum of Maruchi (Colichar) Creek water, from irrigation upon said 13.6 acres of land, to municipal uses in the City of Alamogordo, and to Change Point of Diversion of said 40.8 acre feet of water per annum to the City of Alamogordo Pipeline.

Declaration Nos. 01343 and 01346

Declarations filed claiming old rights adjudicated from La Luz and Maruchi (Colichar) Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMER OWNER	DECL.NO.
NE¼NE¼	27	15 S.	11 E.	5.3	Seferino Duran	01343
NW¼NW¼	26	15 S.	11 E.	10.9	Seferino Duran	01343
NE¼NW¼	26	15 S.	11 E.	13.5	Atiliano Gallegos	01346
			Total	29.7		

Applications filed to Change Place and Purpose of Use of 89.1 acre feet per annum of La Luz and Maruchi (Colichar) Creek water, from irrigation upon said 29.7 acres of land, to municipal uses in the City of Alamogordo, and to Change Points of Diversion of said 89.1 acre feet of water per annum to the City of Alamogordo Pipeline.

Declaration Nos. 01344 and 01345

Declarations filed claiming old rights adjudicated from La Luz Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMER OWNER	DECL.NO.
NE¼NE¼	26	15 S.	11 E.	5.0	Walter Nichols	01344
SE¼NE¼	26	15 S.	11 E.	2.2	Walter Nichols	01344
NW¼NE¼	26	15 S.	11 E.	10.8	C. O. Walker	01345
SW¼NE¼	26	15 S.	11 E.	1.0	C. O. Walker	01345
			Total	19.0		

Applications filed to Change Place and Purpose of Use of 57.0 acre feet per annum of La Luz Creek water, from irrigation upon said 19.0 acres of land, to municipal uses in the City of Alamogordo, and to Change Points of Diversion of said 57.0 acre feet of water per annum to the City of Alamogordo Pipeline, and

WHEREAS, on the 10th day of May, 1954, the State Engineer of New Mexico, issued Notice of Publication fully describing all proposed changes in points of diversion and places and purpose of use which were to be effected, and

WHEREAS, on the 15th day of December, 1954, Donald Osborne Bonnell filed protests to the granting of the City of Alamogordo's proposed changes under Applications Numbered 01342, 01343, 01344, 01345 and 01346, and

WHEREAS, on the 4th day of January, 1955, Proof of such publication was filed by the Alamogordo Daily News, and

WHEREAS, on the 12th day of April, 1956, there was held in the City of Alamogordo, a meeting of representatives of the City of Alamogordo, Donald Osborne Bonnell with his attorney and engineer and representatives of the State Engineer, for the purpose of arriving at an understanding whereby the protested Applications Numbered 01342, 01343, 01344, 01345 and 01346, might be acted on in a manner agreeable to all parties concerned, and

WHEREAS, on the 11th day of May, 1956, there was agreed to and executed, a "Stipulation and Settlement," between the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, by his Attorney George L. Zimmerman, Esq., subject to the approval of the State Engineer of New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 11th day of June, 1956, a meeting was held in the City of Santa Fe, Office of the State Engineer, between representatives of the City of Alamogordo, Donald Osborne Bonnell, and State Engineer, at which time an amendment to "Stipulation and Settlement" was drawn and executed for the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, subject to the approval of the State Engineer of New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 11th day of June, 1956, the City of Alamogordo made Application to the State Engineer of New Mexico, under file No. 01342, for a permit to include additional points of diversion under their Maruchi (Colichar) Creek Municipal Pipeline, and

WHEREAS, on the 13th day of August, 1956, Notice of Publication on the additional Points of Diversion was issued by the State Engineer of New Mexico, and Proof of such Publication was filed on the 10th day of September, 1956, by the Alamogordo Daily News, and

WHEREAS, on the 23rd day of October, 1956, there was drawn and executed a second Amended Stipulation, between the City of Alamogordo, by its Attorney Daniel R. Brenton, Esq., and Donald Osborne Bonnell, Protestant, subject to the approval of the State Engineer of New Mexico, said document is a part of the permanent record of the State Engineer, and

WHEREAS, on the 31st day of January, 1957, the State Engineer issued "Findings and Order" wherein proposed changes in Points of Diversion and Place and Purpose of Use under Applications Numbered 01342, 01343, 01344, 01345 and 01346 were approved, and

WHEREAS, on the 8th day of July, 1957, the State Engineer of New Mexico, did approve Application No. 01342, to include additional points of diversion under their Maruchi (Colichar) Creek Municipal Pipeline, and

WHEREAS, the owner and holder of said Permits Numbered 01342, 01343, 01344, 01345 and 01346, has filed Proof of Completion of Works and Proof of Application of Water to Beneficial Use, and

WHEREAS, Report on Final Inspection has been filed by William F.

Turney, registered professional engineer and land surveyor in the State of New Mexico, who had been duly authorized to make such inspection and report, recommending the issuance of a Certificate and License in accordance with the Laws of the State of New Mexico, and

WHEREAS, all rights in the declarations cited hereinbefore were confirmed by Decree of the District Court of Otero County, New Mexico, (Alamogordo Improvement Company vs. E. F. Cadwallader, et als., Cause No. 1037 or in Amendment to said Decree as ordered December 30, 1918), and

WHEREAS, it appears from the Decree in said Cause No. 1037, that the priority of Declarations Numbered 01342, 01343, 01344, 01345 and 01346, is as of the year 1884.

NOW, THEREFORE, I, S. E. Reynolds, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the Laws of said State, do hereby grant to the City of Alamogordo, County of Otero, State of New Mexico, this License with a priority as of the year 1884, to change points of diversion and places and purpose of use of certain waters of the La Luz-Fresnal Stream System as follows:

Declaration No. 01342

Change point of diversion of the 40.8 acre feet per annum of Maruchi (Colichar) Creek water from a point on Maruchi (Colichar) Creek located in the NW¼ NE¼ Section 24, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest corner of said Section 24, bears North 83° 02' West, 3076 feet distant, to the Alamogordo Municipal Pipeline, diversions located on Maruchi (Colichar) Creek described as follows:

Diversion No. 1 located at a point in the NE¼ NE¼ Section 24, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast corner of said Section 24, bears North 56° 00' East, 650 feet distant;

Diversion No. 2 located at a point in the NW¼ NE¼ Section 24, Township 15 South, Range 11 East, N.M.P.M., whence the Northeast corner of said Section 24, bears North 89° 51' East, 1980 feet distant;

Diversion No. 3 located at a point in the SE¼ SW¼ Section 23, Township 15 South, Range 11 East, N.M.P.M., whence the Southeast corner of the SE¼ SW¼ of said Section 23, bears South 0° 02' East, 600.5 feet distant;

Diversion No. 4 located at a point in the SW¼ SW¼ Section 23,

Township 15 South, Range 11 East, N.M.P.M., whence the Southwest corner of said Section 23, bears South 82° 31' West, 552 feet distant;

Abandon all irrigation uses upon the 13.6 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
SW¼ SW¼	23	15 S.	11 E.	4.8
SE¼ SW¼	23	15 S.	11 E.	8.8
			Total	13.6

and transfer the 40.8 acre feet of water per annum to municipal uses in the City of Alamogordo.

Declaration No. 01343

Change points of diversion of the 48.6 acre feet per annum of La Luz and Maruchi (Colichar) Creek waters from a point on Maruchi (Colichar) Creek located in the NW¼ NE¼ Section 24, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest corner of said Section 24, bears North 83° 02' West, 3076 feet distant, and from a point on La Luz Creek located in the NW¼ NE¼ Section 30, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of said Section 30, bears North 32° 17' West, 1506 feet distant, to the four diversions units located on Maruchi (Colichar) Creek and described heretofore under License No. 01342, and to the Alamogordo Municipal Pipeline diversions on La Luz Creek described as follows:

Diversion No. 1 located at a point in the NW¼ NW¼ Section 29, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of Section 30, said Township and Range, bears North 69° 20' West, 3414 feet distant;

Diversion No. 2 located at a point in the NW¼ NW¼ Section 29, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of said Section 29, bears North 62° 15' West, 830 feet distant;

Abandon all irrigation uses upon the 16.2 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
NE¼ NE¼	27	15 S.	11 E.	5.3
NW¼ NW¼	26	15 S.	11 E.	10.9
			Total	16.2

and transfer the 48.6 acre feet of water per annum to municipal uses in the City of Alamogordo.

Declaration No. 01344

Change point of diversion of the 21.6 acre feet per annum of La Luz Creek

water from a point on La Luz Creek located in the NW¼ NE¼ Section 30, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of said Section 30, bears North 32° 17' West,1506 feet distant, to the two diversion units located on La Luz Creek and described heretofore under License No. 01343;

Abandon all irrigation uses upon the 7.2 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
NE¼ NE¼	26	15 S.	11 E.	5.0
SE¼ NE¼	26	15 S.	11 E.	2.2
			Total	7.2

and transfer the 21.6 acre feet of water per annum to municipal uses in the City of Alamogordo.

Declaration No. 01345

Change point of diversion of the 35.4 acre feet per annum of La Luz Creek water from a point on La Luz Creek located in the NW¼ NE¼ Section 30, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of said Section 30, bears North 32° 17' West, 1506 feet distant, to the two diversion units located on La Luz Creek and described heretofore under License No. 01343;

Abandon all irrigation uses upon 11.8 acres of land described as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES
NW¼ NE¼	26	15 S.	11 E.	10.8
SW¼ NE¼	26	15 S.	11 E.	1.0
			Total	11.8

and transfer the 35.4 acre feet of water per annum to minicipal uses in the City of Alamogordo.

Declaration No. 01346

Change points of diversion of the 40.5 acre feet per annum of La Luz and Maruchi (Colichar) Creek waters from a point on Maruchi (Colichar) Creek located in the NW¼ NE¼ Section 24, Township 15 South, Range 11 East, N.M. P.M., whence the Northwest corner of said Section 24, bears North 83° 02' West, 3076 feet distant, and from points on La Luz Creek located in the NW¼ NE¼ Section 30, Township 15 South, Range 12 East, N.M.P.M., whence the Northwest corner of said Section 30, bears North 32° 17' West, 1506 feet distant, the NE¼ NW¼ Section 26, Township 15 South, Range 11 East,

N.M.P.M., whence the North quarter corner of said Section 26, bears North 35° 30' East, 950 feet distant, and in the NW¼ NE¼ Section 26, Township 15 South, Range 11 East, N.M.P.M., whence the North quarter corner of said Section 26, bears North 05° 00' West, 470 feet distant, to the four diversion units located on Maruchi (Colichar) Creek described heretofore under License No. 01342 and to the two diversion units located on La Luz Creek described heretofore under License No. 01343;

Abandon all irrigation uses upon the 13.5 acres of land described as part of the NE¼ NW¼ Section 26, Township 15 South, Range 11 East, N.M.P.M., and transfer the 40.5 acre feet of water per annum to municipal uses in the City of Alamogordo.

Same to be used as above stated and can be changed only as provided by law and further provided that this license be not exercised to the detriment of any other parties having prior valid and existing rights to the use of the waters of said stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 16th day of December, 1960.

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

STATE OF NEW MEXICO)
)
OFFICE OF STATE ENGINEER)

LICENSE TO CHANGE POINTS OF DIVERSION,
ADD ADDITIONAL POINTS OF DIVERSION
AND
CHANGE PLACE AND PURPOSE OF USE

License No. 01122,
01383, 01411 and 01412

Refers to Declaration Nos.
01122, 01383, 01411 and 01412

WHEREAS, on the 5th day of June, 1951, the State Engineer issued License No.01122, with a priority as of 1366, to change point of diversion of 16 cubic feet per second of combined natural and flood flows, of La Luz-Fresnal Stream System, used for municipal purposes from point of diversion located on La Luz Community Ditch on La Luz Creek, in the NW¼NW¼ of Section 30, Township 15 South, Range 11 East, N. M. P. M.,at a point whence the Southwest corner of said Section 30, bears South 26° 05' West, 3352 feet distant, to the Town of Alamogordo Pipeline Fresnal Creek Section, at a point on Fresnal Creek, in the NW¼NW¼ of Section 32, Township 15 South, Range 11 East, whence the Northwest corner of said Section 32, bears North 25° 20' West, 1303 feet distant, and to Town of Alamogordo Pipeline, Maruchi (Colichar) Creek Section at a point on Maruchi (Colichar) Creek, in the SW¼ SW¼ of Section 23, Township 15 South, Range 11 East, whence the Southwest corner of said Section 23, bears South 82° 31' West, 552 feet distant, and to a point of Town of Alamogordo Pipeline, La Luz Creek Section, on La Luz Creek, at a point on La Luz Creek in the NW¼NW¼ of Section 29, Township 15 South, Range 12 East, whence the Northwest corner of Section 30, said Township and Range bears North 69° 20' West, 3414 feet distant, and

WHEREAS, on the 20th day of June, 1956, after notice pursuant to state, the State Engineer did approve Application No. 01122, to extend the Fresnal Creek Unit of the City of Alamogordo Water Supply System and add three new diversion points or headings on Fresnal Creek for the purpose of diverting the waters of the

Fresnal Stream System as covered by License No. 01122, issued the 5th day of June, 1951, and

WHEREAS, on the 20th day of June, 1956, the City of Alamogordo, County of Otero, State of New Mexico, filed in the office of the State Engineer certain Declarations of Old Rights, Changes of Ownership, and Applications to Change Points of Diversion and Place and Purpose of Use of a total of 34.5 acre feet per annum of the adjudicated waters of the Fresnal Stream System as follows:

Declaration No. 01383

Declaration filed claiming old right adjudicated from Fresnal Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMER OWNER
Lot 6, South 330 feet of Lot 4 & South 660 feet of Lot 3	1	16 S.	10 E.	4.0	F.M. Hardcastle

Application filed to Change Place and Purpose of Use of 12.0 acre feet per annum of Fresnal Creek water, from irrigation purposes upon said 4.0 acres of land, to municipal uses by the City of Alamogordo, and to Change Point of Diversion of said 12.0 acre feet of water per annum to the City of Alamogordo Pipeline.

Declaration No. 01411

Declaration filed claiming old rights adjudicated from Fresnal Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMAL OWNER
Lots 3, 4, 6	1	16 S.	10 E.	7.5	F.M. Hardcastle

Application filed to Change Place and Purpose of Use of 22.5 acre feet per annum of Fresnal Creek water, from irrigation purposes upon said 7.5 acres of land, to municipal uses by the City of Alamogordo, and to Change Point of Diversion of said 22.5 acre feet of water per annum to the City of Alamogordo Pipeline, and

WHEREAS, on the 27th day of June, 1956, the City of Alamogordo filed in the Office of the State Engineer a Declaration of Old Right, Change of Ownership, and Applications to Change Point of Diversion and Place and Purpose of Use of a total of 24.3 acre

feet per annum of the adjudicated waters of the Fresnal Stream System as follows:

Declaration No. 01412

Declaration filed claiming old rights adjudicated from Fresnal Creek as follows:

SUBDIVISION	SECTION	TOWNSHIP	RANGE	ACRES	FORMER OWNER
Lots 2, 7, 8, 9	1	16 S.	10 E.	8.1	J. W. Morrison

Application filed to Change Place and Purpose of Use of 24.3 acre feet per annum of Fresnal Creek water, from irrigation purposes upon said 8.1 acres of land, to municipal uses by the City of Alamogordo and to Change Point of Diversion of said 24.3 acre feet of water per annum to the City of Alamogordo Pipeline, and

WHEREAS, on the 31st day of January, 1957, after Notice pursuant to statute, the State Engineer did approve Applications No. 01383, 01411 and 01412 to Change Points of Diversion and Place and Purpose of Use as outlined in said applications, and

WHEREAS, on the 29th day of April, 1958, after notice pursuant to statute, the State Engineer did approve Application No. 01122, 01383, 01411 and 01412, to include another heading on Fresnal Creek known as Box Canyon Diversion for the purpose of diverting the waters of the Fresnal Stream System into municipal water supply pipeline system, and

WHEREAS, Proof of Completion of Works and Proof of Application of Water to Beneficial Use have been filed in the office of the State Engineer, and

WHEREAS, all rights in the declarations cited hereinbefore were confirmed by Decree of the District Court of Otero County, New Mexico, (Alamogordo Improvement Company vs. E. F. Calwallader, et als., Cause No. 1037 or in Amendment to said Decree as ordered December 30, 1818).

NOW, THEREFORE, I, S. E. Reynolds, State Engineer of New Mexico, by virtue of the authority vested in me by the Laws of said State, do hereby grant to the City of Alamogordo, County of Otero, State of New Mexico, this License with a priority as set forth in Decree

No. 1037, being prior to March 19, 1907, to change points of diversion, add additional points of diversion and change place and purpose of use of certain waters of the Fresnal Stream System as follows:

Declaration No. 01122

Authorize the 16 cubic feet per second of combined natural and flood flows, of La Luz-Fresnal Stream System, used for municipal purposes, to be diverted into the Alamogordo Municipal Pipeline at the diversion points located on Fresnal Creek as follows:

Diversion No. 1 (Near Pottery Works), located at a point in the NW¼ NW¼ Section 32, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest corner of said Section 32, bears North 25° 20' West, 1303 feet distant;

Diversion No. 2 (Walker Intake), located at a point in the SE¼ NW¼ Section 32, Township 15 South, Range 11 East, N.M.P.M., whence the Northwest corner of said Section 32, bears North 32° 00' West, 2525 feet distant;

Diversion No. 3 (Varbel Intake), located at a point in the NW¼ NW¼ Section 1, Township 16 South, Range 10 East, N. M.P.M., whence the Southwest corner of Section 33, Township 15 South, Range 11 East, bears North 53° 35' West, 1270 feet distant;

Diversion No. 4 (Box Canyon Intake), located at a point in the SW¼ NW¼ Section 6, Township 16 South, Range 11 East, N.M.P.M., whence the Southwest corner of the SW¼ NW¼ of said Section 6, bears South 2° 02' West, 2640 feet distant;

Diversion No. 5 (High Rolls Intake), located at a point in the SE¼ NW¼ Section 5, Township 16 South, Range 11 East, N.M.P.M., whence the Southeast corner of the NE¼ of said Section 5, bears South 55° 33' East, 3332.5 feet distant.

Declaration No. 01383 and 01411

Change point of diversion of the 34.5 acre feet per annum of Fresnal Creek water, from a point on Fresnal Creek located in the NW¼ NE¼ Section 1, Township 16 South, Range 10 East, N.M.P.M., whence the Northwest corner of the NE¼ of said Section 1, bears North 10° 45' West, 2150 feet distant, to the five intake diversion units located on Fresnal Creek and described heretofore under

License No. 01122;

Abandon all irrigation uses upon 11.5 acres of land located in lots 3, 4 and 6, Section 1, Township 16 South, Range 10 East, and transfer the 34.5 acre feet of water per annum to municipal uses by the City of Alamogordo.

Declaration No. 01412

Change point of diversion of the 24.3 acre feet of water per annum of Fresnal Creek water, from a point in the SW¼ NW¼ Section 6, Township 16 South, Range 11 East, N.M.P.M., whence the Southwest corner of the NW¼ of said Section 6, bears South 02° 02' West, 2640.0 feet distant, to the five intake diversion units located on Fresnal Creek and described heretofore under License No. 01122;

Abandon all irrigation uses upon 8.1 acres of land located in Lots 2, 7, 8 and 9, Section 1, Township 16 South, Range 10 East, and transfer the 24.3 acre feet of water per annum to municipal uses by the City of Alamogordo.

Same to be used as above stated and can be changed only as provided by law and further provided that this license be not exercised to the detriment of any other persons having prior valid and existing rights to the use of the waters of said stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 30th day of June, 1961.

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

STATE OF NEW MEXICO)
)
OFFICE OF STATE ENGINEER)

LICENSE TO CHANGE POINT OF DIVERSION,
PLACE AND PURPOSE OF USE

License No. 01455 and 01456

Refers to Declaration and Permit Nos. 01455 and 01456

WHEREAS, on the 3rd day of February, 1958, the City of Alamogordo, County of Otero, State of New Mexico, filed in the Office of the State Engineer, Declarations of Ownership of Water Right, numbered 01455 and 01456, wherein they claimed the following:

Declaration No. 01455

The right to divert from the North Fork of Fresnal Creek, tributary of Fresnal Stream System, within the Tularosa Basin, through the North and South Ditch Systems, 62.1 acre feet of water per annum having a priority prior to April 21, 1901 and 9.6 acre feet of water per annum having a priority after April 21, 1901, used for irrigation purposes upon 23.9 acres of land, water rights claimed as being a part of those adjudicated to George Thompson and Mary Grant in Cause No. 1037, styled "Alamogordo Improvement Company, Plaintiff, vs E. F. Cadwallader, ET ALS., Defendants", entered the 23rd day of July, 1918 by the District Court of Otero County, the acreage being described as follows:

Subdivision	Section	Twp.	Rge.	Acres	Priority	Decree Owner
Pt. of Lots 9 & 10	4	16S.	11E.	8.0	(1st)	George Thompson
Pt. of Lots 9 & 10	4	16S.	11E.	3.2	(2nd)	George Thompson
Pt. of lots 9 & 10	4	16S.	11 E.	12.7	(1st)	Mary Grant
		Sub-Total		20.7	(1st)	
				3.2	(2nd)	
			Total	23.9		

This claim representing the right to divert from the North Ditch for 25 hours 56 minutes starting at 4:23 p.m. Monday and ending at 6:19 p.m. Tuesday of each week and to divert from the South Ditch for 37 hours 39 minutes starting at 3:21 p.m. Saturday and ending at 5 a.m. Monday of each week.

Declaration No. 01456

The right to divert from the North Fork of Fresnal Creek, trib-

tary of Fresnal Stream System, within the Tularosa Basin through the W. M. Snow Ditch, 58.2 acre feet of water per annum having a priority prior to April 21, 1901, used for irrigation purposes upon 19.4 acres of land claimed as being adjudicated to W. M. Snow in Cause 1037 described under Declaration 01455, the acreage being described as follows:

Subdivision	Section	Township	Range	Acres
S. pt. SW¼SE¼	32	15 S.	12 E.	3.5
N. pt. Lot 1	3	16 S.	11 E.	4.6
N. pt. Lot 4	2	16 S.	11 E.	8.3
N. pt. Lot 3	2	16 S.	11 E.	3.0
			Total	19.4

; and

WHEREAS, on the 10th day of March, 1960, after notice pursuant to statute, the State Engineer did approve Application No. 01455, to change point of diversion, place and purpose of use of the 62.1 acre feet of 1st priority water per annum claimed under Declaration No. 01455, from irrigation purposes upon the 20.7 acres of land, to municipal uses by the City of Alamogordo, and did approve Application No. 01456, to change place and purpose of use of the 58.2 acre feet of water per annum claimed under Declaration No. 01456, from irrigation purposes upon the 19.4 acres of land, to municipal uses by the City of Alamogordo, both applications being approved in accordance with terms set forth in the "Stipulation and Settlement" executed April 13, 1959 between th City of Alamogordo, by its Mayor, Chas. Sutton and its Attorney Daniel R. Brenton, Esq. and Jon T. Cadwallader, and his Attorney J. Benson, Esq. and H. B. Flores, C. C. Braunstein and Jon Cadwallader, Water Commissioners of the North Fork of the Fresnal, this Stipulation and Settlement being as follows:

"BEFORE THE STATE ENGINEER OF THE STATE OF NEW MEXICO
SANTA FE, NEW MEXICO

Re: Applications of the City of Alamogordo, a municipal corporation, for Permits to Change the Point of Diversion and Place and Method of Use of the Surface Waters Acquired from T. F. Smith, being Application No. 01456, and the Surface Waters Acquired from G. E. Robertson, being Application No. 01455:

STIPULATION AND SETTLEMENT

IT IS HEREBY STIPULATED by and between the City of Alamogordo,

applicant, and J. T. Cadwallader, protestant, for himself and others similarly situated, as follows:

1. The City of Alamogordo agrees in making such change of point of diversion, place and manner of use of the waters embraced in such applications to divert the waters from the T. F. Smith property into a steel pipeline, 10" in diameter, to be constructed from the Smith spring to the City's present intake at High Rolls; that the pipeline diverting the Smith spring located on the Smith property, referred to on the Hydrographic Map, Sheet No. 10, of Mountain Park, as W. M. Snow property, shall be constructed aside the present North Fork of the Fresnal Irrigation Ditch, down to the City's intake at High Rolls, as nearly as feasible. A sketch showing the approximate location of such pipeline is attached hereto and made a part of this Stipulation.

2. That the pipeline shall contain valves permitting each water user now diverting water from the irrigation ditch to divert water from such pipeline into his irrigation ditch. That the City shall, insofar as is economically feasible, pick up adjacent spring waters and divert such waters into its pipeline for the benefit of all water users and keep said pipeline in good order and repair, and all water developed shall become a part of the system.

3. The City further agrees to construct a tank in the upper reaches of the North Fork of the Fresnal of sufficient size to impound domestic water for itself and for the use of all persons owning a domestic water right on the North Fork of the Fresnal. The City further agrees to construct from such domestic water reservoir a pipeline of adequate dimensions to carry the water and provide sufficient pressure for domestic use, along the irrigation line to its Karr Canyon intake, which may be tapped by those who are entitled to domestic water and to supply a meter for the recording of the domestic water used by each of the persons entitled to a tap from such domestic line. The City likewise agrees to keep such domestic reservoir, the pipeline, and the meter for such domestic water users in good repair at its own cost and expense. Domestic water systems now in existence shall remain unchanged, unless the source of such water supply fails, in which case the owner of the domestic water right may tap the new domestic line.

The City agrees to use the domestic tank and the domestic pipeline to divert its water from the T. F. Smith property, consisting of 19.4 acres of old land entitled to irrigation water, or 58.2 acre feet of water per annum at the lower end of the domestic pipeline where a meter shall be installed to keep an accurate measurement of all such waters diverted. After all improvements and installations have been made by the City and the system of diverting and transporting the water by pipeline has been in operation for a period of five years, either the City or the Water Commissioners of the North Fork of the Fresnal may request a representative of the City to join them in a metering or some other appropriate measurement of the irrigation water available to the water users at the various headgates of the North Fork of the Fresnal, and should the rate of flow as determined by such measuring device, over a reasonable test period, show a flow greater or less than three acre feet per acre of old land, the diversion of 58.2 acre feet of water per annum from the Smith property shall either be increased or decreased to equalize the flow to the other using such water for irrigation purposes.

In measuring the water available for irrigation at the various headgates of the water users, all of the flow from the pipeline, as well as water from the irrigation ditches, which shall remain open, will be measured. The primary right or old land right of each of the water users, as determined by the acreage entitled to irrigation in the Alamogordo Improvement Company Decree, shall be used in arriving at the amount of water entitled to three acre feet per acre for irrigation purposes.

4. The City also agrees to construct a pipeline of adequate size from the junction of the diversion of the waters between the North and the South Ditches as nearly as may be feasible, aside the South Ditch which shall contain valves permitting each water user now diverting water from the South Ditch to divert water from such pipeline into his irrigation ditch. Such pipeline shall be built and connected with the pipeline of the North Ditch above the lower Cadwallader intake, as indicated by the sketch attached hereto. That slight changes may be made in the location of the North and South pipelines as indicated on the sketch attached hereto if such changes are reasonable and appear for the benefit of all parties.

The City shall be entitled to the irrigation water from the G. E. Robertson property, consisting of 20.7 acres of old land under irrigation, or 62.1 acre feet per annum, on the periods of rotation as have been established by the Water Commissioners of the North Fork of the Fresnal for the North and South Ditches of the North Fork of the Fresnal. Should the diversion at such periods of rotation seriously interfere with the rotation of the lower water users of the North Fork of the Fresnal, and make it impossible for the City to procure such water at its lower intake, it may construct a settling reservoir at the junction of the North and South Forks of the Fresnal and divert such water from the Robertson property on such rotation days into its domestic line or into its main line at such times as it is entitled to the night flows.

The water users hereby agree with the City that no charge will be made for the easement of right-of-way for the pipelines and appurtenances, nor will any charge be made if such pipelines depart slightly from the meandering of the irrigation ditches to improve the feasibility of the system.

5. That in installing such pipelines and appurtenances, the City shall make ample provision for the diversion or apportionment of the waters at the headwaters of the Fresnal between the North and the South Ditches and the apportionment of waters between the upper users and the lower users of the North Fork of the Fresnal, which apportionment, as made by the Water Commission in the past, shall not be changed by the applicants, nor shall the diversion and use of the night flows now in effect be changed, but shall continue as provided in the Decree of the Alamogordo Improvement Company v. Cadwallader, et al., Cause No. 1037, adjudicating the water rights of the Fresnal.

6. The parties agree that the City of Alamogordo shall have the same status as any other water user on the system, and have but one vote on any issues coming before the Water Commissioners of the North Fork of the Fresnal. The Water Commission shall continue in the management and control of the waters of the Fresnal as it has in the past, but shall give due consideration to the voice of the City of Alamogordo in suggestions made for the betterment and the improvement of the system.

It is further agreed that this Stipulation shall be recognized and binding upon the parties hereto in all Court proceedings where such rights are involved.

7. It is understood between the parties hereto that the City is only diverting domestic water which was formerly taken from the various irrigation ditches by domestic users to a domestic pipeline for their use, and that the City shall not be required to filter or treat such domestic water not shall the City be liable for any contamination not wilfully caused as a result of its own acts.

8. It is recognized by the parties hereto that there is an ambiguity in the aforementioned Decree of the Alamogordo Improvement Company as to the quantity of water that constitutes a domestic water

right. In order to clarify said Decree, the City agrees, at its own cost to bring a proceeding for declaratory judgment, determining and clarifying the domestic provisions of said Decree. The water users of the North Fork of the Fresnal agree to assist the City at such hearings, and if necessary, to offer their testimony at the time of the hearing before the Honorable Judge Scoggin or any referee appointed by him.

9. It is agreed between the parties hereto that this Stipulation governs only the change of point of diversion and place and manner of use of the Smith and Robertson properties, and that it shall not be used as a precedent for other possible applications made by the City to change point of diversion and place and method of use of additional waters on the Fresnal stream system.

10. The City of Alamogordo agrees to carry out the above provisions of this settlement agreement, and the protestants agree to and do hereby withdraw the Protests filed herein with the State Engineer in the aforesaid applications. It is agreed, however, that this Stipulation is a mere offer of settlement of objections to the City's proposed applications, No. 01456 and No. 01455, and that it shall not be binding upon any of the parties hereto until it is signed by all of the parties to the Stipulation, nor shall it be used by any of the parties as an admission of any facts stated herein should the Stipulation not be signed by all of the parties.

AGREED TO and executed on this 13th day of April, 1959.

/s/ Jon T. Cadwallader
JON T. CADWALLADER, for himself, and all others similarly situated, Protestant.

/s/ J. Benson Newell
J. Benson Newell, Attorney

/s/ H. B. Flores
H. B. Flores

/s/ C. C. Braunstein
C. C. Braunstein

/s/ Jon T. Cadwallader
Jon T. Cadwallader
WATER COMMISSIONERS OF THE NORTH FORK OF THE FRESNAL.

ATTEST:

CITY OF ALAMOGORDO, a municipal corporation,

S E A L

By /s/ Chas Sutton
Mayor

/s/ Dorothy N. Grosch
City Clerk

/s/ Daniel R. Brenton,
Daniel R. Brenton, Attorney

STATE OF NEW MEXICO)
) ss:
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this 13th day of April, 1959, by Jon T. Cadwallader, for himself, and all others similarly situated, Protestant.

SEAL

/s/ Elsie Mae Morgan
Notary Public

My Commission expires: 10-17-62

STATE OF NEW MEXICO)
) ss:
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this 13th day of ~~March~~ April, 1959, by H. B. FLORES, C. C. BRAUNSTEIN, and JON T. CADWALLADER, WATER COMMISSIONERS OF THE NORTH FORK OF THE FRESNAL.

SEAL

/s/ Elsie Mae Morgan
Notary Public

My Commission expires: 10-17-62

STATE OF NEW MEXICO)
) ss:
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this 14th day of ~~March~~ May, 1959, by Charles Sutton, Mayor of the City of Alamogordo, New Mexico, on behalf of said city.

SEAL

/s/ Elsie Mae Morgan
Notary Public

My Commission expires: 10-17-62"

; and

WHEREAS, Proof of Completion of Works, Proof of Application of Water to Beneficial Use and Report on final inspection prepared by William F. Turney, registered professional engineer and land surveyor in the State of New Mexico, have been filed in accordance with the Rules and Regulations of the State Engineer.

NOW, THEREFORE, I, S. E. Reynolds, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the Laws of said State, do hereby grant to the City of Alamogordo, County of Otero, State of New Mexico, this License No. 01455 to Change Point of Diversion, Place and Purpose of Use of the 62.1 acre feet of water per annum claimed under Declaration No. 01455 having a priority prior to April 21, 1901, from irrigation purposes upon the 20.7 acres of land described as follows:

Decree Owner in Cause 1037	Subdivision	Section	Twp.	Rge.	Acres
George Thompson	Pt. Lots 9 & 10	4	16S.	11E.	8.0
Mary Grant	Pt. Lots 9 & 10	4	16S.	11E.	12.7
			Total		20.7

to municipal purposes by the City of Alamogordo, and this License No. 01456 to Change Place and Purpose of Use of the 58.2 acre feet of water per annum claimed prior to April 21, 1901, from irrigation

purposes upon 19.4 acres of land described as follows:

Decree Owner in Cause 1037	Subdivision	Section	Twp.	Rge.	Acres
W. M. Snow	S. Pt. NW¼SE¼	32	15S.	12E.	3.5
W. M. Snow	N. Pt. Lot 1	3	16S.	11E.	4.6
W. M. Snow	N. Pt. Lot 4	2	16S.	11E.	8.3
W. M. Snow	N. Pt. Lot 3	2	16S.	11E.	3.0
			Total		19.4

to municipal purposes by the City of Alamogordo; the source of supply for these licenses being from the North Fork Fresnal Creek, a tributary of the Fresnal Stream System within the Tularosa Basin, the water distribution system being known as the High Rolls Fresnal Water Development System and is described in Certificate of Construction issued this date; these licenses are to be used as above stated and can be changed only as provided by law, and further provided that they be not exercised to the detriment of any other persons having prior valid and existing rights to the use of the waters of said stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 11th day of September, 1963.

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

- **Alamo Canyon**

- SD637_amended_declaration_1977
- SD637_permit_1977
- SP2176_license_1939
- SP2176_permit_1977

AMENDED DECLARATION OF OWNERSHIP OF WATER RIGHT
PERFECTED PRIOR TO MARCH 19, 1907

Date of receipt March 10, 1977 Declaration No. 0637 - Amended

I, G. M. Glover, Mayor of the City of Alamogordo, New Mexico, a resident of Alamogordo, County of Otero, State of New Mexico, being first duly sworn, upon my oath, declare that the City of Alamogordo is the sole Owner of a right to make beneficial use of water from Alamo Canyon for municipal and industrial uses in the County of Otero, State of New Mexico, by delivery of water through the Alamo Canyon Pipeline and make these several statements relative thereto:

1. The Alamo Canyon Pipeline was initiated by survey in 1877, and work thereon was diligently prosecuted and carried to completion and water was applied to beneficial use by municipal and industrial uses in and around the City of Alamogordo, New Mexico.

2. The location of the point of diversion was in the Northeast quarter of the Northwest quarter of Section 7, Township 17 South, Range 11 East, N.M.P.M. whence the North quarter corner of Section 7 bears N 6° 50' East, 1000 feet distant. The diversion point was changed by permit from the State Engineer on October 14, 1934, to point one located in the Northwest quarter of the Northwest quarter of projected Section 8, Township 17 South, Range 11 East, N.M.P.M. at a point whence the Southwest corner of Section 5, Township 17 South, Range 11 East bears N 21° 30' W, 1250 feet distant and point two located in the Northwest quarter of the Southeast quarter of Section 16, Township 17 South, Range 11 East, N.M.P.M. whence the East quarter corner of Section 16, Township 17 South, Range 11 East, N.M.P.M. bears N 77° 00' E, 2350 feet distant.

3. The constructed works consist of a concrete diversion dam across the bed of Alamo Canyon Creek, set on a limestone bench, 14 feet long by 1.5 feet high with a 16 inch wide base and a 12 inch wide top which deflects the normal flow of water into a cement conduit 3.5 feet wide by 16 inches deep and 40 feet long with a vertical drop of 18 inches. The cement conduit discharges into a concrete sandbox, or settling tank, 6 feet wide, 8 feet deep, and 24 feet long

with screens, flushing discharge, and overflow conduits. An 18 inch diameter wrought iron pipe is set in the lower, or outlet, endwall of the settling tank and extends 200 feet beyond the tank where it is tapered to and connected with the main 12 inch diameter pipeline. The main 12 inch diameter pipeline continues westerly, approximately following the course of Alamo Canyon, a distance of about 5-1/2 miles until it connects to the municipal water system of the City of Alamogordo.

4. The average grade of the 18 inch diameter pipeline below the settling tank is approximately 60 feet per 1000 feet, and its carrying capacity is 17 cubic feet per second.

The hydraulic properties of the main conduit are: 12 inch diameter; slope of 60 feet per 1000 feet; coefficient of roughness (n) of 0.013; velocity of 10.89 feet per second when flowing full; capacity of 8.55 cubic feet per second; and is constructed of approximately 5-1/2 miles of 12 inch diameter iron pipe.

5. The diversion dam is constructed of concrete. The crest is 14 feet long; the crest width is 12 inches; the height above the stream bed is 1.5 feet high; and the dam sets on a solid limestone shelf. The diversion dam contains about 24.5 cubic yards of material.

6. The water is used by the City of Alamogordo for municipal and industrial uses in and around the City of Alamogordo.

7. The quantity of water applied to beneficial use is 2897 acre feet per annum for municipal and industrial uses.

I hereby declare that to the best of my knowledge and belief the above statements are true and correct and that water has been continuously, uninterruptedly and openly, applied to beneficial uses on the above described lands

from the date of inception of the right to the present time. I hereby give notice of the ownership of said water right as appurtenant to said lands.

Declarant _____
G. H. GLOVER

Title Mayor of the City of Alamogordo, New Mexico

Subscribed and sworn to before me this 7th day of March, 1977.

_____
Notary Public

COMPUTATION OF ANNUAL QUANTITY OF WATER
APPLIED TO BENEFICIAL USE

Average rate of flow = 4 cfs

Days per year = 365.25 days

Ratio of cfs to acre feet per day:

1 cfs = 1.983 acre feet per day

cfs x ratio x days per year = acre feet per year

4 cfs x 1.983 x 365.25 days/year = 2897 acre feet per year

Ten 2545 68

STATE ENGINEER OFFICE
SANTA FE, N.M. 87501
'77 MAR 10 PM 4 33

IMPORTANT—READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM

APPLICATION FOR PERMIT TO CHANGE POINT OF DIVERSION

Surface Waters

Date of Receipt of Application March 10, 1977 **File No.** 0637

A. **Name of Applicant** G. M. Glover, Mayor of the City of Alamogordo

Post Office Alamogordo, **County of** Otero

State of New Mexico

Water right was acquired by beneficial use and is recorded in the State Engineer's Office under No. 0637 (see "Instructions"—second paragraph) **Priority date of water right** 1877

Source of water supply Several springs in Alamo Canyon (river, arroyo, spring, etc.)

a tributary of Alamo Canyon

Present point of diversion lies in the NW ¼ of the NW ¼ of projected **Section** 8 **Township** 17 South, **Range** 11 East, **N.M.P.M., at a point whence the** Southwest corner **of section** 5, **Township** 17 South, **Range** 11 East, **bears** N 06° 50' W, 1250 **feet distant.**

Quantity of water to be changed 2897 acre-feet ~~applied on~~ ~~acres of land located in~~ per annum used for industrial and municipal purposes by the City of Alamogordo through their water distribution system.

B. **Application is hereby made to change point of diversion under above claimed right for the following reasons:** To avoid contamination of the waters flowing in the stream above the existing point of diversion. It is intended to connect the pipeline into several springs which are the source of supply. No additional diversion of water is anticipated as a result of this change.

New point of diversion proposed under this application lies in the Northeast ¼ of the Southeast ¼ of section 4, **Township** 17 South, **Range** 11 East, **at a point whence the** East 1/4 corner **of section** 4 **Township** 17 South, **Range** 11 East, **bears** N 35° 10' E, 1380 **feet distant.**

Name of stream, spring, tributary, etc., from which diversion is to be made (if different from original) Alamo Springs within Alamo Canyon

Description of new diversion dam (give construction material, type, dimensions, hydraulic properties, etc.) The diversion is an array of spring boxes and perforated pipes of various dimensions constructed so that the waters are captured and flow to a common point from which the waters then flow through the main pipeline.

Additional data (give dimensions, capacity, etc., of new canal section; also data on any other proposed works) The water is used by the City of Alamogordo for municipal and industrial uses. The Fleming Springs Diversion in Gordon Canyon, located in the NW 1/4 SE 1/4 of Section 16, Township 17 South, Range 11 East, N.M.P.M., is also connected into the City's Alamo Canyon Pipeline and is to be retained as one of the points of diversion and sources of supply.

The undersigned, being duly sworn, upon my oath, state that I have read the foregoing statements and that the same are true to the best of my knowledge and belief.

G. M. Glover **Applicant.**

G. M. GLOVER
Mayor, Alamogordo, New Mexico

Subscribed and sworn to before me this 7th **day of** March, **A. D., 19**77.

My commission expires 5-10-77

Patricia A. Hatfield
Notary Public

C. **Approval of the State Engineer:**

Number of this Permit 0637 Name of Paper Alamogordo Daily News

Date of Receipt of Application Mar. 10, 1977 Publisher's Affidavit Filed April 25, 1977

Notice of Publication Issued Mar. 21, 1977 Approved May 20, 1977

This application is approved provided it is not exercised to the detriment of any others having prior, valid and existing rights to the use of the waters of this stream or to the detriment of any rights acquired prior to this application for permit to change point of diversion

SEE ATTACHMENT

Proof of completion of works shall be filed on or before _____, 19____.

This is to certify that I have examined the above application to change point of diversion and hereby approve the same subject to the foregoing provisions and conditions.

Witness my hand and seal this 20th day of May, A. D., 1977

S. E. Reynolds
State Engineer

By: M. B. Compton
M. B. Compton, Engineer
Water Rights Division

INSTRUCTIONS

(See Manual of Rules and Regulations)

This form shall be made out in duplicate and shall be accompanied by a filing map showing the present and proposed points of diversion and other pertinent data. A filing fee of $5.00 shall accompany this application.

If application is made to change point of diversion of water claimed under a water right established prior to March 19, 1907, a declaration of such old right substantiated by sworn affidavits together with a filing map must accompany this application or have been already filed in this office, fully setting forth the right claimed (see Declaration of Old Right in Manual). A right established by license or permit from the State Engineer shall be referred to fully in making application to change.

The filing map accompanying this application shall be prepared by a qualified registered professional engineer or land surveyor and shall show existing point of diversion and other works and lands irrigated as well as the new point of diversion. All pertinent dimensions and details of the proposed diversion structure, together with size and alignment of the canal and field notes thereon from the new point of diversion to the point where the new work meets the existing canal, shall also be given. Ownership of the lands upon which the point of diversion and any other proposed new works lie shall be shown. If applicant is not original owner of water right, a Change of Ownership affidavit together with a filing fee of $1.00 must accompany this application.

The first line of this form is for the State Engineer. Do not fill in this line or any of part (C) following. The first part of the form, (A), is to set forth the essential features of the existing water right; the second part, (B), describes the changes requested; and the third, (C), gives the approval or disapproval of the State Engineer, the conditions under which such approval is granted, and establishes the limiting dates for completing such changes.

It is a misdemeanor to use more water after the change than the owner has a valid right to use before the change was made.

QUALITY PRESS—SANTA FE

ATTACHMENT TO File 0637 City of Alamogordo
May 20, 1977

This application is approved with the following conditions:

1. The amount of water diverted from Alamo Canyon and Gordon Canyon under permit 0637 shall not exceed 2897 acre feet in any one year.

2. The diversion of water from Alamo Canyon and Gordon Canyon shall be measured by a totalizing meter, or meters, of a type and at a location(s) approved by and installed in a manner acceptable to the State Engineer.

3. The Permittee shall secure accurate records from the meters listed above and submit such records, properly certified, to the State Engineer for the preceding month, on or before the 15th day of the month of record.

4. This permit shall not be exercised to the detriment of anyone having valid rights to the use of the waters of Alamo Canyon and Gordon Canyon.

5. Proof of Completion of Works and Proof of Application of Water to Beneficial Use to be filed on or before July 1, 1981.

STATE OF NEW MEXICO,)
)
OFFICE OF STATE ENGINEER.)

LICENSE TO APPROPRIATE WATER.

License No. 2176. Book "K". Refers to Permit No. 2176.

WHEREAS, on the 8th day of July, 1937, Notice of Intention No. 2176 to file Formal Application for Permit to appropriate 0.4 of a cubic foot of water per second of time by diverting from 12 springs in Caballero Canyon, tributary to the Tularosa Closed Basin, for domestic and general purposes, was filed by the Town of Alamogordo, County of Otero, State of New Mexico, and

WHEREAS, on the 12th day of November, 1937, Formal Application to appropriate said waters, to the extent of 0.25 of a cubic foot per second of time, was filed by the Owner and Holder of said Notice of Intention, and

WHEREAS, on the 15th day of November, 1937, Notice of Publication was issued by the State Engineer, and Proof of such Publication was filed on the 16th day of December, 1937, by the Alamogordo News, and

WHEREAS, on the 17th day of January, 1938, no protests having been filed, said application was given due consideration and formally approved by the State Engineer, and

WHEREAS, on the 31st day of January, 1939, the Owner and Holder of said Permit No. 2176, duly filed Proof of Completion of Works, and

WHEREAS, on the 31st day of January, 1939, the Owner and Holder of said Permit duly filed Proof of Application of Water to Beneficial Use, to the extent of 0.25 of a cubic foot per second of time, and

WHEREAS, on the 3rd day of July, 1939, a report on the final inspection was duly filed by G. E. Moffett, a registered land surveyor in the State of New Mexico, who was duly authorized to make such inspection and report, recommending the issuance of a license to appropriate the surface waters of the State of New Mexico in compliance with the laws of said State.

NOW, THEREFORE, I, Thomas M. McClure, State Engineer of the State of New Mexico, by virtue of the authority vested in me by the laws of said State, do hereby grant to the Town of Alamogordo, County of Otero, State of New Mexico, the Owner and Holder of said Permit No. 2176, a license dating from the filing of said Notice of Intention, the 8th day of July, 1937, to appropriate 0.25 of a cubic foot of water per second of time, from springs as numbered 3, 5, 6, 9, 10, and 12, of said 12 springs, as mentioned heretofore, situate within Caballero Canyon, tributary to the Tularosa Closed Basin, for domestic and general purposes throughout the entire year, same to be used as above stated and can be changed only as provided by law, and further provided that same shall not be exercised to the detriment of any others having prior valid and existing rights to the use of the waters of this stream system.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 7th day of November, A. D., 1939.

Thomas M. McClure
State Engineer

TRD-187204

APPLICATION FOR PERMIT FOR ALTERNATE POINTS OF DIVERSION

Date of Receipt of Application March 10, 1977 File No. 2176

A. Name of Applicant G. M. Glover, Mayor of the City of Alamogordo

Post Office Alamogordo, County of Otero

State of New Mexico.

Water right was acquired by beneficial use and is recorded in the State Engineer's Office under No. 2176. Priority date of water right July 8th, 1937.

Source of water supply Several springs in Caballero Canyon

a tributary of Alamo Canyon

The present points of diversion are to be retained and lie as follows:

SPRING NO. 3

Formerly incorrectly surveyed as located at a point in the Southeast quarter of the Southeast quarter of Section 29, Township 16 South, Range 11 East, N.M.P.M. whence the Southeast corner of said Section 29 bears S 19° 30' E, 1080 feet distant, but is correctly surveyed as located in the Southeast quarter of the Southeast quarter of Section 29, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Southeast corner of Section 29, Township 16 South, Range 11 East, N.M.P.M. bears S 23° 38' 48" E, 924.09 feet distant.

SPRING NO. 5

Formerly incorrectly listed as located in the Northeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Northeast corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 21° 20' E, 740 feet distant, but is correctly surveyed as located in the Northeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Northeast corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 80° E, 740 feet distant.

SPRING NO. 6

Located in the Northeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Northeast corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 33° 10' E, 740 feet distant.

SPRING NO. 9

Located in the Northeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the North 1/4 corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 79° 30' W, 1750 feet distant.

SPRING NO. 10

Located in the Northwest quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the North 1/4 corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 72° 30' W, 1140 feet distant.

B. Application is hereby made for alternate points of diversion under above claimed right for the following reasons: To capture the water at the springs instead of from the stream, thereby reducing losses. No additional diversion of water above the permitted right is anticipated as a result of this change.

Alternate points of diversion proposed under this application lie as follows:

SPRING NO. 13

Located in the Northwest quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the North 1/4 corner of Section 4, Township 16 South, Range 11 East, N.M.P.M. bears N 55° 06' 40" W, 1341.24 feet distant.

SPRING NO. 14

Located in the Northeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Northeast corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 33° 10' 33" E, 1394.48 feet distant.

SPRING NO. 15

Located in the Southeast quarter of the Northeast quarter of Section 32, Township 16 South, Range 11 East, N.M.P.M. at a point whence the Northeast corner of Section 32, Township 16 South, Range 11 East, N.M.P.M. bears N 21° 24' 46" E, 1507.99 feet distant.

Under this application it is proposed to completely rebuild the entire diversion, collection and transportation system appurtenant to this water right. A map consisting of sheet 1 of 1 designated as "Caballero Canyon Water Supply System", which is a part of this application, shows the location of the transportation pipeline and the location of the various springs.

This system will be a gravity flow system. The waters will be captured and diverted at the various springs by means of a spring box. The water from each spring will flow through an appropriately sized pipe to where the various flows are collected to a common point from which they will be transported by the main pipeline to the point of connection with the Alamo Canyon Water Supply System of the City of Alamogordo.

Each new diversion structure will consist of a metal box set in the earth at the point where the springs are located with appropriately sized perforated inlet pipes packed with gravel extending horizontally into the aquifer in such a manner as to facilitate the flow of the water from the aquifer into the spring box. An appropriately sized outlet pipe which will be set below water level and above the bottom of the spring box will be connected to and will slope away from the spring box and connect to the main pipeline at an elevation lower than the spring.

The spring boxes will have an opening and a hinged door on top large enough to allow personnel entry for maintenance and cleaning of the spring. The top of the spring box will be elevated so as to prevent flood waters from entering the box.

The pipes which will connect the various spring boxes to the main transportation pipeline vary in size in proportion to the flow of the spring to which it will be connected.

The main transportation pipeline will vary in size from four inch diameter to six inch diameter. The size will vary as the slope varies with the smaller sizes being used on the steeper slopes.

The hydraulic properties of the Caballero Canyon Pipeline are as follows: diameter, 0.33 feet; slope, 8 feet per 1000 feet; hydraulic radius, 0.083 feet; coefficient of roughness (n), 0.013; velocity at full operating capacity, 6.13 feet per second; capacity, 0.534 cubic feet per second.

The undersigned, being duly sworn, upon my oath, state that I have read the foregoing statements and that the same are true to the best of my knowledge and belief.

Applicant
G. M. GLOVER
Mayor, City of Alamogordo, New Mexico

Subscribed and sworn to before me this 7th day of March ,A.D., 1977

My Commission Expires:
5-10-77

Notary Public

APPROVAL OF STATE ENGINEER

Number of this permit 2176 Name of Paper Alamogordo Daily News

Formal Application received March 10, 1977

Affidavit of Publication filed April 25, 1977

Publication of Notice issued March 21, 1977

Date of approval May 20, 1977

This application is approved with the following conditions:

1. The amount of water diverted from Caballero Canyon under permit 2176 shall not exceed 181 acre feet in any one year.

2. The diversion of water from Caballero Canyon shall be measured by a totalizing meter, or meters, of a type and at a location(s) approved by and installed in a manner acceptable to the State Engineer.

3. The Permittee shall secure accurate records from the meters listed above and submit such records, properly certified, to the State Engineer for the preceding month, on or before the 15th day of the month of record.

4. This permit shall not be exercised to the detriment of anyone having valid rights to the use of the waters of Caballero Canyon.

5. Proof of Completion of Works and Proof of Application of Water to Beneficial Use to be filed on or before July 1, 1981.

WITNESS my hand and seal this 20th day of May, 1977.

S. E. Reynolds
State Engineer

By: M. B. Compton
M. B. Compton
Engineer
Water Rights Division

- **La Luz Wells and Golf Course Well**

- LaLuz_T32_license_2010
- GolfCourse_T814_permit_2001
- GolfCourse_T814_suppl_LaLuzT32_permit_2008

STATE OF NEW MEXICO)
OFFICE OF THE STATE ENGINEER)

LICENSE

No.: T-32 Refers to File No.: T-32

WHEREAS, on the 11th day of January, 1957, Declaration of Owner of Underground water right No. T-32-S-2 was received wherein it stated that a well 12 inches, tapering to 10 inches in diameter well casing, and 549 feet in depth, located in the NW¼NW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM, has been used since 1956 for the diversion of 500gpm for municipal purposes and the place of use was described as the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 22nd day of January, 1959, Declaration of Owner of Underground water right No. T-32-S-3 was received wherein it stated that a well, 12¾ inches diameter casing and 703 feet in depth, located in the SE¼SW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM, has been used since 1957 for the diversion of 375gpm, for municipal purposes and the place of use was described as the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 22nd day of January, 1959, Declaration of Owner of Underground water right No. T-32-S-4 was received wherein it stated that a well, 12 ¾ inches in diameter casing and 700 feet in depth, located in Lot 10, Section 5, Township 16 South, Range 10 East, NMPM has been used since 1957 for the diversion of 500gpm, for municipal purposes and the place of use was described as the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 6th day of December 1982, Declaration of Owner of Underground water right No. T-32-S-5 was received wherein it is stated that a well 12 inches in diameter casing and 876 feet in depth, located in Lot 8, Section 5, Township 16 South, Range 10 East, NMPM has been used since 1964 for the diversion of 1050 acre-feet per annum, and a total amount of water beneficially used from all City of Alamogordo wells as 11,195 acre-feet per annum for municipal, industrial and related purposes and the place of used described as the City of Alamogordo as it now exists or shall exist in the future, and

WHEREAS, on the 6th day of December 1982, Declaration of Owner of Underground water right No. T-32-S-6 was received wherein it is stated that a well 12 inches in diameter

casing and 942 feet in depth, located in the NW¼NW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM has been used since 1965 for the diversion of 645 acre-feet per annum, and a total amount of water beneficially used from all City of Alamogordo wells as 11,195 acre-feet per annum for municipal, industrial and related purposes and the place of used described as the City of Alamogordo as it now exists or shall exist in the future, and

WHEREAS, on the 6th day of December 1982, Declaration of Owner of Underground water right No. T-32-S-7 was received wherein it is stated that a well 12 inches in diameter casing and 844 feet in depth, located in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM has been used since 1965 for the diversion of 3,226 acre-feet per annum, and a total amount of water beneficially used from all City of Alamogordo wells as 11,195 acre-feet per annum for municipal, industrial and related purposes and the place of used described as the City of Alamogordo as it now exists or shall exist in the future, and

WHEREAS, on the 6th day of December 1982, Declaration of Owner of Underground water right No. T-32-S-8 was received wherein it is stated that a well 12 inches in diameter casing and 750 feet in depth, located in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM has been used since 1971 for the diversion of 1,291 acre-feet per annum, and a total amount of water beneficially used from all City of Alamogordo wells as 11,195 acre-feet per annum for municipal, industrial and related purposes and the place of used described as the City of Alamogordo as it now exists or shall exist in the future, and

WHEREAS, on the 30th day of January 1992, after notice pursuant to statute, the State Engineer did approve application No. T-32-S-7 for Permit to Change Location of Well by drilling a new well in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM for the diversion of ground water from wells T-32-S-3 through T-32-S-8 not exceed 4,572.88 acre-feet per annum for domestic, municipal and industrial uses in the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 24th day of July 1998, after notice pursuant to statute, the State Engineer did approve applications No. T-32-S-9 for Permit to Change Location of Well by drilling a new well in the NW¼SE¼SW¼, Section 36, Township 15 South, Range 10 East, NMPM, for the diversion of groundwater from wells T-32-S-3 through T-32-S-9 not to exceed 4,572.88 acre-feet per annum and that the diversion of water from well T-32-S-9 be further

limited to 740 acre-feet per annum, for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 28th day of August 2008, after notice pursuant to statute, the State Engineer did approve Application T-32-POD10 for permit to Change Location of Well T-32-S-6 by drilling a new well in the NW¼NW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM, where Latitude: 32°58'27.20"N and Longitude: 105°56'22. 22"W meet, for the diversion of groundwater from wells T-32-S-3 through T-32-POD10 not to exceed 4,572.88 acre-feet per annum and that the diversion of water from well T-32-POD10 be limited to 523.45 acre-feet per annum for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 28th day of August 2008, after notice pursuant to statute, the State Engineer did approve Application T-32-POD11 for permit to Change Location of Well T-32-S-4 by drilling a new well in Lot 10, Section 5, Township 16 South, Range 10 East, NMPM, where Latitude: 32°57'5.83"N and Longitude: 105°56'22.84"W meet, for the diversion of groundwater from wells T-32-S-3 through T-32-POD11 not to exceed 4,572.88 acre-feet per annum and that the diversion of water from well T-32-POD11 be limited to 483.90 acre-feet per annum for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 28th day of November 2008, after notice pursuant to statute, the State Engineer did approve application for permit to use well T-814 as a Supplemental Point of Diversion to the Rights under T-32 by using well T-814 located in the NE¼SW¼NW¼, Section 6, Township 17 South, range 10 East, NMPM where Latitude: 32°51'22.6726"N and Longitude: 105°57'33.1845"W meet, for the diversion of groundwater from wells T-32-S-3 through T-32-POD11 not to exceed 4,572.88 acre-feet per annum and that the diversion of water from well T-814 be further limited to 429.89 acre-feet per annum, further, only in years when the combined diversions from well T-814 and T-814-S exceed 269.89 acre-feet per annum will the additional water (160 acre-feet per annum) be counted toward the water right under T-32 for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 20th day of November 2009, Final Inspection and Report of Beneficial Use of Underground Water was filed stating therein that per Settlement Agreement

between the State Engineer and the City of Alamogordo, dated the 3rd day of July 2007, the parties agreed to the licensing of 3,000 acre-feet per annum of water for domestic, municipal, industrial and related purposes within the City of Alamogordo as it exists now or may be extended, and

WHEREAS, on the 22nd of February 2010, after notice pursuant to statute, the State Engineer did approve Application T-32-POD12 for permit to Change Location of Well T-32-S-3 by drilling a new well in the SE¼SW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM where Latitude: 32°58'4.38"N and Longitude: 105°56'9.96"W meet, for the diversion of groundwater from wells T-32-S-7 through T-32-POD14 and T-814 not to exceed 3,000 acre-feet per annum for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 22nd of February 2010, after notice pursuant to statute, the State Engineer did approve Application T-32-POD13 for permit to Change Location of Well T-32-S-5 by drilling a new well in Lot 8, Section 5, Township 16 South, Range 10 East where Latitude: 32°57'18.36"N and Longitude: 105°56'10.08"W meet, for the diversion of groundwater from wells T-32-S-7 through T-32-POD14 and T-814 not to exceed 3,000 acre-feet per annum for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended, and

WHEREAS, on the 22nd of February 2010, after notice pursuant to statute, the State Engineer did approve Application T-32-POD14 for permit to Change Location of Well T-32-S-8 by drilling a new well in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM where Latitude: 32°56'48.84"N and Longitude: 105°56'23.64"W meet, for the diversion of groundwater from wells T-32-S-7 through T-32-POD14 and T-814 not to exceed 3,000 acre-feet per annum for domestic, municipal and industrial purposes within the City of Alamogordo as it exists or may be extended.

NOW THEREFORE, I John R. D'Antonio, Jr. State Engineer of the State of New Mexico, by virtue of the authority vested in me by the laws of the State, do hereby grant to the City of Alamogordo, within Otero County, in the State of New Mexico, this License No. T-32 with a priority of December 17, 1956 to appropriate 3,000 acre-feet per annum of underground water for domestic, municipal and industrial purposes in the City of Alamogordo as it exists or may be extended from wells T-32-S-7 through T-32-POD14 described as follows:

Well T-32-S-7 located in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM; well T-32-S-9 located in the NW¼SE¼SW¼, Section 36, Township 15 South, Range 10 East, NMPM; well T-32-POD10 located in the NW¼NW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM, where Latitude: 32°58'27.20"N and Longitude: 105°56'22. 22"W meet; well T-32-POD11 located in Lot 10, Section 5, Township 16 South, Range 10 East, NMPM, where Latitude: 32°57'5.83"N and Longitude: 105°56'22.84"W meet; well T-32-POD12 located in the SE¼SW¼NW¼, Section 36, Township 15 South, Range 10 East, NMPM where Latitude: 32°58'4.38"N and Longitude: 105°56'9.96"W meet; well T-32-POD13 located in Lot 8, Section 5, Township 16 South, Range 10 East, NMPM where Latitude: 32°57'18.2448"N and Longitude: 105°56'9.9526"W meet; well T-32-POD14 located in Lot 16, Section 5, Township 16 South, Range 10 East, NMPM where Latitude 32°56'49.9803"N and Longitude: 105°56'21.5829"W meet and well T-814 located in the NE¼SW¼NW¼, Section 6, Township 17 South, Range 10 East, NMPM where Latitude: 32°51'22.6726"N and Longitude: 105°57'33.1845"W meet. Same to be used as above stated and can be changed only as provided by law and provided that the total amount of water diverted from said wells shall not exceed 3,000 acre-feet per annum measured at the wells, and further provided that this License shall not be exercised to the impairment of any other person having prior existing water rights to the use of waters of the State of New Mexico.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 20th day of July, A.D., 2010.

John D'Antonio, Jr. PE
State Engineer,

BY:
Calvin Chavez
District IV Manager

STATE OF NEW MEXICO
STATE ENGINEER

Revised September 1966

IMPORTANT—(READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM) T-00814

APPLICATION FOR PERMIT TO CHANGE PLACE OR PURPOSE OF USE OF UNDERGROUND WATERS TRN172835

File No. T-814

1. Name of Water Right Owner City of Alamogordo
   Mailing address 1376 East Ninth Street
   City and State Alamogordo, NM 88310

2. Source of water supply shallow water aquifer, located in Tularosa
   (artesian or shallow water aquifer) (name of underground basin)

3. Right was acquired for agricultural & golf course irrigation purposes and recorded under File No. T-814.

4. Area from which water rights are to be severed,(a) 200 acres, described as follows:

Subdivision	Section	Township	Range	Acres	Owner
NW 1/4	6	17S	10E	160	declarant
E1/2, E1/2, NE 1/4	12	17S	9E	40	declarant
Otero County					

STATE ENGINEER OFFICE SANTA FE, NEW MEXICO 2001 APR 27 PM 2:01

(b) Quantity of water to be transferred, 700 acre feet, (c) supplied from well
(~~xxxxxxxxxxxx~~ diversion)
in the NE ¼ SW ¼ NW ¼, Section 6 Township 17S Range 10E N.M.P.M.,
or Tract No. _____ of Map No. _____ of the _____ District.
(d) If there are other sources of water for these lands, describe by file No. T-814-S

5. Application is made to change place or purpose of use for the following reasons: City of Alamogordo has completed project to irrigate golf course with wastewater treatment plant effluent. City wishes to change place and purpose of use to Municipal uses as deemed necessary by the city, which includes, Residential, Commercial, Industrial, Agricultural (if needed), construction activities and sand and gravel processing.

6. Acreage to which transfer is to be made, (a) City of Alamogordo acres, described as follows:

Subdivision	Section	Township	Range	Acres	Owner
Place of use is City of Alamogordo as it now exists or shall exist in the future.					
Otero County					

(b) Water to be used thereon for residential, commercial, industrial, municipal & agricultural purposes:
(c) If there are other sources of water for these lands, describe by file No. See Item 7 for list of Water Rights Summary and Index

7. Additional statements or explanations 01115A, 0919, 01110-14, 01118-22(LaLuz), 01110, 01111, 01112, 01113, 01114, 01118-21, 01122, 01342-01346, 01342, 01343, 01344, 01345, 01346, 01122, 01383, 01411, 01412(Fresnal), 01383 01411, 01412, 01455, 01456, 01455, 01456, 01562, 2886, 01562, 2886, 13-B Judgment(Case#3854), 13-B Lewis Order, 01110 et al, (Storage), 01110, 01113 et al. (Storage), 2176, 0637A, T-32-S-3, T32-S-4, T-32-S-5, T-32-S-6, T-32-S-7 T-32-S-8, T-33, T-64, T-814, T-814-S, T-1277, 3132, T-388 (Pending), T-32 (Abandoned)

I, Pat McCourt, affirm that the foregoing statements are true to the best of my knowledge and belief and that I am the sole owner and holder of said water right.
(sole, partial, agent for, etc.,)

City of Alamogordo, Permittee,

By: _____
Pat McCourt, City Manager

Subscribed and sworn to before me this 20th day of April, A.D., 1999.

My commission expires Sept. 19, 2001

_____
Notary Public

T-00814
TRN172835

ACTION OF STATE ENGINEER

T-00814
TRN172835

After notice pursuant to statute and by authority vested in me. this application is approved provided it is not exercised to the derriment of any others having existing rights and further subject to the following conditions:

~~PER ATTACHED CONDITIONS~~

Proof of application of water to beneficial use shall be filed on or before ~~APRIL 30, 2004 XXX~~

Witness my hand and seal this ~~21ST~~ day of ~~FEBRUARY~~, A.D., ~~XX~~ ~~2001~~

THOMAS C. TURNEY, STATE ENGINEER

BY

Calvin Chavez, Supervisor District 4

INSTRUCTIONS

This form shall be executed, preferably typewritten, in triplicate and must be accompanied by a ~~$1000~~ $2500 filing fee. Each triplicate copy must be properly signed and attested. If applicant is not recorded owner of water right, Change of Ownership affidavit must accompany this application. If additional space is required, use a separate sheet or sheets and attach securely hereto.

NOTE: It is unlawful, after a transfer has been completed, to apply water on the lands or uses from which right has been severed, or to use more water than the owner had a valid right to use before change was made. Supplementary water rights, by their very nature, cease to exist for those lands from which rights are transferred; also they cannot be transferred to other lands as new or primary water rights.

All blanks in Sections 1 – 7 shall be filled out fully and accurately. Sec. 2–4: Describe all essential features of the water right or rights involved in the proposed change. Sec. 5: Explain fully why change is desired or necessary. Sec. 6: Describe lands or uses to which transfer is to be made and set forth any other rights appurtenant thereto. Sec. 7: Explain any features or conditions not made clear in previous sections.

T-00814
TRN172835

NEW MEXICO STATE ENGINEER OFFICE
CHANGE PLACE & PURPOSE OF USE (GROUND)

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:		Date Rcvd. Corrected:	
Formal Application Rcvd:	08/24/1999	Pub. of Notice Ordered:	04/27/1999
Date Returned - Correction:		Affidavit of Pub. Filed:	08/24/1999

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 21 day of Feb A.D., 2001

Thomas C. Turney, State Engineer

By: Calvin Chavez

Trn Desc: T 00814

File Number: T 00814
Trn Number: 172835

NEW MEXICO STATE ENGINEER OFFICE
CHANGE PLACE & PURPOSE OF USE (GROUND)

SPECIFIC CONDITIONS OF APPROVAL

PBU The Proof of Beneficial use must be filed on or before 04/30/2004.

1. This permit shall not be exercised to the detriment of valid existing water rights, shall not be contrary to conservation of water within the state of New Mexico, and shall not be detrimental to the public welfare of the state of New Mexico.
2. The total diversion of water under this permit from wells T-814 and T-814-S shall not exceed 269.935 acre feet per annum for Residential, Commercial, Industrial, Municipal & Agricultural purposes.
3. Wells T-814 and T-814-S shall be equipped with totalizing meters. The location, manner of installation, and type of meter shall be acceptable to the State Engineer. The permittee shall provide, in writing the make, model, serial number, date of installation, initial reading, units of measure and dates of recalibration for each meter, or replacement meter, used to measure the diversion of water. No water shall be diverted from any well unless equipped with a functional meter.
4. Written records of the amount of water diverted from any permit or decreed source shall be submitted to the District IV Office of the State Engineer for each calendar month on or before the 10th day of the following month.
5. The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent possible.
6. Proof of completion of well will be filed with the Office of the State Engineer on or before April 30, 2002.
7. Proof of application of water to beneficial use shall be filed with the State Engineer on or before April 30, 2004.

File #T-00032, T-00814
TRN-361398

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO USE SUPPLEMENTAL WELL TO SUPPLEMENT GROUND OR SURFACE WATERS

1. WATER RIGHT OWNER

Name: City of Alamogordo — Work Phone: 505 439-4200
Contact: Pat McCourt, City Manager — Home Phone: _____
Address: 1376 E. Ninth Street
City: Alamogordo — State: NM Zip: 88310

2. QUANTITY

Consumptive Use: 4,572.88 acre-feet per annum
Diversion Amount: 4,572.88 acre-feet per annum

3. PURPOSE OF USE

Domestic: ___ Livestock: ___ Irrigation: _X_ Municipal: _X_ Industrial: ___
Commercial: ___ Other (specify): _____
Specific use: _____

4. PLACE OF USE

_____ acres of land described as follows:

Subdivision of Section (District or Hydrographic Survey)	Section (Map No.)	Township (Tract No.)	Range	Acres
Water will be used within the current or future City limits as may be necessary				

Who is the owner of the land? various

If there are other sources of water for these lands, describe by file number:
NA

RECEIVED
MAY 31 2006
STATE ENGINEER OFFICE
LAS CRUCES, NM

RECEIVED
JUN - 1 2006
STATE ENGINEER OFFICE
LAS CRUCES, NM

File Number _____ _____ Trn Number: _____

T-00032, T-00814
TRN 361398

File Number:

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO DRILL SUPPLEMENTAL WELL TO SUPPLEMENT GROUND OR SURFACE WATERS

5. LOCATION OF EXISTING POINT OF DIVERSION (A, B, C, or D required, E or F if known)
(IF Surface Water Source, J also Required)
Please refer to Attachment A

A. ____1/4 ____1/4 ____1/4 Section:____ Township:____ Range:____ N.M.P.M.
in _____ County.

B. X =_____ feet, Y = _____ feet, N.M. Coordinate System
_____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

F. Lot No. _____, Block No. _____ of Unit/Tract _____ of the
_____ Subdivision recorded in _____ County.

G. Other: **City of Alamogordo La Luz Well Field (T-32 et al.) see attached map**

H. Give State Engineer File Number if existing diversion: **T-32-S-2 through T-32-S-9**

I. On land owned by (required): **City of Alamogordo**

J. Source of surface water supply:
a. Name of ditch, acequia, or spring: _____
b. Stream or water course: _____
c. Tributary of: _____

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO DRILL SUPPLEMENTAL WELL TO SUPPLEMENT GROUND OR SURFACE WATERS

6. LOCATION OF SUPPLEMENTAL WELL

A. LOCATION OF WELL (a, b, c, or d required, e or f if known)

a. **NE** 1/4 **SW** 1/4 **NW** 1/4 Section: **6** Township: **17S** Range: **10E** N.M.P.M. in **Otero** County.

b. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

c. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

d. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

e. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

f. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

g. Other: **see Attachments A and B**

h. Give State Engineer File Number if existing well __T-814 (replacement)

i. On land owned by (required): **City of Alamogordo**

j. If new well, give approximate depth (if known) ____ feet; Outside diameter of casing ___ inches. Name of driller and license number (if known) _____.

7. REASON FOR CHANGE

Application is made to supplement for the following reasons:
Existing well T-814 has capacity in excess of the permitted right to pump 269.89 ac-ft/yr under permit No. T-814. Applicant wishes to make use of that additional capacity, and to have more flexibility in well-field operation, without requesting any additional appropriation.

8. ADDITIONAL STATEMENTS OR EXPLANATIONS:

No new appropriation is sought. This application is for a permit to use the existing City of Alamogordo Well T-814 (Golf Course Well) as a supplemental well under permit T-32-S-2 through T-32-S-9 (La Luz Well Field), with pumping as a supplemental well limited to 160 ac-ft/yr. Total pumping from Well T-814 under all permits would be limited to 429.89 ac-ft/yr. A description of well T-814 is presented as Attachment B. An analysis of the effects of pumping under this application is presented as Attachment C. Well T-814 taps the same and only the same source as Wells T-32-S-2 through T-32-S-9.

File Number: _____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO DRILL SUPPLEMENTAL WELL TO SUPPLEMENT GROUND OR SURFACE WATERS

ACKNOWLEDGEMENT

(I, We) Pat McCourt City Manager affirm that the
(Please Print)
~~foregoing~~ statements are true to the best of (my, our) knowledge and belief.

_____ _____.
Applicant Signature Applicant Signature

ACTION OF STATE ENGINEER

This application is approved/denied/partially approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare; and further subject to the following conditions: _____

As per attached conditions.

Witness my hand and seal this 5th day of November, 20 08

JOHN R.D'ANTONIO,JR., STATE ENGINEER
State Engineer

BY _____
Andrea Jo Mendoza, M.S.
Water Resource Master District

STATE OF NEW MEXICO STATE ENGINEER

ATTACHMENT
Conditions of Approval

APPLICATION FOR PERMIT TO USE WELL T-814 AS A SUPPLEMENTAL POINT OF DIVERSION TO THE RIGHTS UNDER T-32

It is recommended that Applications for Permit to use existing well T-814 as a Supplemental point of diversion to the rights under T-32 in the Tularosa Basin be **approved** subject to the following conditions:

Permit Number: T-32

Priority: To be determined

Source: Shallow underground water of the Tularosa Basin.

Points of Diversion:

T-32-S-3: SE¼SW¼NW¼, Section 36, T15S, R10E, NMPM
T-32-POD11: Lot 10, Section 5, T16S, R10E, NMPM where Easting=411,766(m) and Northing=3,648,761(m), UTM Zone 13, NAD 27. Also described as X=1735419(ft), Y=709997(ft), NM State Plane, Central Zone, NAD 83
T-32-S-5: Lot 8, Section 5, T16S, R10E, NMPM
T-32-POD10: NW¼NW¼NW¼, Section 36, T15S, R10E, NMPM where Easting=412,233(m) and Northing=3,648,76(m), UTM Zone 13, NAD 27. Also described as X=1735709(ft), Y=718104(ft), NM State Plane, Central Zone, NAD 83
T-32-S-7: Lot 16, Section 5, T16S, R10E, NMPM
T-32-S-8: Lot 16, Section 5, T16S, R10E, NMPM
T-32-S-9: NW¼SE¼SW¼, Section 36, T15S, R10E, NMPM
T-814: NE¼SW¼NW¼, Section 6, Township 17 South, Range 10 East, NMPM where Easting=410,325 (m) and Northing=3,635,676(m), UTM Zone 13 NAD27. Also described as X=1,729,553(ft), Y=675,962(ft), NM State Plane, Central Zone, NAD 83

Purpose of Use: Municipal, domestic, industrial and related

Place of Use: City of Alamogordo as it exists now or may be extended

Amount of Water: The total diversion from well T-814 shall not exceed 429.89 acre-feet per annum. The total diversion from all wells under water right T-32 shall not exceed 4,572.88 acre-feet per annum.

1. This permit shall not be exercised to the detriment of valid existing water rights, shall not be contrary to conservation of water within the state, and shall not be detrimental to the public welfare of the State of New Mexico.

2. Well T-814 shall be equipped with a totalizing meter of a type and at a location approved by, and installed in a manner acceptable to the State Engineer. The permittee shall provide in writing, the make, model, serial number, date of installation, initial reading, units and dates of recalibration of each meter, and any replacement meter used to measure the diversion of water. No water shall be diverted unless equipped with a functional totalizing meter.

3. Written records of the amount of water diverted for each month from wells under water right files T-32 and T-814 shall be submitted to the District IV State Engineer Office in Las Cruces on or before the 10th day of the following month.

4. Only in years when the combined diversions from wells T-814 and T-814-S exceed 269.89acre-feet per annum will the additional water (160 acre-feet per annum) be counted toward beneficial use of the water right under T-32.

5. The permittee shall utilize the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical.

Witness my hand and seal this 28th day of November, A.D., 2008
John D' Antonio, Jr. P.E., State Engineer

By: _____
Andrea J. Mendoza
Water Resource Specialist Supervisor

STATE OF NEW MEXICO STATE ENGINEER

File Nos. T-32 and T-814

- **Prather Wells**

- Prather_T33_permit_2008

#4-15788

File #T-00033
Permit # T-00033-POD3
File Number: _____ TRN-408535
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

1. WATER RIGHT OWNER

Name: **City of Alamogordo** Work Phone: **505-439-4240**
Contact: **Brian L. Cesar** Home Phone: _____
Address: **2600 N. Florida Ave**
City: **Alamogordo** State: NM Zip: **88310**

2. PURPOSE OF USE

Domestic: ___ Livestock: ___ Irrigation: ___ Municipal: **X** Industrial: ___
Commercial: ___ Other (specify): _____
Specific use: **domestic, municipal, industrial, and related purposes**

3. QUANTITY

Consumptive Use: **1,354** acre-feet per annum
Diversion Amount: **1,354** acre-feet per annum

4. PLACE OF USE

_____ acres of land described as follows: **City of Alamogordo as it exists now or may be extended.**

Subdivision of Section (District or Hydrographic Survey)	Section (Map No.)	Township (Tract No.)	Range	Acres

Who is the owner of the land? **City of Alamogordo**

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2008 APR 25 PM 4:14
STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

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File Number: **T-33** Trn Number: _____
Form: wr-06 page 1 of 4

T-00033
TRN 408535

File Number: _____ (For OSE Use Only)

File #T-00033
Permit # T-00033-POD3
TRN-408535

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

5. CHANGE FROM

A. LOCATION OF WELL (Location a, b, c, d required, e or f if known)

a. SE ¼ SE ¼ SE ¼ Section: 35 Township: 17S Range: 9E N.M.P.M. in Otero County.

b. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

c. Latitude: 32 d 47.189 m ____ s Longitude: 105 d 58.956 m ____ s

d. East _____ (m), North _____ (m), UTM Zone 13, NAD 27 (27 or 83)

e. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

f. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

g. Other: _____

h. Give State Engineer File Number of existing well: T-33

i. On land owned by (required): City of Alamogordo

j. Is well to be plugged or capped? y If not, state for what use retained: capped, retained for use as an observation well

Do Not Write Below This Line

File Number: T-33 Trn Number: _____

Form: wr-06 page 2 of 4

T-00033
TRN 408535

File Number: _____ (For OSE Use Only)

File #T-00033
Permit # T-00033-POD3
TRN-408535

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

6. CHANGE TO

A. LOCATION OF WELL (Location a, b, c, d required, e or f if known)

a. SE ¼ SE ¼ SE ¼ Section: 35 Township: 17S Range: 9E N.M.P.M. in _____ County.

b. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

c. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

d. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

e. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

f. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

g. Other: **replacement well within 100 ft of original well**

h. Give State Engineer File Number of existing well: **T-33**

i. On land owned by (required): **City of Alamogordo**

j. If new well, give approximate depth(if known) **400** feet; Outside diameter of casing **14** inches. Name of driller and license number (if known) **Licensed driller has not been selected**.

7. REASON FOR CHANGE

Application is made to change location of well for the following reasons:
Well casing is 40 years old and deteriorated, and production has dropped off due to water level declines and loss in well efficiency

8. ADDITIONAL STATEMENTS OR EXPLANATIONS:
This well is locally referred to as Prather Well No. 2.
No new appropriation is sought.
Replacement well to be located within 100 feet of old well and within existing Administrative Block.

Well repairs performed during 2003 were only temporarily successful, and current condition of well is beyond repair. New construction is required to regain production capacity

Do Not Write Below This Line

File Number: **T-33** Trn Number: _____

Form: wr-06 page 3 of 4

T-00033
TRN 408535

File #T-00033
Permit # T-00033-POD3
TRN-408535

File Number: _____
(For OSE Use Only)

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

ACKNOWLEDGEMENT

(I, We) Russell Sayll affirm that the
(Please Print)
foregoing statements are true to the best of (my, our) knowledge and belief.

Russell Sayll
Applicant Signature

_____
Applicant Signature

ACTION OF STATE ENGINEER

This application is approved/denied/partially approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare; and further subject to the following conditions: _____

As per attached conditions.

Witness my hand and seal this 17th day of December, 2008

JOHN R.D'ANTONIO,JR., STATE ENGINEER

STATE OF NEW MEXICO STATE ENGINEER

ats Engineer

BY Marcos Delgado
Marcos Delgado, Water Resource Specialist

Do Not Write Below This Line

File Number: T-33 Trn Number: _____

Form: wr-06 page 4 of 4

T-00033
TRN 408535

Attachment
CONDITIONS OF APPROVAL

Application for Permit to Change Location of Wells T-33-POD3 and T-33-POD4

It is recommended that Application for Permit to Change Location of Well in the Tularosa Basin under file numbers T-33-POD3 and T-33-POD4 be **partially approved** for a combined total diversion of **500 acre-feet per annum** for municipal purposes subject to the following conditions.

1. Permit Number: T-33-POD3 and T-33-POD4

   Priority: To be determined

   Source: Underground Waters of the Tularosa Basin

   Points of Diversion: Well T-33-POD3 located in the SE¼SE¼SE¼ of Section 35, Township 17 South, Range 9 East, N.M.P.M. at approximately X=1,722,591.50 feet, Y=649,952.82 feet on the New Mexico State Plane Coordinate System, Central Zone, 1983 N.A.D.

   Well T-33-POD4 located in the NE¼SE¼NE¼ of Section 35, Township 17 South, Range 9 East, N.M.P.M. at approximately X=1,722,935.70, Y=653,579.71 feet on the New Mexico State Plane Coordinate System, Central Zone, 1983 N.A.D.

   Purpose of Use: Municipal, domestic, industrial and related

   Place of Use: The City of Alamogordo as it now exists or may be extended and at Holloman Air Force Base Southwest of Alamogordo

   Amount of Water: The combined total diversion of water from T-33-POD3 and T-33-POD4 shall not exceed 500 acre-feet per annum.

2. This permit shall not be exercised to the detriment of valid existing water rights, shall not be contrary to conservation of water within the state, and shall not be detrimental to the public welfare of the state of New Mexico.

3. Wells T-33-POD3 and T-33-POD4 shall be equipped with totalizing meters. The location, manner of installation, and type of meter shall be acceptable to the State Engineer. The permittee shall provide, in wiring, the make, model, serial number, date of installation, initial reading units, and dates of recalibration for each meter,

or replacement meter, used to measure the diversion of water. No water shall be diverted from any well unless equipped with a functional totalizing meter.

4. Written records of the amount of water diverted during each month from wells T-33-POD3 and T-33-POD4 shall be submitted to the District IV State Engineer Office in Las Cruces on or before the 10th day of the following month.

5. The permittee shall utilize the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum practical extent.

6. The new well shall be drilled by a well driller licensed in the State of New Mexico and a well record for new wells T-33-POD3 and T-33-POD4 shall be filed with the State Engineer within ten (20) working days of drilling the well.

7. Applications shall be filed to make wells T-33 and T-33-S observation wells within twenty (20) days of drilling the new wells. If applications are not received within the twenty (20) days, then wells T-33 and T-33-S shall be plugged completely, and record of plugging shall be filed with the District IV office of the State Engineer within twenty (20) days of the plugging using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; 19.27.4.30, paragraph C as follows:

   "**Methods and materials:** To plug a well, the entire well shall be filled from the bottom upwards to land surface using a tremie pipe. The well shall be plugged with neat cement slurry, bentonite based plugging material, or other sealing material approved by the state engineer for use in the plugging of non-artesian wells. Wells that do not encounter a water bearing stratum shall be immediately plugged by filling the well with drill cuttings or clean native fill to within ten (10) feet of land surface and by plugging the remaining ten (10) feet of the well to land surface with a plug of neat cement slurry, bentonite based plugging material, or other sealing material approved by the state engineer."

8. Proofs of Completion of Wells shall be filed with the District IV State Engineer on or before December 31, 2009.

9. Proof of Beneficial Use shall be filed with the District IV State Engineer Office in Las Cruces on or before December 31, 2009.

Date: 12/12/08

Marcos D. Delgado
Water Resource Specialist
WRAP, District IV

- **Mountain View Well**

- T3489POD2_permit_2007

4-13872

File #T-03489
Permit #T-03489-POD2
TRN-372942
#4-13872

File Number: _T-3489____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

1. WATER RIGHT OWNER

Name: _City of Alamogordo_____ Work Phone: 505-439-4200
Contact: _Pat McCourt_____ Home Phone: _____
Address: _1376 E. Ninth Street _____
_____
City: _Alamogordo_____ State: _NM Zip: _88310__

2. PURPOSE OF USE

Domestic: ___ Livestock: ___ Irrigation: X_ Municipal: _X Industrial: ____
Commercial: ___ Other (specify): _____
Specific use: _____

3. QUANTITY

Consumptive Use: _160.33 __ acre-feet per annum
Diversion Amount: _160.33___ acre-feet per annum

4. PLACE OF USE

_____ acres of land described as follows:

Subdivision of Section (District or Hydrographic Survey)	Section (Map No.)	Township (Tract No.)	Range	Acres
_water will be used within the currrent or future City limits____				_____
__as may be necessary_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Who is the owner of the land? ___various _____

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STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

T-03489
TRN 372942

File #T-03489
Permit #T-03489-POD2
TRN-372942
#4-13872

File Number: _T-3489____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

5. CHANGE FROM

A. LOCATION OF WELL (Location a, b, c, d required, e or f if known)

a. ____1/4 _NW_1/4 NE_1/4 Section:29_ Township:_16S Range: 10E_N.M.P.M. in _____Otero_____ County.

b. X =_____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

c. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

d. East 411,981 (m), North 3,639,203 (m), UTM Zone 13, NAD 27 (27 or 83)

e. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

f. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

g. Other: ____see attached map_____

h. Give State Engineer File Number of existing well: ___T-3489_____

i. On land owned by (required): ___City of Alamogordo_____

j. Is well to be plugged or capped? _plugged_ If not, state for what use retained: _____

T-03489
TRN 372942

File #T-03489
Permit #T-03489-POD2
TRN-372942
#4-13872

File Number: __T-3489____

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

6. CHANGE TO

A. LOCATION OF WELL (Location a, b, c, d required, e or f if known)

a. _SE_1/4 _NE_1/4 _NW 1/4 Section:29_ Township:_16S Range:10E_N.M.P.M. in _____Otero_____ County.

b. X =_____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant. U.S.G.S. Quad Map _____

c. Latitude: _____d _____m _____s Longitude: _____d _____m _____s

d. East 411,697 (m), North _3,639,071 (m), UTM Zone 13, NAD 27 (27 or 83)

e. Tract No. _____, Map No. _____ of the _____ Hydrographic Survey

f. Lot No. _____, Block No. _____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

g. Other: __see attached map_____

h. Give State Engineer File Number of existing well: _T-3489 _____

i. On land owned by (required): _City of Alamogordo_____

j. If new well, give approximate depth(if known) _700 feet; Outside diameter of casing 12 inches. Name of driller and license number (if known) ___contract not let_____.

7. REASON FOR CHANGE

Application is made to change location of well for the following reasons:
_Existing well is deteriorated beyond repair _
_Present location is limited and too small for replacement well_____
_To improve wellhead protection requirements for public water supply____

8. ADDITIONAL STATEMENTS OR EXPLANATIONS:

__No new appropriation is sought._____
__Replacement well will tap the same and only the same source._____
__The "move to" location is in the same administrative block (see attached map)
__The city_will equip well with totalizing meter as specified under_____
_____current permit conditions_____
_____
_____
_____
_____

T-03489
TRN 372942

File #T-03489
Permit #T-03489-POD2
TRN-372942
#4-13872

File Number: T-3489

NEW MEXICO OFFICE OF THE STATE ENGINEER
APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

ACKNOWLEDGEMENT

(I, We) Pat McCourt affirm that the
(Please Print)
foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature _____ Applicant Signature _____.

ACTION OF STATE ENGINEER

This application is approved/denied/partially approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare; and further subject to the following conditions: As Per Attached Conditions.

Witness my hand and seal this 31st day of May, 20 07

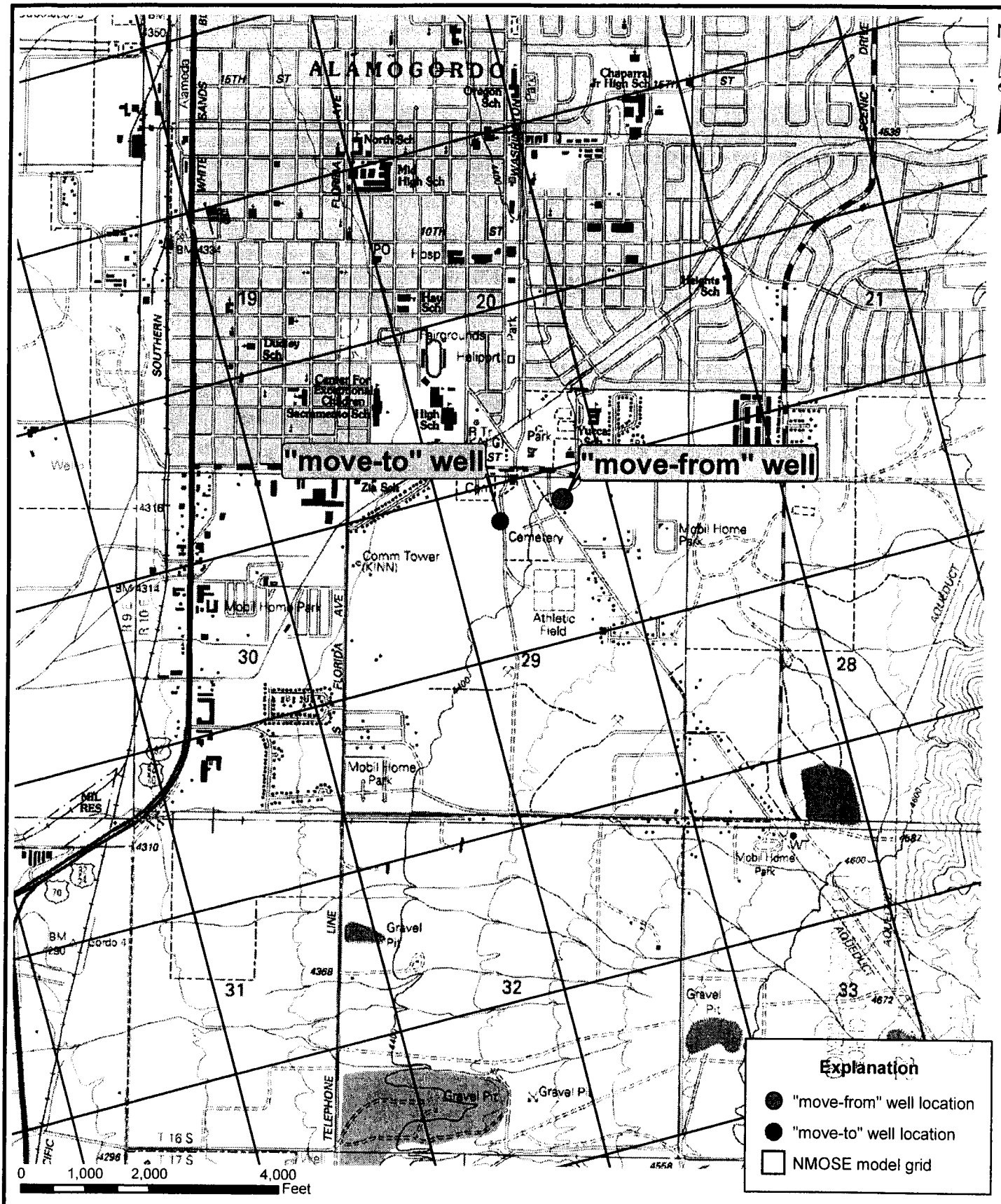
JOHN R.D'ANTONIO,JR., STATE ENGINEER

BY Christine Esquivias
Christine Esquivias
Water Resource Specialist

File Number: T-3489
Form: wr-06

Trn Number: _____

T-03489
TRN 372942



Map of the Alamogordo area showing location of the "move-from" well (True Valve well, T-3489), the proposed "move-to" well location, and a portion of the New Mexico Office of the State Engineer Administrative model grid.

JOHN SHOMAKER & ASSOCIATES, INC.

ATTACHMENT
Conditions of Approval

APPLICATION FOR PERMIT TO CHANGE LOCATION OF WELL

It is recommended that Application for Permit to Change Location of Well in the Tularosa Basin under file number T-3489-POD2 be **approved** for a total diversion of **160.33 acre-feet per annum** for irrigation and municipal purposes subject to the following conditions.

1. Permit Number: T-3489-POD2

   Priority: 12/31/1953

   Source: Underground Water of the Tularosa Basin

   Points of Diversion: T-3489-POD2, SE¼NE¼NW¼, Sec. 29, T16S, R10E, N.M.P.M.

   Purpose of Use: Irrigation and Municipal
   Place of Use: City of Alamogordo as it now exists or shall exist in the future.

   Amount of Water: 160.33 acre-feet/annum

2. This permit shall not be exercised to the detriment of valid existing water rights, shall not be contrary to conservation of water within the state, and shall not be detrimental to the public welfare of the state of New Mexico.

3. The permittee shall utilize the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum practical extent.

4. Well T-3489-POD2 shall be equipped with a totalizing meter. The location, manner of installation and type of meter shall be acceptable to the State Engineer. The permittee shall provide, in writing, the make, model, serial number, date of installation, initial reading units and dates of recalibration for each meter, or replacement meter, used to measure the diversion of water. No water shall be diverted from any well unless equipped with a functional meter.

5. Written records of the amount of water diverted during each month from well T-3489-POD2 shall be submitted to the District IV State Engineer Office in Las Cruces on or before the 10th day of the following month.

6. Proof of Completion of Well shall be filed with the District IV State Engineer Office in Las Cruces on or before March 31, 2008.

7. Proof of Beneficial Use shall be filed with the District IV State Engineer Office in Las Cruces on March 31, 2008.

Witness my hand and seal this 31st day of May, A.D., 2007
John D'Antonio, Jr. P.E., State Engineer

By: Christine Y. Esquivias
Christine Y. Esquivias, Water Resource Specialist

File No. T-3489

- **Snake Tank Well Field**

- NMSEO-Alamogordo Settlement Agreement
- T3825_HFR_3Rivers

SETTLEMENT AGREEMENT
BETWEEN THE
NEW MEXICO STATE ENGINEER
AND THE
CITY OF ALAMOGORDO
REGARDING
PERMIT NO. T-3825 *ET AL.*

THIS SETTLEMENT AGREEMENT BETWEEN THE NEW MEXICO STATE ENGINEER AND THE CITY OF ALAMOGORDO REGARDING PERMIT NO. T-3825 *ET AL.* ("Settlement Agreement") is entered into this 3rd day of July , 2007, by and between the New Mexico State Engineer ("State Engineer"), whose address is New Mexico State Engineer, P.O. Box 25102, Santa Fe, New Mexico, 87504, and the City of Alamogordo ("City"), whose address is City of Alamogordo, c/o City Manager, 1376 E. Ninth Street, Alamogordo, New Mexico, 88310, (collectively the "Parties").

RECITALS

WHEREAS, on September 6, 2000, the City of Alamogordo filed Application Nos. T-3825 through T-3825-S-9 with the State Engineer, which applications were amended in January of 2002, and on April 21, 2003 ("Application No. T-3825 *et al.*");

WHEREAS, there were 13 protests to Application No. T-3825 *et al.*;

WHEREAS, the State Engineer held an Administrative Hearing on Application No. T-3825 *et al.* on October 14 through 17 and October 20 through 24, 2003;

WHEREAS, on December 28, 2004, the State Engineer accepted and adopted the Report and Recommendation of the Hearing Examiner setting forth Findings of Fact and entering an Order partially approving Application No. T-3825 *et al.* subject to certain Conditions of Approval ("Permit No. T-3825 *et al.*");

WHEREAS, the State Engineer's decision was appealed to the Twelfth Judicial District Court for a *de novo* review in *City of Alamogordo and David and Julia Christopher and Tularosa Community Ditch Corporation, Dan C. Abercrombie, Elsie Il Bailey, Laymon Hightower, David Rankin, and Allen (Bill) Trammel v. New Mexico State Engineer, John R. D'Antonio, Jr. and HFR Corporation and Three Rivers Cattle Company, Ltd., Co.*, Twelfth Judicial District Court, CV-05-019 (Consolidated) Division II ("*City of Alamogordo v. New Mexico State Engineer*");

WHEREAS, the City of Alamogordo has reached a settlement agreement with David and Julia Christopher dated January 24, 2007, whereby the City has resolved any State Engineer concerns regarding the Christophers' declared groundwater and surface water rights on the High Nogal Ranch, including Well No. T-4316;

WHEREAS, the City of Alamogordo and the Village of Tularosa ("Village") entered into a stipulation on July 2, 2003, prior to the administrative hearing, whereby the Village withdrew its protest to Application No. T-3825 *et al.*, and that stipulation is in the process of being revised ("Revised Stipulation");

WHEREAS, there have been additional hydrologic investigations and analyses since the State Engineer issued Permit No. T-3825 *et al.* on December 28, 2004; and

WHEREAS, this Settlement Agreement memorializes the agreement of the Parties to set aside their different positions on legal and factual issues and the Parties believe that it is in their mutual interest to settle their differences though this Settlement Agreement.

COVENANTS

NOW, THEREFORE, in exchange for the mutual covenants, agreements, and consideration described herein, the Parties agree as follows:

1 La Luz Well Field (Office of the State Engineer ("OSE") File No. T-32-S-2 through T-32-S-9).

1.1 The City's present declared groundwater right for OSE File No. T-32-S-2 through T-32-S-9 (La Luz Well Field) is 4,573 acre-feet per year ("AFY"). The La Luz Well Field cannot physically produce the maximum declared groundwater right and the City's maximum historical diversion was 2,750 AFY in 1971. The City agrees to file a Proof of Beneficial Use with the State Engineer for 3,000 AFY for OSE File No. T-32-S-2 through T-32-S-9 (La Luz Well Field), making the City's net reduction in declared groundwater rights 1,573 AFY.

1.2 Within 180 days after the City files the Proof of Beneficial Use described in Paragraph No. 1.1, the State Engineer will review the terms of the Proof of Beneficial Use and, if accepted for filing, will issue a License to the City for 3,000 AFY for OSE File No. T-32-S-2 through T-32-S-9 (La Luz Well Field).

1.3 After a License is issued pursuant to Paragraph No. 1.2, the State Engineer will evaluate future applications considering the City's full licensed water rights for OSE File No. T-32-S-2 through T-32-S-9 (La Luz Well Field).

2 Prather Wells (OSE File No. T-33 and T-33-S).

2.1 The City will file an application to repair and deepen the Prather Wells (OSE File No. T-33 and T-33-S). In addition, the City has provided the State Engineer with current well pumping tests which indicate that the Prather Wells cannot produce the presently permitted water right.

2.2 In reviewing the City's application to repair and deepen the Prather Wells (OSE File No. T-33 and T-33-S) described in Paragraph No. 2.1 and based upon data from the current well pumping tests, the State Engineer has determined that the wells diversion and consumption should not exceed 500 AFY and the City accepts that finding. The permitted diversion from the Prather Wells is 1,354 AFY, making the City's net reduction of permitted groundwater rights from the Prather Wells 854 AFY.

3 The City's Golf Course Wells (OSE File No. T-814 and T-814-S) are permitted for 270 AFY.

4 The City's Mountain View Well (OSE File No. T-3489-repl) is permitted for 161 AFY.

5 For purposes of settlement, the City's reliable groundwater supply is determined to be 3,931 AFY (3,000 AFY from the La Luz Well Field (OSE File No. T-32-S-2 through T-32-S-9) + 500 AFY from Prather Wells (OSE File No. T-33 and T-33-S) + 270 AFY from the Golf Course Wells (OSE File No. T-814 and T-814-S) + 161 AFY from the Mountain View Well (OSE File No. T-3489-Repl)), making the City's net reduction in declared and permitted groundwater rights 2,427 AFY.

6 For purposes of settlement, the City's reliable surface water supply is determined to be 3,513 AFY.

7 For purposes of settlement, the City's total reliable surface water and groundwater supply are determined to be 7,444 AFY.

8 The population projections and per capita demands (165 gpcpd) set forth in the *City of Alamogordo's 40-Year Water Development Plan, 2005-2045 (Table 4.2* at 33*)* are reasonable.

9 The City's future water demands will be calculated through 2043, 40 years from the date of the amendment of Application No. T-3825 *et al.* In 2043, the City's water demands are estimated to be 10,644 AFY.

10 Subtracting the City's total reliable groundwater and surface water supply (7,444 AFY) from the City's estimated water demands in 2043 (10,644 AFY), the City needs an additional 3,200 AFY.

11 The additional hydrologic investigations conducted after the issuance of Permit No. T-3825 *et al.* provided information that indicates that the desalination facility will operate at 80% efficiency.

12 Because the desalination facility is estimated to be 80% efficient, the City will have to divert 4,000 AFY to provide 3,200 AFY of potable water to the City.

13 The City of Alamogordo has reached a settlement agreement with David and Julia Christopher dated January 24, 2007, whereby the City has resolved any State Engineer concerns regarding the Christophers' declared groundwater and surface water rights on the High Nogal Ranch, including Well No. T-4316.

14 Because history and statistics show that the City will not have available in every year what has been determined to be its total reliable groundwater and surface water supply, a condition of approval will be included in Revised Permit No. T-3825 *et al.* that allows the City to increase diversions in any calendar year up to 5,000 AFY, provided that the total annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet.

15 There is unappropriated groundwater available for appropriation which will allow for a new ongoing diversion of 4,000 AFY from the wells associated with Revised Permit No. T-3825 *et al.*, with a temporary increase in annual diversions up to 5,000 AFY provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet.

16 The ongoing diversion of 4,000 AFY from the wells associated with Revised Permit No. T-3825 *et al.*, with a temporary increase in annual diversions up to 5,000 AFY provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet, will not impair existing water rights or result in significant degradation of water quality.

17 A Condition of Approval will be included in Revised Permit No. T-3825 *et al.* that requires development and implementation of a monitoring plan acceptable to the State Engineer under which the State Engineer may order the temporary suspension of all or part of groundwater diversions under the Revised Permit if water levels or total dissolved solids indicate that impairment to valid existing senior water rights is likely to occur as a result of the City's exercise of Revised Permit No. T-3825 *et al.*

18 The ongoing diversion of 4,000 AFY from the wells associated with Revised Permit No. T-3825 *et al.*, with a temporary increase in annual diversions up to 5,000 AFY provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet, is not contrary to the conservation of water within the State. In fact, the use of desalination to convert brackish water to potable water promotes the conservation of water within the State.

19 The ongoing diversion of 4,000 AFY from the wells associated with Revised Permit No. T-3825 *et al.*, with a temporary increase in annual diversions up to 5,000 AFY provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet, is not detrimental to the public welfare of the State. In fact, the diversion of unappropriated brackish groundwater and conversion of that brackish water into potable water through desalination is beneficial to the public welfare of the State.

20 A Revised Stipulation has been entered between the City of Alamogordo and the Village of Tularosa. As set forth in the Revised Stipulation, if a situation exists in the future in which the Village of Tularosa needs an emergency supply of bulk water, an appropriate application will be filed with the State Engineer. If the necessary State Engineer permits are obtained and if the use is consistent with the Revised Stipulation, the City of Alamogordo may deliver water to the Village of Tularosa.

21 The Parties will jointly pursue revisions to Permit No. T-3825 *et al.* in a manner consistent with Exhibit No. 1, which is incorporated herein by reference and made part of this Settlement Agreement as if set forth fully herein.

21.1 The Parties will attempt to settle with the other parties to *City of Alamogordo v. New Mexico State Engineer* in a manner consistent with Exhibit No. 1.

21.2 If a settlement is not reached with all other parties to *City of Alamogordo v. New Mexico State Engineer*, the Parties to this Settlement Agreement will advocate for a revised permit consistent with Exhibit No. 1, both in District Court and on appeal, if any.

21.3 If the District Court or any appellate court orders that Permit No. T-3825 *et al.* should be revised in a manner consistent with Exhibit No. 1, at the conclusion of *City of Alamogordo v. New Mexico State Engineer*, the Parties will jointly move the District Court to remand Permit No. T-3825 *et al.* to the State Engineer for reissuance of the Permit in a manner consistent with Exhibit No. 1.

22 The Parties agree that any water rights granted pursuant to Revised Permit No. T-3825 *et al.* will be administered in accordance with the Conditions of Approval contained in Exhibit No. 1.

23 The Parties represent that they have carefully read and reviewed the terms of this Settlement Agreement and that they understand it.

24 The Parties further acknowledge that this instrument, including Exhibit No. 1, constitutes the entire agreement of this compromise settlement and all of the terms hereof are contractual and not mere recitals.

25 Because this is a Settlement Agreement, the Parties agree that the terms herein have no precedential effect on either Party. Nothing herein shall be construed as establishing any standard for any future application that the City may file with the State Engineer.

26 The Parties have developed this Settlement Agreement through good faith negotiations for the purpose of resolving legal and factual disputes, including pending litigation. No conduct, statements, offers, or compromises made in the course thereof

shall be construed as admissions against interest or be used in any legal forum or proceeding.

27 Each Party represents and warrants that it is authorized to execute this Settlement Agreement on behalf of the respective Parties hereto and does so freely and voluntarily.

28 Execution of this Settlement Agreement by all institutional entities signifies that all provisions of this Settlement Agreement have been approved by those entities' respective governing bodies and that those entities bind themselves to the obligations and benefits of this Settlement Agreement.

29 This Settlement Agreement shall be construed in accordance with the laws of the State of New Mexico.

30 This Settlement Agreement shall, unless otherwise indicated, be binding on and inure to the benefit of the Parties and their respective successors and assigns.

31 This Settlement Agreement incorporates all attachments included herewith and sets forth the entire agreement of the Parties with respect to the subject matter hereof. This Settlement Agreement may be amended only by written agreement executed by the Parties.

32 The Parties agree that the term of this Settlement Agreement shall be perpetual.

OFFICE OF THE STATE ENGINEER

for John R. D'Antonio
State Engineer
State of New Mexico

JOHN R. D'ANTONIO, JR. PE
NEW MEXICO
14846
STATE ENGINEER
REGISTERED PROFESSIONAL ENGINEER

CITY OF ALAMOGORDO

Donald E. Carroll
Mayor
City of Alamogordo

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

The foregoing instrument was acknowledged before me this 3nd day of July, 2007, by John R. D'Antonio, Jr., New Mexico State Engineer, on behalf of the Office of the State Engineer. Esteban Lopez

Dulces G Baca
Notary Public

My Commission Expires: 10/18/10

STATE OF NEW MEXICO)
) ss.
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this 11th day of July, 2007, by Donald E. Carroll, Mayor, on behalf of the City of Alamogordo.

Renee L Carlu
Notary Public

My Commission Expires: 7/21/10

REVISED PERMIT NO. T-3825 *ET AL.*

Application Nos. T-3825 thru T-3825-S-9 filed by the City of Alamogordo are partially approved for the diversion of up to 4,000 acre-feet per year ("afy"), subject to conditions, as follows:

Permittee: City of Alamogordo

Permit No.: T-3825 thru T-3825-S-9

Priority Date: September 6, 2000

Source of Water: Tularosa Underground Water Basin

Points of Diversion:

Well No.	Subdivision	Section	Township	Range
T-3825	NW¼SE¼SW¼	1	13 South	9 East
T-3825-S	SW¼SW¼NW¼	31	12 South	10 East
T-3825-S-2	SW¼SW¼SW¼	31	12 South	10 East
T-3825-S-3	SW¼NW¼NE¼	35	12 South	9 East
T-3825-S-4	SE¼SW¼SE¼	35	12 South	9 East
T-3825-S-5	NW¼SE¼NW¼	6	13 South	10 East
T-3825-S-6	NE¼NW¼NE¼	7	13 South	10 East
T-3825-S-7	SE¼SW¼NW¼	7	13 South	10 East
T-3825-S-8	NE¼NW¼SE¼	1	13 South	9 East
T-3825-S-9	NW¼SW¼NE¼	1	13 South	9 East

Amount of Water: Up to 4,000 afy. The diversion for any calendar year may be increased up to 5,000 acre-feet, provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet.

Purpose of Use: Municipal, Industrial, Commercial or Irrigation

Place of Use: Service area of the City of Alamogordo water system

CONDITIONS OF APPROVAL

1. Permit No. T-3825 thru T-3825-S-9 shall not be exercised to the detriment of valid existing water rights or in a manner that is contrary to the conservation of water within the state or detrimental to the public welfare of the State of New Mexico.
2. The total annual combined diversion of groundwater from Well Nos. T-3825 thru T-3825-S-9 under this permit shall not exceed 4,000 afy, except that the City may increase the total annual combined diversion of groundwater from said wells during any calendar year up to 5,000 acre-feet, provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet.
3. Prior to the drilling of Well Nos. T-3825 thru T-3825-S-9 under this permit, the City shall submit to the State Engineer an acknowledged statement, executed by the owner of the land upon which the wells are to be drilled, establishing that the permittee has permission to occupy such portion of the owner's land as is necessary to drill and operate the wells.
4. Prior to any diversions under this permit, Well Nos. T-3825 thru T-3825-S-9 shall be equipped with totalizing meters of a type and at locations approved by and installed in a manner acceptable to the State Engineer. The City shall provide in writing, the make, model, serial number, date of installation, initial reading, units, and dates of recalibration of each meter and any replacement meter used to measure the diversion of water under this permit. At a minimum, all meters shall be calibrated in accordance with industry standards annually and the results shall be submitted to the State Engineer's District 4 Office.
5. Records of the amount of water diverted from Well Nos. T-3825 through 3825-S-9 shall be submitted to the State Engineer on or before the 10th day of each month for the preceding month.
6. Prior to diversion of water under this permit, the permittee shall propose and implement a monitoring plan and system, acceptable to the State Engineer, involving the monitoring of groundwater levels and water quality. In January and July of each calendar year, the permittee shall measure water levels and total dissolved solids within the monitoring wells. The permittee shall report the data to the State Engineer, in writing, on or before January 31, and July 31 of each calendar year.

7. The State Engineer may order the temporary suspension of all or a part of groundwater diversions under this permit if the water levels or total dissolved solids reported pursuant to Condition of Approval No. 6 above, indicate that impairment to valid existing senior rights to divert water is likely to occur or that groundwater decline rates within the Tularosa Underground Water Basin Administrative Area are likely to exceed those allowed by the Tularosa Underground Water Basin Administrative Criteria as a result of the continued operation of Well Nos. T-3825 thru T-3825-S-9 at then-current diversion levels.
8. The permittee shall submit a formal Water Conservation Plan, which will include the reporting frequencies and methodology for determining the average per capita water use, for approval by the State Engineer prior to diversion of any water under this permit. The Water Conservation Plan shall be submitted to:

   Office of the State Engineer
   Water Use and Conservation Bureau
   PO Box 25102
   Santa Fe, NM 87504-5102

9. Issuance of this permit is predicated upon the expectation that the permittee's annual water use will not exceed the product of the population within its service area for each year times 0.1848237 (converts 165 gpcpd to afy). The permittee is expected to reduce its water use during periods of extended drought consistent with appropriate drought management plans. Additionally, the permittee shall utilize the highest and best technology available to ensure ongoing conservation of water to the maximum extent practical.
10. The permittee shall submit progress reports on its 40-year Water Plan and its Water Conservation Plan on or before February 1st of every fifth year, commencing five years after the date of approval of this Revised Permit.
11. Proof of Completion of Work(s) shall be filed on or before August 31, 2011.
12. The State Engineer shall retain jurisdiction over this permit for the purpose of ensuring that exercise of the permit does not violate the foregoing conditions.

JOHN R. D'ANTONIO, JR., P.E.
NEW MEXICO STATE ENGINEER

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SETTLEMENT AGREEMENT BETWEEN AND AMONG THE CITY OF ALAMOGORDO, HFR CORPORATION, AND THREE RIVERS CATTLE LTD., CO.

Alamogordo Exhibit 22

This Settlement Agreement is entered into this 20th day of November, 2007, between and among the City of Alamogordo ("City"), HFR Corporation ("HFR"), and Three Rivers Cattle Ltd., Co. ("Three Rivers") (collectively the "Parties"), which resolves all issues among them related to the pending appeal of the New Mexico State Engineer's acceptance and adoption of the Report and Recommendation of the Hearing Examiner in Hearing No. 02-035, OSE File No. T-3825 through T-3825-S-9, dated December 28, 2004, and any subsequent appeals or other disposition therefrom ("Settlement Agreement").

RECITALS

The following recitals constitute matters that are accepted by the Parties and are incorporated in this Settlement Agreement.

A. On September 6, 2000, the City of Alamogordo filed Application Nos. T-3825 through T-3825-S-9 with the New Mexico State Engineer ("State Engineer" or "OSE"), which applications were amended in January of 2002 and on April 21, 2003 ("Application No. T-3825 *et al.*" or "OSE File No. T-3825 *et al.*").

B. The City has designated its desalination project associated with Application No. T-3825 *et al.* as the Alamogordo Regional Water Supply Project ("Regional Project"). The Parties intend to include in this Settlement Agreement all instrumentalities and entities of the City that may participate in the development, use, and treatment of water associated with Application No. T-3825 *et al.*, including, without limitation, the Regional Project. Therefore, the references to the City in this Settlement Agreement are intended to include the City and such instrumentalities and entities.

C. On February 20, 2002, Three Rivers timely filed a protest with the State Engineer to Application No. T-3825 *et al.* Three Rivers operates a ranch and farm, and it owns and uses water rights identified as OSE File No. 0958, 2635 & T-0442 *et al.* Combined.

D. On February 21, 2002, HFR timely filed a protest with the State Engineer to Application No. T-3825 *et al.* HFR owns the water right identified as OSE File No. T-1797 *et al.* which is currently used on the pecan orchard operated by Sierra Blanca Pecan Ranch.

E. The State Engineer held an administrative hearing on Application No. T-3825 *et al.* on October 14 through 17 and October 20 through 24, 2003. On December 28, 2004, the State Engineer accepted and adopted the Report and Recommendation of the Hearing Examiner, which partially approved Application No. T-3825 *et al.* and authorized a diversion up to 3,000 acre-feet per year ("AFY"), subject to certain conditions of approval ("State Engineer's Decision"). Pursuant to the State Engineer's Decision, the diversion for any calendar year may be increased up to 4,500 AFY, provided that the sum of annual diversions for any consecutive five-year period does not exceed 15,000 acre-feet.

F. The State Engineer's Decision was appealed to the Twelfth Judicial District Court, State of New Mexico ("Court"), by David and Julia Christopher on January 14, 2005, by the City on January 21, 2005, and by Tularosa Community Ditch Corporation, Dan C. Abercrombie, Elsie I. Bailey, Laymon Hightower, David Rankin, and Allen (Bill) Trammel on January 26, 2005, and these appeals were consolidated. The consolidated cases have been captioned as *City of Alamogordo and David and Julia Christopher and Tularosa Community Ditch Corporation, Dan C. Abercrombie, Elsie I. Bailey, Laymon Hightower, David Rankin, and Allen (Bill) Trammel v. New Mexico State Engineer, John R. D'Antonio, Jr. and HFR Corporation and Three Rivers Cattle, Ltd. Co.*, Twelfth Judicial District Court, CV-05-019 (Consolidated) Division II ("Consolidated Appeal").

G. On January 31, 2005, HFR and Three Rivers entered their appearances in the Consolidated Appeal and indicated that they were aligned with the State Engineer in defending the State Engineer's Decision.

H. On July 3, 2007, the City and the State Engineer entered into a stipulation whereby both the City and State Engineer agreed to seek revisions to the State Engineer's Decision which, if approved by the Court, would result in a new permit under OSE File No. T-3825 *et al.* that would allow the City to divert up to 4,000 AFY, with certain conditions of approval ("SE/City Stipulation"). Pursuant to the SE/City Stipulation, the diversion for any calendar year could be increased up to 5,000 AFY, provided that the sum of annual diversions for any consecutive five-year period does not exceed 20,000 acre-feet. HFR and Three Rivers are not parties to the SE/City Stipulation and they are not bound by the terms and conditions of that stipulation.

I. This Settlement Agreement will impose on the City monitoring and remediation requirements in relation to the City's exercise of any permit issued under OSE

File No. T-3825 *et al.*, and this Settlement Agreement will also establish acceptable groundwater level declines and changes in water quality to protect HFR's and Three Rivers' water rights and associated wells from injury/damage that could result from the City's appropriation under any such permit. Further, this Settlement Agreement will establish well setback requirements and water right and water use prohibitions and quantitative restrictions in the Three Rivers area and well setback requirements in the HFR area. These agreements are the basis for HFR's and Three Rivers' decision to enter into this Settlement Agreement and to not oppose the SE/City Stipulation in the Consolidated Appeal.

J. This Settlement Agreement memorializes the agreements of the Parties which the Parties believe will settle their differences related to the Consolidated Appeal.

AGREEMENTS

NOW, THEREFORE, in exchange for the mutual covenants, agreements, and consideration described herein, the Parties agree as follows:

1. The Parties shall take all actions specified in this Settlement Agreement, either individually or collectively as specified herein, to resolve their claims against each other in the Consolidated Appeal. These actions are described in the paragraphs set forth below. The Parties shall fully and promptly comply with the undertakings described below, and each party is relying on and expecting such performance by the other parties as the basis for entering into this Settlement Agreement. Therefore, time is of the essence with respect to each party's performance under and enforcement of this Settlement Agreement.

2. The Parties shall take the following actions within the time frames specified in this Settlement Agreement:

    a. At least two weeks before the trial in this case, HFR and Three Rivers shall inform the Court that they do not oppose the entry of a judgment and decree that accepts the SE/City Stipulation.

    b. At least two weeks before the trial in this case, the Parties shall file a motion with the Court requesting entry of a judgment and decree that accepts and approves the monitoring and remediation provisions and well setback and water right and water use prohibitions and quantitative limitations of this Settlement Agreement, and that orders the Parties to implement and comply with those provisions, and further declares that:

i. Only Parties to this Settlement Agreement have standing to enforce this Settlement Agreement;

ii. Any enforcement proceeding related to the City's alleged violation of Paragraphs 3, 4, 6, or 7 of this Settlement Agreement will be limited to the following issues:

1. Whether the City has complied with the drilling and monitoring requirements set forth in Paragraph 6;

2. Whether the measured groundwater level declines in dedicated monitoring wells M-1, M-2, or M-3 exceed the acceptable groundwater level declines established in Graphs 1, 2, and 3 and Table 1 described in Paragraph 3;

3. Whether the measured water quality changes in dedicated monitoring well M-2 or M-3 exceeds the acceptable level(s) established in Paragraph 3;

4. Whether the City has undertaken the remedial actions required in Paragraph 7 in a timely fashion and in good faith; and

5. Whether the City has complied with the well setback and water right and water use prohibitions and quantitative limitations established in Paragraph 4.a. and the well setback limitations established in Paragraph 4.b.

iii. Any enforcement proceeding related to HFR's and/or Three Rivers' alleged violation of this Settlement Agreement will be determined by the issues raised.

c. In accordance with Paragraph 6, the City shall drill, develop, equip, maintain, and, if necessary, replace the three dedicated monitoring wells, and the City shall conduct monitoring activities at those dedicated monitoring wells.

d. If the City exceeds the standards established in Paragraph 3, the City shall take the remedial actions as required in Paragraph 7.

3. To protect HFR's and Three Rivers' now-existing water rights and wells from injury that could result from the City's appropriation under OSE File No. T-3825 *et al.*, the following standards shall govern groundwater level decline and water quality changes in dedicated monitoring wells M-1, M-2, and M-3 as between the City, HFR, and Three Rivers:

   a. Acceptable Groundwater Level Decline.

      i. Graphs 1, 2, and 3 and Table 1 establish the acceptable groundwater level decline(s) at dedicated monitoring wells M-1, M-2, and M-3. The baseline water level which will represent the starting point on Graphs 1, 2, and 3 and Table 1 will be the average of the water level measurements taken in the dedicated monitoring wells in the year prior to when the City first produces 500 AFY or more for two consecutive years from its wells under OSE File No. T-3825 *et al.* Production of 500 AFY for two years by the City is a predicate for commencement of calculation of groundwater declines using the graphs and table.

      ii. The baseline condition for each dedicated monitoring well shall be the average of the January and July groundwater levels (altitude in feet above sea level) measured in each dedicated monitoring well prior to initiation of City pumping as defined in Paragraph 3.a.i.

      iii. The annual groundwater level decline from the baseline condition in each dedicated monitoring well for each year shall be based upon the average water-level measurements taken in January and July of the same year, both represented in altitude in feet above sea level.

      iv. The annual groundwater level decline in each dedicated monitoring well shall be the mathematical difference between the altitude in feet above sea level of the baseline groundwater level measured in that well as defined in Paragraph 3.a.ii., and the annual groundwater level measured in the same well as defined in Paragraph 3.a.iii.

      v. The annual groundwater level decline in each dedicated monitoring well shall be compared to the acceptable groundwater level decline for that well represented in Graphs 1, 2, and 3 and Table 1 for the appropriate year after commencement of City pumping as defined in Paragraph 3.a.i. to determine whether the acceptable

groundwater level decline in any dedicated monitoring well has been exceeded.

vi. If the annual groundwater level declines in any of the dedicated monitoring wells M-1, M-2, or M-3 exceed the acceptable groundwater level declines represented in the appropriate Graphs 1, 2, and 3 and Table 1 for three consecutive years, the City shall implement one or more of the remedial actions required in Paragraph 7.

vii. Graphs 1, 2, and 3 and Table 1 were generated and agreed to by the Parties by applying the 2007 superposition version of the OSE's Tularosa Basin two-dimensional ground-water flow model as modified by OSE hydrologist Eric Keyes. Graphs 1, 2, and 3 and Table 1 present for each of the dedicated monitoring wells the acceptable simulated groundwater level declines due to existing and future appropriations within the Tularosa Basin over time, which include, among other input and assumptions, the simulated groundwater level declines projected by the model to occur due to the withdrawal by the City of a constant pumping of 3,000 AFY under OSE File No. T-3825 *et al.*

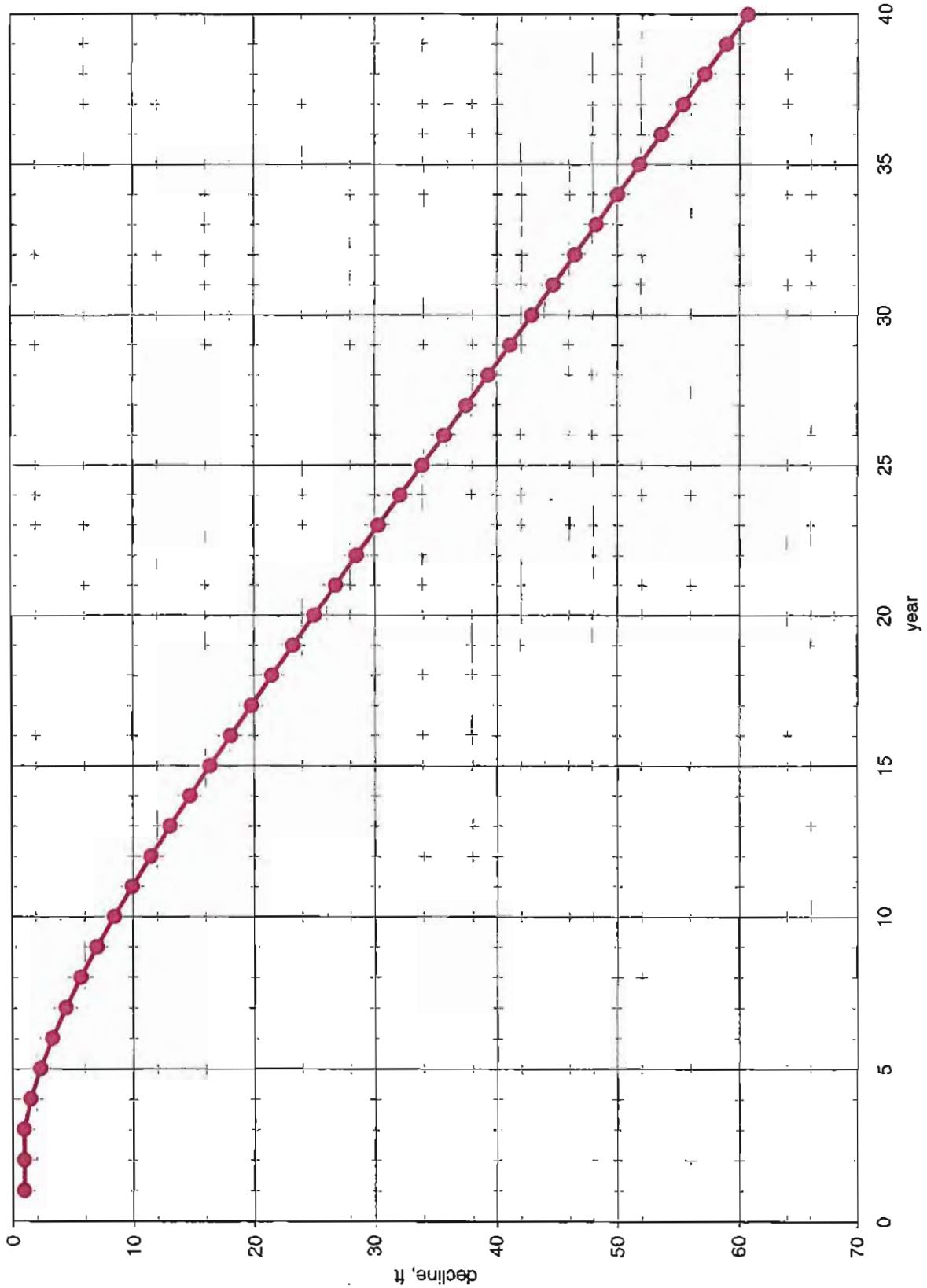
b. Water Quality. The maximum permissible total dissolved solids ("TDS") concentration in dedicated monitoring wells M-2 and M-3 shall not exceed 3,000 mg/L or the highest TDS measured in that well prior to commencement of City pumping as defined in Paragraph 3.a.i. plus 500 mg/L, whichever is higher. If the highest TDS measured in each calendar year in dedicated monitoring wells M-2 or M-3 exceeds the maximum permissible TDS for three consecutive years, the City shall implement one or more of the remedial actions required in Paragraph 7.

c. Dedicated monitoring well M-1 shall govern and only apply to the City's appropriations in relation to impacts on Three Rivers' water rights and wells. Dedicated monitoring wells M-2 and M-3 shall govern and only apply to the City's appropriation under OSE File No. T-3825 *et al.* in relation to impacts on HFR's water rights and wells.

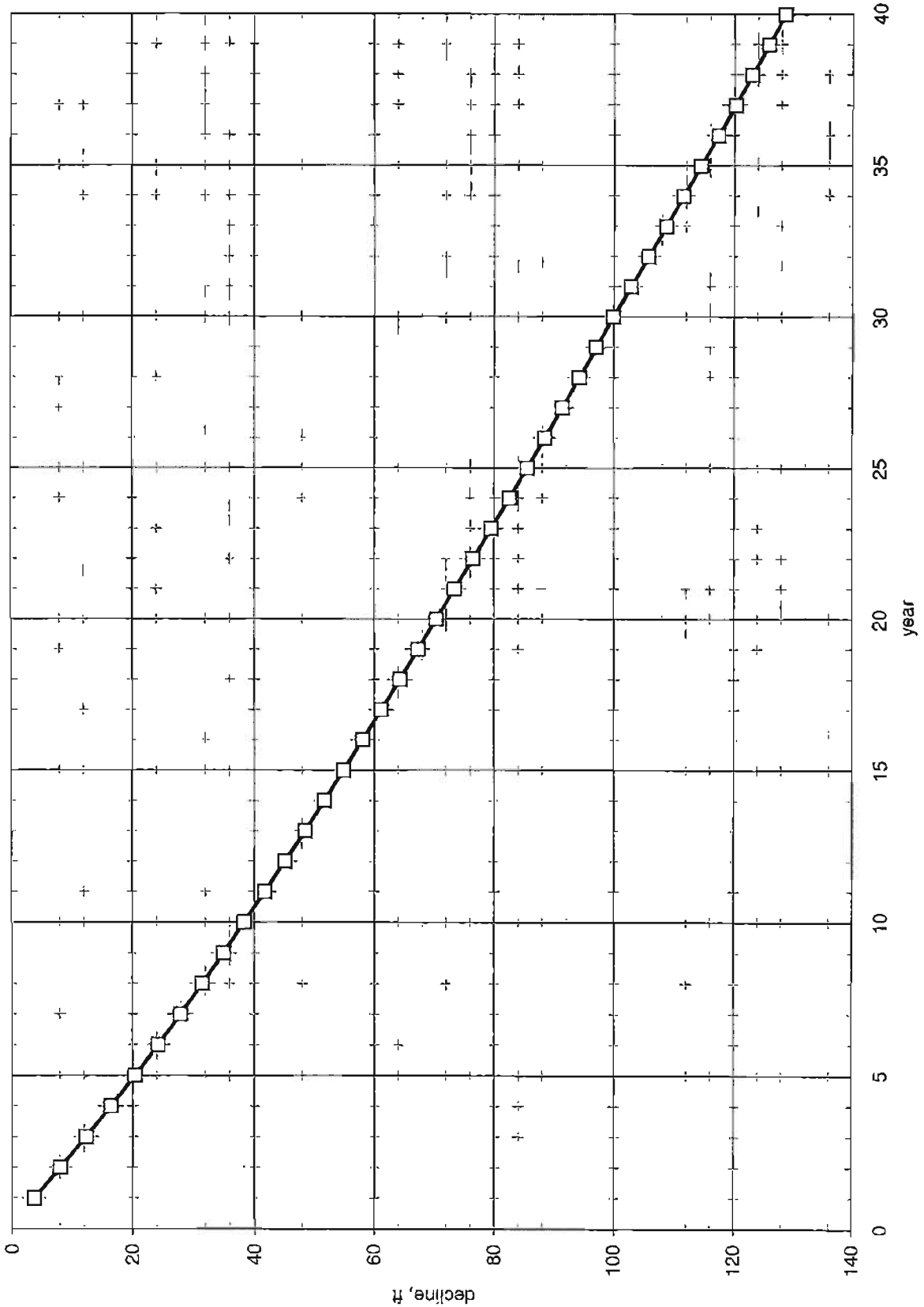
Table 1. Model-simulated groundwater level declines, in feet

Year	M-1 (16,41) acceptable groundwater level decline	M-2 (24,40) acceptable groundwater level decline	M-3 (25,41) acceptable groundwater level decline
1	<1.0	3.7	4.3
2	<1.0	8.0	9.0
3	<1.0	12.3	13.5
4	1.5	16.4	17.9
5	2.3	20.4	22.1
6	3.3	24.2	26.1
7	4.4	27.9	29.9
8	5.7	31.5	33.6
9	7.0	35.0	37.2
10	8.4	38.3	40.7
11	9.9	41.7	44.2
12	11.4	45.1	47.7
13	13.0	48.4	51.1
14	14.7	51.7	54.5
15	16.3	54.9	57.8
16	18.0	58.1	61.0
17	19.7	61.2	64.2
18	21.5	64.3	67.3
19	23.2	67.3	70.4
20	25.0	70.2	73.4
21	26.7	73.3	76.5
22	28.5	76.4	79.6
23	30.3	79.4	82.7
24	32.1	82.4	85.8
25	33.9	85.4	88.8
26	35.7	88.4	91.8
27	37.5	91.3	94.8
28	39.3	94.2	97.7
29	41.1	97.0	100.6
30	42.9	99.9	103.5
31	44.7	102.8	106.5
32	46.5	105.7	109.5
33	48.3	108.7	112.5
34	50.0	111.6	115.4
35	51.8	114.5	118.4
36	53.6	117.4	121.3
37	55.4	120.2	124.2
38	57.1	123.1	127.0
39	58.9	125.9	129.9
40	60.7	128.7	132.7

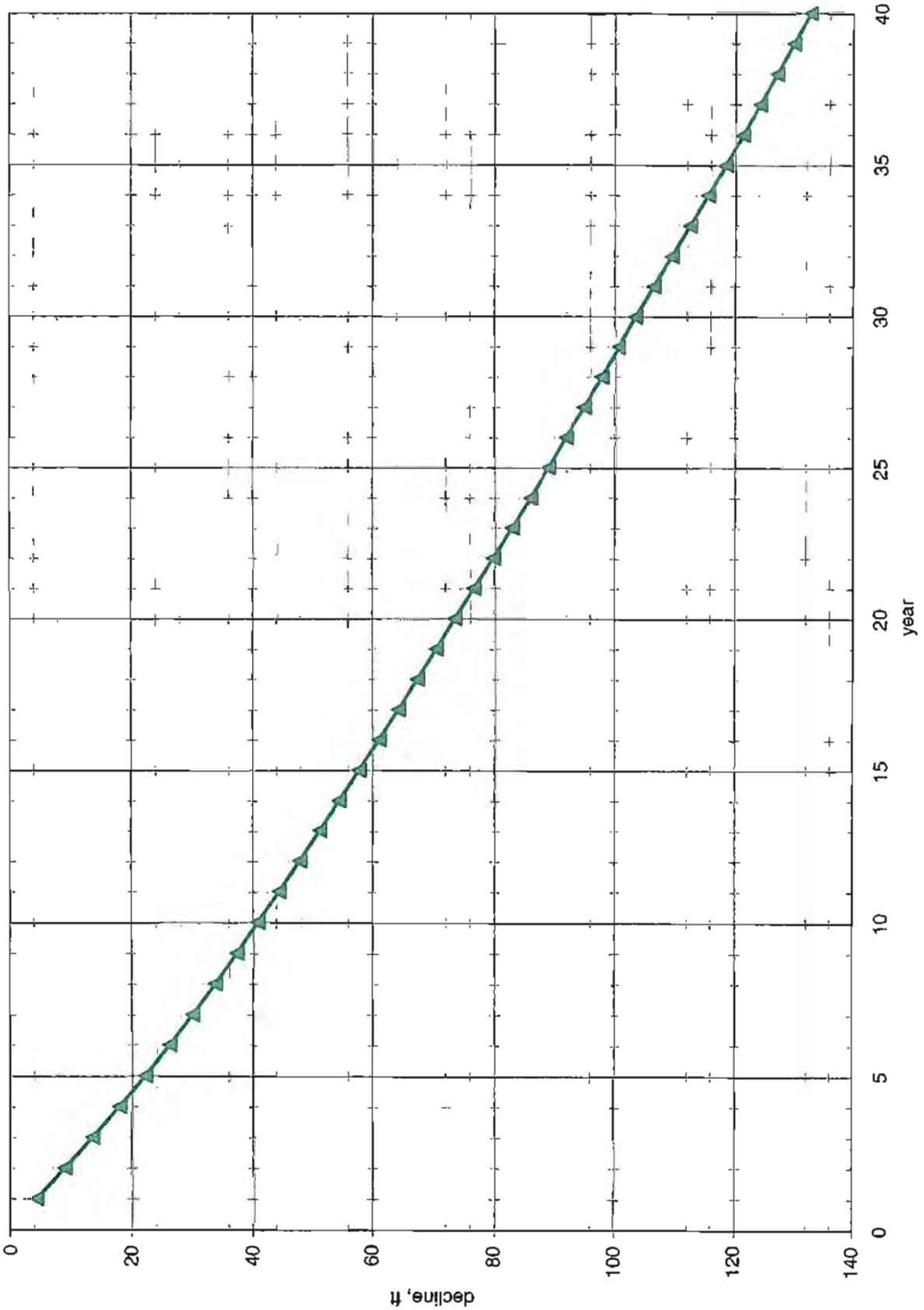
Graph 1. Acceptable Groundwater Level Decline at M-1



Graph 2. Acceptable Groundwater Level Decline at M-2



Graph 3. Acceptable Groundwater Level Decline at M-3



4. The following provisions will protect Three Rivers' and HFR's now-existing water rights and wells from injury that could result from potential City appropriations in the areas described below:

   a. In the area extending south from the southern boundary of Three Rivers' property (the southern boundary of Township 11 South) for a distance of three miles, the City and Three Rivers agree that the following additional restrictions shall apply:

      i. Within the area extending south of Three Rivers' southern boundary a distance of one and one-half miles, which is depicted as Area A in Figure 1, attached hereto, the City shall be prohibited from acquiring water rights, drilling wells, developing water rights, appropriating water from existing wells, or purchasing or in any way receiving water pumped from wells that are located in Area A, provided, however, that the City may purchase water rights in Area A for the sole purpose of retiring those water rights;

      ii. Within the area extending south of Three Rivers' southern boundary for a distance of one and one-half miles to three miles, which is depicted as Area B in Figure 1:

         1. For the purpose of limiting the City's potential water rights and appropriations in Area B, the maximum amount of water rights and/or water uses at any time in Area B shall be limited to 750 AFY, and this limitation shall be inclusive of all present and future water rights in both Areas A and B;

         2. If the City and Three Rivers agree in writing that there are less than 750 AFY of water rights and water uses in combined Areas A and B, in Area B only, the City may acquire water rights, drill new or supplemental wells, develop water rights, appropriate water from existing wells, or purchase or receive water from wells owned by others, provided, however, that the total amount of these water rights and/or water use/purchase alternatives shall not exceed the difference between the allowable maximum water rights or water use/purchase of 750 AFY and the quantity of all then-existing water rights and water uses in the combined Areas A and B;

3. If the City acquires a water right(s) in Areas A and/or B in accordance with Paragraphs 4.a.i. and 4.a.ii., and the amount of the acquired water right(s) exceeds the allowable maximum amount of 750 AFY in accordance with Paragraph 4.a.ii.:

    a. the City shall be prohibited from selling, leasing, or in any way allowing any person or entity to acquire or use the portion of the acquired water right(s) that are in excess of the allowable maximum amount of 750 AFY; and

    b. the City shall retire the amount of the acquired water rights that is in excess of 750 AFY within ninety (90) days of its water rights acquisition; and

4. If the City obtains water right(s) or purchases bulk water under the limitations set forth in Paragraphs 4.a.i. and 4.a.ii. and another individual or entity files an application for a new appropriation or transfer of water rights into Areas A and/or B, the City and Three Rivers shall both protest the application in an effort to ensure that the maximum diversion limitations established in Paragraphs 4.a.i. and 4.a.ii. will be protected and maintained.

iii. The City shall not protest applications filed with the OSE by Three Rivers seeking a permit to move, replace, or supplement Well Nos. T-442-S-4, T-442-S-15, or T-442-S-16 (Three Rivers' basin-fill wells), provided that Three Rivers' application(s) does not seek to increase the amount of its water rights.

b. In the area of HFR's property and the City's wells associated with OSE File No. T-3825 *et al.*, the following restrictions shall apply: the City shall not locate or develop any well or file for any permit under OSE File No. T-3825 *et al.* or any other filing for a permit with the OSE that would seek to establish a water right or water use in the area south of the now-existing site of Well No. T-3825-S-7 and north of the now-existing site of Well No. T-1797-S-6, which is depicted and identified in Figure 1 as Area D.

5. The following provisions will protect the City's now-existing water rights and wells from injury that could result from potential appropriations:

    a. Three Rivers shall not protest applications filed with the OSE by the City seeking a permit for a transfer of water rights, supplemental well, replacement well, or new appropriation of water rights, provided that the City's application(s) does not seek to increase the amount of its water rights in Area C in Figure 1 and the application complies with the limitations in Paragraphs 4.a.i. and 4.a.ii. for Areas A and B in Figure 1.

    b. Three Rivers shall be prohibited from acquiring water rights, drilling wells, developing water rights, appropriating water from existing wells, or purchasing or in any way receiving water pumped from wells owned by others in the area extending south from the southern boundary of Three Rivers' property (the southern boundary of Township 11 South), provided, however, that Three Rivers may purchase water rights south of its southern boundary for the sole purpose of retiring those water rights.

    c. HFR shall not locate or develop any well or file for any permit under OSE File No. T-1797 *et al.* or any other filing for a permit with the OSE that would seek to establish a water right or water use in the area north of the now-existing site of Well No. T-1797-S-6 and south of the now-existing site of Well No. T-3825-S-7, which is depicted and identified in Figure 1 as Area D, provided, however, that HFR may replace Well No. T-1797-S-7 within 300 feet of its now-existing location.

6. The following provisions describe the dedicated monitoring wells and the City's monitoring activities required for the City's compliance with the standards established in Paragraph 3 of this Settlement Agreement.

    a. Dedicated Monitoring Wells. At least one year before the City commences pumping as described in Paragraph 3.a.i., the City shall drill and equip dedicated monitoring wells M-1, M-2, and M-3, which are listed in Table 2 and shown on Figure 1. The City will acquire land or easements for these dedicated monitoring wells and will bear all costs related to drilling, testing, equipping, operating, maintaining, repairing, and replacing the dedicated monitoring wells. The City will keep the dedicated monitoring wells in good working order. The City will allow HFR and Three Rivers to observe the City's measurement and sampling activities. Upon written request by HFR and/or Three Rivers, the City

will provide reasonable access to the dedicated monitoring wells for inspection, measurement, and sampling by designated representatives of HFR and/or Three Rivers. The City may accompany and observe any inspection, measurement, or sampling activities engaged in by HFR and/or Three Rivers.

b. Monitor Well Design and Development. The dedicated monitoring wells will each be completed to the depths shown in Table 2. Geologic and geophysical logs will be made in each borehole. Screen will be set from the potentiometric surface to total depth, and gravel packed, and the well will be developed for a minimum of six hours. The specific capacity of each dedicated monitoring well will be measured and to be acceptable, a dedicated monitoring well must have a specific capacity of at least 1.0 gallons per minute per foot of drawdown in that well. If a dedicated monitoring well is drilled that does not have a specific capacity of at least 1.0 gallons per minute per foot of drawdown, the City will construct another dedicated monitoring well within 250 feet of the initial dedicated monitoring well and Table 1 and Graphs 1, 2, and 3 will not change. Each well will be equipped with a dedicated sampling pump, a water-level measuring tube, and a locking cap. A permanent identification marker showing the well number will be placed on each wellhead, and a permanent measuring point (generally a point on the top of the casing or measuring tube) will be marked, described and reported, and photographed. This installation data shall be furnished to HFR and Three Rivers.

c. Monitoring Activities. In the next quarter following the City's completion of each dedicated monitoring well, the City will commence monitoring activities in that well. The City will monitor these wells on a quarterly basis for the first two years and on a semi-annual basis thereafter. Quarterly measurements will be taken in the latter half of January, April, July, and October. Semi-annual measurements will be taken in January and July of each year. The City will provide to HFR and Three Rivers the water level and water quality data and laboratory reports resulting from the monitoring activities on or before February 15 and August 15 of each year for semi-annual data collection and on or before February 15, May 15, August 15, and November 15 for quarterly data collection.

i. Groundwater Level Measurements. The City will measure the depth to water (water levels) in each dedicated monitoring well listed in Table 2 with an appropriate measuring device (a weighted steel tape unless circumstances dictate otherwise.)

ii. Water Quality Monitoring Activities. The City will collect a water sample from dedicated monitoring wells M-2 and M-3 after the water-level measurement has been made and water has been discharged from the well for not less than 15 minutes or sufficient time to remove 5 casing-volumes, whichever is longer. Field measurements of specific conductance, pH, and temperature of the water will be made and recorded for those wells. Water samples will be collected in bottles furnished by an accredited analytical laboratory and the bottles will be marked and the samples collected and preserved according to the then-current protocols provided by the laboratory or according to ASTM standards if the laboratory does not provide protocols. The laboratory will analyze the samples for TDS and chloride-ion concentration. The TDS analyses will be done using the residual evaporative technique (EPA Method 160.1 (gravimetric, dried at 180°C) or its equivalent).

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TABLE 2. Dedicated Monitoring Wells

Well Number	**Twp., Rge, Section**	**Model Cell**	**Purpose**	**Depth or permitted depth**
M-1	12.9.26.122	16,41	Monitoring	Not less than 500 feet, or 300 feet below the water table, whichever is greater
M-2	13.9.12.334	24,40	Monitoring	Not less than 600 feet, or 400 feet below the water table, whichever is greater
M-3	13.9.13.212	25, 41	Monitoring	Not less than 600 feet, or 400 feet below the water table, whichever is greater

7. If the acceptable groundwater level decline or water quality change established in Paragraph 3 is exceeded in a dedicated monitoring well, the City shall take one or more of the following remedial actions:

    a. Water Level Remedies.

        i. For Dedicated Monitoring Well M-1. The City shall take one of the following actions if the acceptable groundwater level in dedicated monitoring well M-1 is exceeded, the choice of which is at the City's sole discretion:

            1. The City shall cease pumping from its wells under OSE File No. T-3825 *et al.* and all other City wells located in Area B in Figure 1, if any.

2. The City shall deliver water in such quantity and at such pressure to Three Rivers that, when that water is combined with the amount of water which can reasonably be pumped by Three Rivers' basin fill irrigation wells, Three Rivers will have 1,200 gallons per minute available at the irrigation system 7 days a week, 24 hours a day, over the period March 1 through October 31. Three Rivers will inform the City regarding the timing for water deliveries and the quantity of the required deliveries. The total combined water quantity delivered by the City and diverted by Three Rivers shall not exceed Three Rivers' water right of 780 AFY from its wells in the basin fill. The City shall deliver this water at a site located east of the railroad tracks, east of Highway 54, and north of County Road BO30, which is depicted as DP-1 on Figure 1. The TDS of the water provided by the City will not exceed the TDS of the water being pumped by Three Rivers from its basin-fill irrigation wells at that time. This is a limited remediation option that may be employed by the City for only one five-consecutive-year period every twenty years. If an excess groundwater level decline as described in Paragraph 3 continues beyond that five-year period, then the City must discontinue this option and resort to another remediation option in this Paragraph 7.a.i.

3. The City may purchase and retire sufficient water rights so that the reduction in area pumping results in water levels measured in dedicated monitoring well M-1 recovering to the acceptable water level specified in Table 1 and Graph 1 within a period not to exceed five years.

ii. For Dedicated Monitoring Wells M-2 and M-3. The City shall take one of the following actions if the acceptable groundwater level in dedicated monitoring well M-2 or M-3 is exceeded, the choice of which is at the City's sole discretion:

1. The City shall reduce pumping from its wells under OSE File No. T-3825 *et al.* by 1,082 AFY for every one foot that measured groundwater level decline at dedicated monitoring well M-2 exceeds the acceptable groundwater level decline

specified in Paragraph 3, Table 1 and Graph 2, or by 954 AFY for every one foot that measured groundwater level decline at dedicated monitoring well M-3 exceeds the acceptable groundwater level decline specified in Paragraph 3, Table 1 and Graph 3, whichever calculated amount leads to the greater reduction in the City's pumping from wells under OSE File No. T-3825 *et al.* These numbers represent unit response functions simulated with the OSE groundwater flow model. For example, if excess groundwater level declines occurred in three consecutive years and the excess groundwater level declines were equal to one foot as measured at dedicated monitoring well M-2 at the end of the third year, the City's diversions in the subsequent year would be reduced by 1,082 acre-feet. If groundwater level declines exceed the acceptable groundwater level decline in a fourth consecutive year, the City's diversions will be decreased again according to the unit response function. The City's diversions will continue to be decreased until groundwater level declines no longer exceed the acceptable groundwater level decline.

2. The City shall deliver water in such quantity and at such pressure to HFR that, when that water is combined with the amount of water which can reasonably be pumped by HFR's irrigation wells, HFR will have 5,000 gallons per minute available at the irrigation system 7 days a week, 24 hours a day, over the period July 1 through September 15; and 5,000 gallons per minute available at the irrigation system 6 days a week, 24 hours a day, over the period March 1 through June 30 and September 16 through October 31. HFR will inform the City regarding the timing for water deliveries and the quantity of the required deliveries. The total combined water quantity delivered by the City and diverted by HFR shall not exceed HFR's water right. The City shall deliver this water at a site located east of the railroad tracks, east of Highway 54, and south of Temporal Creek, which is depicted as DP-2 on Figure 1. The TDS of the water provided by the City will not exceed the TDS of the water being pumped by HFR from its irrigation wells at that time. This is a limited remediation option that may be employed

by the City for only one five-consecutive-year period every twenty years. If an excess groundwater level decline as described in Paragraph 3 continues beyond that five-year period, then the City must discontinue this option and resort to another remediation option in this Paragraph 7.a.ii.

3. The City may purchase and retire sufficient water rights so that the reduction in area pumping results in water levels measured in dedicated monitoring wells M-2 and/or M-3 recovering to acceptable water level(s) specified in Table 1 and Graphs 2 and 3 within a period not to exceed five years.

b. Water Quality Remedies. The City shall take one of the following actions if the allowable water quality change established in Paragraph 3 is exceeded in dedicated monitoring well M-2 or M-3, the choice of which is at the City's sole discretion:

i. The City shall reduce pumping from its wells under OSE File No. T-3825 *et al.* to cause the TDS in the dedicated monitoring well to recover to the allowable TDS as described in Paragraph 3.b. within a period not to exceed three years. If the TDS in a dedicated monitoring well does not recover within three years, the City must cease pumping until the TDS recovers to the allowable level, except the City must continue to provide water under Paragraph 7.b.ii.5. to meet its obligation to HFR.

ii. The City shall deliver to HFR water which meets the following criteria for quantity and quality. The water shall be of sufficient quantity so that when the water supplied by the City is combined with the amount of water which can reasonably be pumped by HFR's irrigation wells, HFR will have 5,000 gallons per minute available at the irrigation system 7 days a week, 24 hours a day, over the period July 1 through September 15, and 5,000 gallons per minute available at the irrigation system 6 days a week, 24 hours a day, over the period March 1 through June 30 and September 16 through October 31. The water supplied by the City shall have a TDS such that when the City's water is combined with HFR's water, the combined water will have a TDS equal to or less than the pumping-rate-weighted average in the HFR well loop as calculated from the TDS measurements taken in HFR wells during

the first two years of the three year period described in Paragraph 3.b. For example, if the pumping-rate-weighted average TDS in the HFR well loop is 2,400 mg/L in the year when the TDS in well M-2 or M-3 first exceeds the standards set forth in Paragraph 3.b. and the pumping-rate-weighted average TDS in the HFR well loop is 2,600 mg/L in the second year when M-2 or M-3 exceeds the standards set forth in Paragraph 3.b., then the quality of the combined water will be 2,500 mg/L.

1. HFR has an irrigation system well loop which irrigates the pecan orchard. For purposes of this provision, TDS and irrigation requirements will be calculated for HFR's irrigation system well loop.

2. The City shall conduct all measurements required to determine the pumping-rate-weighted average TDS in HFR's well loop, and shall pay all associated costs.

3. The pumping-rate weighted average TDS in the well loop will be calculated by multiplying the pumping rate measured at the time of sampling by TDS for each well, summing the product, and dividing by the sum of the pumping rate. For example, if the HFR well loop included 5 wells, and if the pumping rates and TDS levels in the wells were:

Pumping Rate (gpm)	TDS (mg/L)
600	2,400
800	2,200
800	2,600
1,000	2,500
1,200	2,400

Then the pumping-rate weighted average TDS would be calculated as follows:

Pumping-rate weighted average TDS = (600 x 2,400 + 800 x 2,200 + 800 x 2,600 + 1,000 x 2,500 + 1,200 x 2,400) $^{gpm\text{-}mg/L}$/4,400 gpm

Pumping-rate weighted average TDS = 2,423 mg/L

4. The City shall deliver the water at a site located east of the railroad tracks, east of Highway 54, and south of Temporal Creek, which is depicted as DP-2 on Figure 1.

5. If, at the end of three consecutive years of attempting this remediation, the water quality standards described in Paragraph 3.b. are still not being met, then the City must move to another remediation action, as specified in Paragraphs 7.b.i., 7.b.iii., or 7.c., and continue to deliver water to HFR in accordance with Paragraph 7.b.ii. (immediately above) until such time as the water quality standards at dedicated monitoring wells M-2 and M-3 are again being met. During this time period, if remediation option 7.b.i. would require the City to cease all pumping from its wells, it may continue to pump only those amounts of water necessary to meet the City's continuing obligation to HFR under Paragraph 7.b.ii.

iii. The City may purchase and retire sufficient water rights so that the reduction in area pumping results in TDS measured in dedicated monitoring wells M-2 and/or M-3 recovering to the acceptable TDS established in Paragraph 3.b. within a period not to exceed three years.

c. Alternative Remedies. In lieu of the remedial actions described in Paragraphs 7.a. and 7.b., if the acceptable groundwater level decline or water quality change in dedicated monitoring well M-1, M-2, or M-3 exceeds the standards established in Paragraph 3, then HFR or Three Rivers, in its sole discretion, may elect to enter into a written agreement with the City regarding other remedial actions that may be taken by the City that are acceptable to HFR and/or Three Rivers.

d. Costs for Infrastructure and Operations. The City will bear all costs of construction, operation, and maintenance of infrastructure required to

deliver water to Three Rivers and HFR as specified in Paragraph 7.a. and 7.b., including the costs of pumping and treatment if applicable.

8. HFR and Three Rivers will provide reasonable access to all of their existing wells and wells that may be drilled in the future so that the City may measure water levels and/or sample water quality quarterly for two years and twice a year thereafter. The City will be responsible for any damage that it causes to HFR's and/or Three Rivers' wells. The City will bear all costs, including electric demand costs, associated with such activities. The City will provide any information collected to HFR and/or Three Rivers within 30 days after the data are compiled.

9. The City shall not protest applications filed with the OSE by HFR seeking a permit to move, replace, or supplement wells under OSE File No. T-1797 *et al.*, provided that HFR's application(s) does not seek to increase the amount of its water rights, and further provided, that the new well may not be drilled further than 750 feet north of the now-existing location of the well being moved, replaced, or supplemented.

10. HFR shall not protest applications filed with the OSE by the City seeking a permit to move, replace, or supplement wells under OSE File No. T-3825 *et al.*, provided that the City's application(s) does not seek to increase the amount of its water rights, and further provided, that the new well may not be drilled further than 750 feet south of the now-existing location of the well being moved, replaced, or supplemented.

11. This Settlement Agreement is independent of the State Engineer's permit conditions for and administration of any permit issued under OSE File No. T-3825 *et al.* The Parties' rights and obligations related to the City's monitoring and remedial actions that are established in this Settlement Agreement are also independent of the State Engineer's consideration of impairment and requirements regarding monitoring and implementation of remedial action under OSE File No. T-3825 *et al.*

12. In any enforcement action brought by HFR and/or Three Rivers under this Settlement Agreement, the City shall not claim that the State Engineer's actions or inactions with respect to monitoring and remedial requirements under OSE File No. T-3825 *et al.* is inconsistent with the comparable requirements of this Settlement Agreement, and, further, the City shall not claim that the Court should not enforce this Settlement Agreement because of the actions or

inactions of the State Engineer in relation to the State Engineer's administration of OSE File No. T-3825 *et al.*

13. In proceedings other than enforcement proceedings under this Settlement Agreement, HFR and Three Rivers shall not claim in any administrative or judicial context that the acceptable groundwater level declines and water quality changes set forth herein define *per se* impairment under the New Mexico Water Code.

14. In accordance with Paragraph 2.d, the Parties shall jointly move the Court to retain jurisdiction over them and this Settlement Agreement, which will be accomplished by the Court entering a judgment and decree, which provides that:

    a. In the event of a failure by the City to comply with appropriate remedial measures after a triggering event, HFR and/or Three Rivers may file with the Court a motion for an order to show cause why the City should not be found to be in violation of the terms of this Settlement Agreement. An expedited hearing on HFR's and/or Three Rivers' show cause motion will be sought, and if there is a determination that the City is in violation of this Settlement Agreement, the Court shall enter an order requiring that the City immediately cease its violation(s) and implement the appropriate remedial measures established in Paragraph 7 or order the City to comply with the requirements of Paragraph 4.

    b. In the event of a failure by HFR and/or Three Rivers to comply with this Settlement Agreement, the City may file with the Court a motion for an order to show cause why HFR and/or Three Rivers should not be found to be in violation of the terms of this Settlement Agreement. An expedited hearing on the City's show cause motion will be sought, and if there is a determination that HFR and/or Three Rivers is in violation of this Settlement Agreement, the Court shall enter an order requiring that HFR and/or Three Rivers immediately cease its violation(s) and abide by this Settlement Agreement.

    c. The Court also shall have authority to enter an order(s) awarding such additional equitable and monetary relief as is appropriate under the circumstances. The prevailing party or parties in such proceedings shall also be entitled to recover its or their reasonable attorneys' fees and costs.

15. The Court's approval of all terms and conditions of this Settlement Agreement, including, without limitation, its entry of the judgment and decree and its retention of jurisdiction as specified in Paragraphs 2.d. and 14, is a condition precedent to this Settlement Agreement becoming effective and the Parties performance hereunder.

16. If Three Rivers decides to sell its property and/or associated water rights, Three Rivers will advise the City of its intent to sell its land and associated water rights or solely the water rights before it offers the land and associated water rights or solely the water rights to any person or entity.

17. If HFR or Sierra Blanca Pecan Ranch decides to sell its property and/or associated water rights, it will offer its land and associated water rights or solely the water rights to the City before it offers the land and associated water rights or solely the water rights to any person or entity. HFR and Sierra Blanca Pecan Ranch are currently parties to a real estate contract to sell HFR's property and water rights, and this transaction does not constitute a sale of property under this Settlement Agreement.

18. If the City acquires Three Rivers' land and associated water rights or solely its water rights pursuant to Paragraph 16 or if Three Rivers' water rights are permanently transferred from Three Rivers' land, the requirements related to Three Rivers in Paragraphs 3, 4, 6, and 7 shall no longer apply or be valid.

19. If the City acquires HFR's land and associated water rights or solely its water rights pursuant to Paragraph 17 or if HFR's water rights are permanently transferred from HFR's land, the requirements related to HFR in Paragraphs 3, 4, 6, and 7 shall no longer apply or be valid.

20. This Settlement Agreement is not intended to, and expressly does not, give third-party beneficiary status to any person or entity not an express party hereto.

21. Except for the standards, requirements, prohibitions and limitations established in this Settlement Agreement that apply to the Parties' respective present and future water rights and water uses, nothing in this Settlement Agreement shall be construed as establishing any standard for any future applications that the Parties may file with the OSE.

22. All notices, correspondence, documents, or transmittal of records of data required pursuant to this Settlement Agreement shall be sent to the Parties at the

following addresses, unless the other Parties are notified of an address change in writing:

City of Alamogordo:
Pat McCourt, City Manager
1376 E. Ninth Street
Alamogordo, NM 88310
Fax: (575) 329-4396

Counsel to the City of Alamogordo:
James C. Brockmann, Esq.
Stein & Brockmann, P.A.
P.O. Box 5250
Santa Fe, NM 87505
Fax: (505) 986-1028

HFR:
Gordon K. Yahney
P.O. Box 1933
Roswell, NM 88202
Fax: (575) 523-0611

Three Rivers:
Kendall Joyce
118 W. First Street
Roswell, NM 88201
Fax: (575) 623-1801

Counsel to HFR and Three Rivers:
Jeffrey L. Fornaciari, Esq.
Hinkle, Hensley, Shanor & Martin, LLP
P.O. Box 2068
Santa Fe, NM 87504-2068
Fax: (505) 982-8623

23. The Parties have developed this Settlement Agreement through good faith negotiations for the purpose of resolving legal and factual disputes related to pending litigation. No conduct, statements, offers, or compromises made in the course thereof shall be construed as admissions against interest or be used in any legal forum or proceeding.

24. Each party represents that its authorized agent has carefully read and reviewed the terms of this Settlement Agreement and that it, through its authorized agent, understands it.

25. Each party represents and warrants that it is authorized to execute this Settlement Agreement on behalf of the respective Parties hereto and does so freely and voluntarily.

26. Execution of this Settlement Agreement by all institutional entities signifies that all provisions of this Settlement Agreement have been approved by those

entities' respective governing bodies and that those entities bind themselves to the obligations and benefits of this Settlement Agreement.

27. This Settlement Agreement shall be construed in accordance with the laws of the State of New Mexico.

28. This Settlement Agreement shall be binding on and inure to the benefit of the Parties and the respective successors and assigns of their water rights, and shall be binding on all instrumentalities and entities of the City that may participate in the development, use, and treatment of water associated with OSE File No. T-3825 *et al.*, including, without limitation, the Regional Project.

29. This Settlement Agreement may be signed in counterparts by the Parties, and the counterparts executed by each party, when combined, will constitute a complete agreement.

30. This Settlement Agreement constitutes the entire agreement of the Parties with respect to the subject matter hereof. This Settlement Agreement may be amended only by written agreement executed by the affected Parties.

HFR CORPORATION

George Yates

CITY OF ALAMOGORDO

for Donald E. Carroll
Mayor
City of Alamogordo

THREE RIVERS CATTLE LTD., CO.

Kay McMillan

SIERRA BLANCA PECAN RANCH

As the real estate contract purchaser and successor-in-interest to HFR

STATE OF NEW MEXICO)
) ss.
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this 20th day of November, 2007, by ~~Donald E. Carroll~~, Mayor, on behalf of the City of Alamogordo. Ron Griggs

Notary Public

My Commission Expires: 7/21/10

STATE OF NEW MEXICO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of November, 2007, by Kay McMillan, on behalf of the Three Rivers Cattle Ltd., Co.

Notary Public

My Commission Expires:

STATE OF NEW MEXICO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of November, 2007, by George Yates, on behalf of the HFR Corporation.

Notary Public

My Commission Expires:

STATE OF NEW MEXICO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of November, 2007, by _____, on behalf of Sierra Blanca Pecan Ranch.

_____
Notary Public

My Commission Expires:

entities' respective governing bodies and that those entities bind themselves to the obligations and benefits of this Settlement Agreement.

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HFR CORPORATION

Arlene Rowland – Vice President

CITY OF ALAMOGORDO

Donald E. Carroll
Mayor City of
Alamogordo

THREE RIVERS CATTLE LTD., CO.

Kay McMillan

SIERRA BLANCA PECAN RANCH

As the real estate contract purchaser and successor-in-interest to HFR

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HFR CORPORATION

George Yates

CITY OF ALAMOGORDO

Donald E. Carroll
Mayor
City of Alamogordo

THREE RIVERS CATTLE LTD., CO.

Kay McMillan

SIERRA BLANCA PECAN RANCH

As the real estate contract purchaser and successor-in-interest to HFR

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29. This Settlement Agreement may be signed in counterparts by the Parties, and the counterparts executed by each party, when combined, will constitute a complete agreement.

30. This Settlement Agreement constitutes the entire agreement of the Parties with respect to the subject matter hereof. This Settlement Agreement may be amended only by written agreement executed by the affected Parties.

HFR CORPORATION

George Yates

CITY OF ALAMOGORDO

Donald E. Carroll
Mayor
City of Alamogordo

THREE RIVERS CATTLE LTD., CO.

Kay McMillan

SIERRA BLANCA PECAN RANCH

As the real estate contract purchaser and successor-in-interest to HFR

STATE OF NEW MEXICO)
) ss.
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this_____ day of November, 2007, by Donald E. Carroll, Mayor, on behalf of the City of Alamogordo.

_____
Notary Public

My Commission Expires:_____

STATE OF NEW MEXICO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this_____ day of November, 2007, by Kay McMillan, on behalf of the Three Rivers Cattle Ltd., Co.

_____
Notary Public

My Commission Expires:_____

STATE OF NEW MEXICO)
) ss.
COUNTY OF Chaves)

The foregoing instrument was acknowledged before me this 12 day of December, 2007, by Arlene Rowland, on behalf of the HFR Corporation.

Diana B. Woodard
Notary Public

My Commission Expires: 2/7/08

STATE OF NEW MEXICO)
) ss.
COUNTY OF OTERO)

The foregoing instrument was acknowledged before me this _____ day of November, 2007, by Donald E. Carroll, Mayor, on behalf of the City of Alamogordo.

_____
Notary Public

My Commission Expires:

STATE OF NEW MEXICO)
) ss.
COUNTY OF CHAVES)

The foregoing instrument was acknowledged before me this 26th day of November, 2007, by Kay McMillan, on behalf of the Three Rivers Cattle Ltd., Co.

_____
Notary Public

My Commission Expires: July 31, 2009

STATE OF NEW MEXICO)
) ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of November, 2007, by George Yates, on behalf of the HFR Corporation.

_____
Notary Public

My Commission Expires:

STATE OF NEW MEXICO)
) ss.
COUNTY OF Otero)

The foregoing instrument was acknowledged before me this 21st day of November, 2007, by Dario Antunez, on behalf of Sierra Blanca Pecan Ranch.

Sharon Burton
Notary Public

My Commission Expires: June 20, 2009

Appendix D.

NMOSE GPCD Calculator Spreadsheet

NMOSE GPCD CALCULATOR

Gallons per Capita - v2.05

Release Date: August 2015

This spreadsheet-based GPCD calculator is designed to help quantify and track water uses associated with water distribution systems. The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons on the left below. Descriptions of each sheet are also given below.

It should be noted that all the recorded data should be from actual metered results and should not include any estimates.

THE FOLLOWING KEY APPLIES THROUGHOUT:

- Value to be entered by user
- Dropdown box, pick from list
- Value calculated based on input data
- No longer available for input

Look for the following boxes that provide addition Instructions Info

Please begin by providing the following information, then proceed through each sheet:

NAME OF CITY OR UTILITY: Alamogordo — New Mexico

REPORTING YEARS: Enter the most recent reporting year: 2019 — Data can be entered back to: 2013

NAME OF CONTACT PERSON: Annie McCoy — **E-MAIL:** amccoy@shomaker.com — **TELEPHONE:** 505-345-3407 **Ext.**

SELECT THE REPORTING UNITS FOR VOLUME DATA: Gallons (US) — For unit converter click here: Converter

Instructions & Utility	This sheet
Census Data	Census data and the portal to get the data from the Census website
Single-Family	Single-Family residential gallons and population
Multi-Family	Multi-Family residential gallons and population
ICI & Other Metered	Other data including Commercial, Industrial and Institutional [1.3] and Other metered [1.4] categories
Reuse	Data related to water reuse projects
Total Diverted	Total Production and Diverted Water
Reported Data	The calculated data graphical review of most common performance indicators
Annual Performance	The calculated data graphical review of **annual** performance indicators
Monthly Performance	The calculated data graphical review of **monthly** performance indicators
Definitions	Use this sheet to understand terms used in the audit process

All parties reserve the right to validate the data recorded in this document. This does not bind the OSE or the Utility to the results. It is a tool used for planning purposes.

estions or comments regarding the software please contact us at: waternm@state.nm.us

Census Information Data Table 2.1

Info

Click here to access the Census Web site

OR

Click here for instructions on how to find the data on the Census website

2019 TO 2013

Use the most recent census data

Return to Instructions

DATA

US Census Table	Description		INPUT
DP-1	**Profile of General Population and Housing Characteristics**	**Census Year**	**2018 ACS**
Subject			
Relationship	In group quarters	Total	**611**
Housing Occupancy	Total housing units	Total	**15,117**
	Occupied housing units		**12,768**
	Vacant housing units		**2,349**
Households by Type	Average household size	Total	**2.4**

Formula: Household Size = Total Population / Total Number of Housing Units

Vacancy Rate %	15.5%

COMMENTS:

DATA INPUT SHEET

Alamogordo

Instructions

3. SINGLE-FAMILY RESIDENTIAL (SFR)

Return to Instructions

MONTHLY DATA

TABLE 3.1 Info

2019 TO 2013

SFR BILLED WATER CONSUMPTION (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	48,583,887	48,264,400	47,910,174	57,954,563	73,404,810	84,702,304	96,044,390	97,458,603	88,310,376	75,379,167	61,956,306	53,696,297
2018	51,067,757	50,859,107	49,693,253	61,881,047	83,168,826	101,577,098	100,626,186	88,121,042	87,514,074	76,759,201	59,412,662	52,246,417
2017	49,705,026	47,640,081	48,611,372	64,068,190	77,653,977	90,872,096	102,335,643	86,337,574	80,935,613	80,016,617	64,872,465	57,745,564
2016	61,467,502	50,244,707	57,197,535	68,119,877	78,975,769	88,290,381	105,125,851	108,382,369	87,756,126	72,608,075	68,434,244	57,810,371
2015	46,506,324	54,261,504	49,366,695	62,336,984	75,924,874	84,332,438	98,040,943	90,599,387	92,652,018	83,301,841	67,713,624	57,425,886
2014												
2013												

TABLE 3.2 Info

Active Connections Only

You have chosen to enter Active Connections Only, enter the monthly values below, or enter annual values in table 3.8 Check message above Table 3.3 to see if additional data is required.

NUMBER OF SFR CONNECTIONS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	11,075	11,105	11,141	11,177	11,225	11,229	11,243	11,225	11,263	11,255	11,207	11,203
2018	10,899	10,903	10,920	10,992	11,049	11,109	11,126	11,132	11,153	11,116	11,134	11,141
2017	10,901	10,894	10,929	10,937	10,996	11,034	11,018	10,986	10,994	10,930	10,976	10,959
2016	10,703	10,672	10,754	10,803	10,857	10,893	10,901	10,929	10,979	11,014	10,971	10,958
2015	9,839	10,413	10,447	10,671	10,678	10,691	10,736	10,704	10,749	10,761	10,746	10,755
2014												
2013												

TABLE 3.3 Info

You have entered Active Connections Only in Table 3.2; leave the cells below blank

INACTIVE (ZERO USE) SFR CONNECTIONS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

TABLE 3.4

Formula = (No. of Connections - No. of Zero Use Accounts) * Ave. Household Size

SFR POPULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	26,580	26,652	26,738	26,825	26,940	26,950	26,983	26,940	27,031	27,012	26,897	26,887
2018	26,158	26,167	26,208	26,381	26,518	26,662	26,702	26,717	26,767	26,678	26,722	26,738
2017	26,162	26,146	26,230	26,249	26,390	26,482	26,443	26,366	26,386	26,232	26,342	26,302
2016	25,687	25,613	25,810	25,927	26,057	26,143	26,162	26,230	26,350	26,434	26,330	26,299
2015	23,614	24,991	25,073	25,610	25,627	25,658	25,766	25,690	25,798	25,826	25,790	25,812
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

TABLE 3.5

Formula = Billed Water Consumption (SFR only) / Calculated Population (SFR only)

SFR GPCD CALCULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	58.96	64.68	57.80	72.02	87.90	104.77	114.82	116.70	108.90	90.02	76.78	64.42
2018	62.98	69.42	61.16	78.19	101.17	127.00	121.56	106.40	108.98	92.81	74.11	63.03
2017	61.29	65.08	59.78	81.36	94.92	114.38	124.84	105.63	102.25	98.40	82.09	70.82
2016	77.19	70.06	71.49	87.58	97.77	112.57	129.62	133.29	111.02	88.61	86.64	70.91
2015	63.53	77.54	63.51	81.13	95.57	109.56	122.74	113.76	119.72	104.05	87.52	71.77
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

COMMENTS:

ANNUAL DATA

TABLE 3.6

ANNUAL CONSUMPTION

TABLE 3.7

ANNUAL CALCULATION
833,665,275
862,926,671
850,794,218
904,412,807
862,462,517
N/A
N/A

TABLE 3.8

AVG. ANNUAL CONNECTIONS

TABLE 3.9

AVG CONN. CALCULATION
11,196
11,056
10,963
10,870
10,599
N/A
N/A

TABLE 3.10 Info

CALCULATED GROWTH RATE
1.26%
0.85%
0.86%
2.55%
N/A
N/A

TABLE 3.11

No. VACANT SFR CONNECTIONS

TABLE 3.12 Info

SIZE OF HOUSEHOLD
2.4
2.4
2.4
2.4
2.4
2.4
2.4

TABLE 3.13 Info

SFR POPULATION
26,870
26,535
26,311
26,087
25,438
N/A
N/A

TABLE 3.14 Info

ANNUAL SFR GPCD
85.00
89.10
88.59
94.98
92.89
N/A
N/A

DATA INPUT SHEET

Alamogordo

4. MULTI-FAMILY RESIDENTIAL (MFR)

Return to Instructions

Instructions

MONTHLY DATA

2019 TO 2013

TABLE 4.1 Info

MFR BILLED WATER CONSUMPTION (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

TABLE 4.2

If only Current Number of Units is Known, put this number in Table 4.7

NUMBER OF MFR UNITS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

TABLE 4.3

Formula = (Number of Units - Vacant MFR Connections) * Ave. Household Size

MFR POPULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2018	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

TABLE 4.4

Formula = MFR Billed Water Consumption (Monthly) / MFR Population (Monthly)

MFR GPCD CALCULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2018	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

ANNUAL DATA

TABLE 4.5

ANNUAL CONSUMPTION

TABLE 4.6

ANNUAL CALCULATION
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.7

No. CURRENT UNITS

TABLE 4.8

ANNUAL UNIT CALCULATION	
N/A	
N/A	X
N/A	X
N/A	X
N/A	X
N/A	
N/A	

X = calculated from Single-family growth-rate data

TABLE 4.9 Info

MFR POPULATION
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.10

VACANT MFR CONNECTIONS
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.11 Info

ANNUAL MFR GPCD
N/A
N/A
N/A
N/A
N/A
N/A
N/A

DATA INPUT SHEET

5. INDUSTRIAL, COMMERCIAL & INSTITUTIONAL (ICI) AND OTHER METERED

Return to Instructions

Info

Alamogordo

Instructions

MONTHLY DATA

2019 TO 2013

TABLE 5.1

ICI WATER CONSUMPTION (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	21,388,922	22,501,912	23,319,103	24,419,527	26,461,891	29,773,896	30,010,009	31,053,746	31,767,931	28,208,575	27,040,526	23,429,343
2018	23,177,506	23,632,721	22,696,688	25,326,697	29,598,031	31,905,459	31,404,485	32,001,747	32,290,104	29,362,812	24,216,194	23,817,457
2017	21,507,342	20,629,971	24,560,425	25,414,272	28,152,557	29,297,457	34,962,461	31,414,869	30,261,566	30,876,184	27,117,839	26,350,673
2016	23,544,418	23,632,264	25,518,277	19,508,150	35,724,071	30,074,722	31,229,854	36,278,126	35,095,537	28,818,413	27,444,622	24,924,425
2015	16,483,349	51,526,360	32,545,762	28,501,809	57,870,218	47,783,266	50,595,543	38,925,445	52,847,114	48,092,814	37,655,493	34,972,844
2014												
2013												

TABLE 5.2

OTHER METERED (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

COMMENTS:

ANNUAL DATA

TABLE 5.3

ICI ANNUAL CONSUMPTION

TABLE 5.4

ICI GPCD
31.84
33.25
33.64
35.07
52.36
N/A
N/A

TABLE 5.5

ICI ANNUAL CALCULATED
319,375,383
329,429,900
330,545,618
341,792,881
497,800,017
N/A
N/A

TABLE 5.6

OTHER ANNUAL CONSUMPTION

TABLE 5.7

OTHER METERED GPCD
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 5.8

OTHER ANNUAL CALCULATED
N/A
N/A
N/A
N/A
N/A
N/A
N/A

DATA INPUT SHEET | Info

6. REUSE

Return to Instructions

Alamogordo

Instructions

MONTHLY DATA

2019 TO 2013

TABLE 6.1

REUSE DIVERSIONS (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	49,123,247	46,705,120	55,426,800	60,520,680	59,955,880	56,014,040	61,470,640	55,606,320	44,154,440	52,547,000	46,353,560	39,531,800
2018	32,448,240	44,386,320	58,809,548	59,150,052	57,700,720	53,796,160	56,444,080	63,415,440	59,548,280	45,171,720	53,195,840	47,929,753
2017	25,161,059	45,926,766	57,792,687	54,460,272	61,016,604	58,513,736	53,035,504	49,110,800	53,625,077	52,092,642	49,911,370	32,256,430
2016	21,587,744	42,464,274	55,132,028	50,822,972	56,651,463	60,444,384	62,233,600	50,287,427	22,724,853	47,936,201	40,975,186	30,124,585
2015	20,673,044	51,066,554	51,147,410	53,847,286	57,411,805	61,966,953	53,449,088	57,223,982	46,209,922	41,164,691	42,596,685	32,096,732
2014												
2013												

COMMENTS:

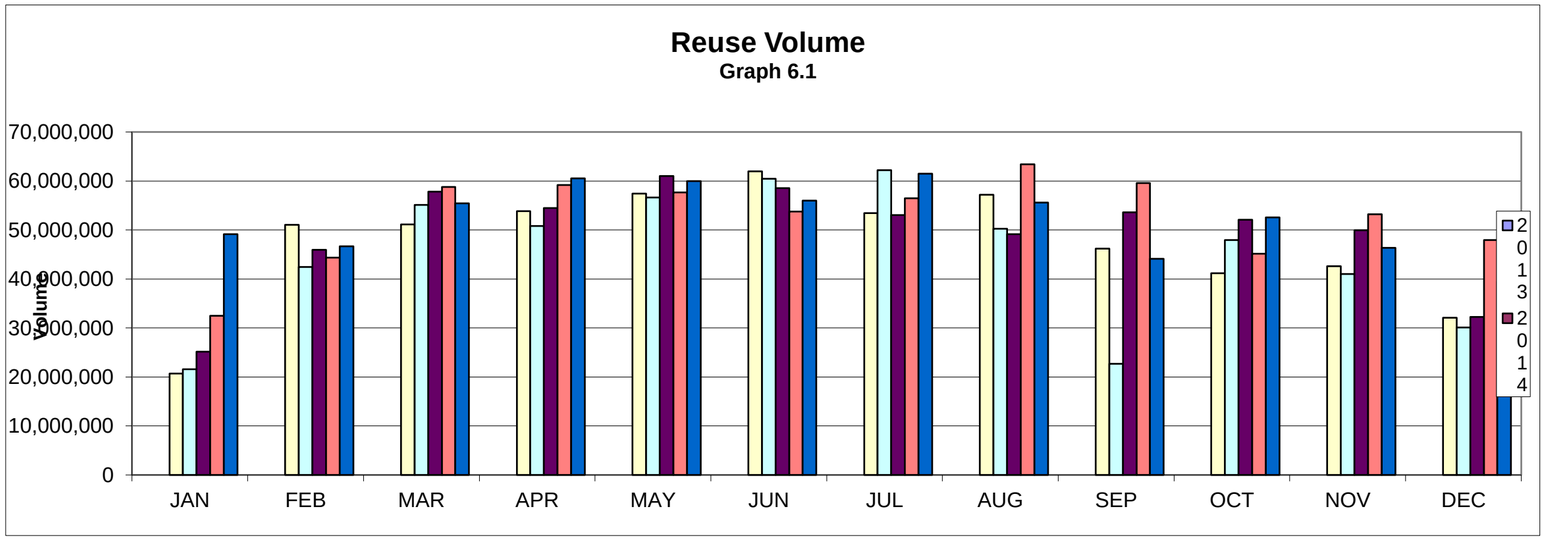
ANNUAL DATA

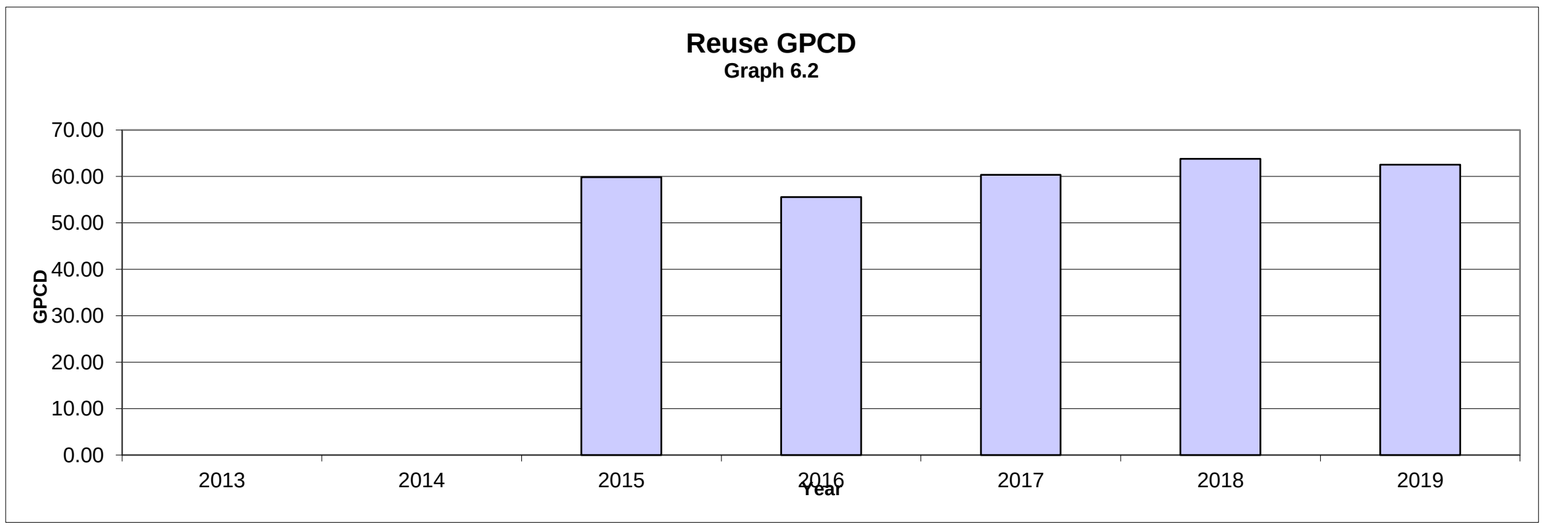
TABLE 6.2

REUSE ANNUAL DIVERSIONS

TABLE 6.3

REUSE GPCD
62.55
63.79
60.34
55.56
59.83
N/A
N/A





NMOSE GPCD Calculator v2.02

DATA INPUT SHEET

Alamogordo

7. TOTAL WATER DIVERTED AND SUPPLIED

Return to Instructions

MONTHLY DATA

TABLE 7.1 2019 TO 2013

TOTAL WATER DIVERTED (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	103,763,762	89,668,042	118,702,863	136,870,455	137,895,847	167,155,411	178,079,971	140,102,657	147,683,242	116,244,160	111,193,009	132,387,153
2018	110,709,542	100,510,998	136,349,569	143,314,907	137,004,183	153,300,465	176,773,168	157,472,538	136,092,712	115,050,772	120,998,997	133,473,908
2017	100,370,000	79,730,000	115,800,000	107,450,000	129,620,000	143,480,000	150,130,000	130,680,000	127,830,000	124,630,000	111,225,463	100,455,413
2016	113,100,000	101,000,000	144,860,000	120,340,000	142,550,000	148,970,000	159,390,000	152,010,000	124,100,000	131,690,000	131,750,000	102,680,000
2015	113,500,000	143,950,000	147,630,000	133,070,000	139,060,000	144,640,000	156,420,000	139,220,000	164,280,000	125,580,000	124,400,000	121,000,000
2014												
2013												

TABLE 7.2

IMPORTED WATER (Monthly)(Gallons (US)) Info

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

TABLE 7.3

EXPORTED WATER (Monthly) (Gallons (US)) Info

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019												
2018												
2017												
2016												
2015												
2014												
2013												

TABLE 7.4 **Formula = Total Water Diverted + Imported water - Exported Water**

TOTAL WATER SUPPLY (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	103,763,762	89,668,042	118,702,863	136,870,455	137,895,847	167,155,411	178,079,971	140,102,657	147,683,242	116,244,160	111,193,009	132,387,153
2018	110,709,542	100,510,998	136,349,569	143,314,907	137,004,183	153,300,465	176,773,168	157,472,538	136,092,712	115,050,772	120,998,997	133,473,908
2017	100,370,000	79,730,000	115,800,000	107,450,000	129,620,000	143,480,000	150,130,000	130,680,000	127,830,000	124,630,000	111,225,463	100,455,413
2016	113,100,000	101,000,000	144,860,000	120,340,000	142,550,000	148,970,000	159,390,000	152,010,000	124,100,000	131,690,000	131,750,000	102,680,000
2015	113,500,000	143,950,000	147,630,000	133,070,000	139,060,000	144,640,000	156,420,000	139,220,000	164,280,000	125,580,000	124,400,000	121,000,000
2014	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0

Table 7.5

SYSTEM TOTAL GPCD (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	122	117	139	166	162	203	209	164	179	136	135	155
2018	132	132	162	176	163	188	210	187	167	137	149	159
2017	120	106	139	133	155	178	180	157	158	149	138	120
2016	137	135	175	150	172	186	193	184	155	159	164	124
2015	141	197	183	170	172	185	194	172	210	156	159	150
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

COMMENTS:

ANNUAL DATA

TABLE 7.6

ANNUAL TOTAL DIVERTED

TABLE 7.7

ANNUAL TOTAL DIVERTED CALC
1,579,746,573
1,621,051,759
1,421,400,876
1,572,440,000
1,652,750,000
N/A
N/A

TABLE 7.8

ANNUAL TOTAL IMPORTED

TABLE 7.9

ANNUAL TOTAL IMPORT CALC
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 7.10

ANNUAL TOTAL EXPORTED

TABLE 7.11

ANNUAL TOTAL EXPORT CALC
N/A
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 7.12

ANNUAL TOTAL WATER SUPPLY
1,579,746,573
1,621,051,759
1,421,400,876
1,572,440,000
1,652,750,000
0
0

TABLE 7.13

TOTAL POP. EST.
27,481
27,146
26,922
26,698
26,049
N/A
N/A

TABLE 7.14

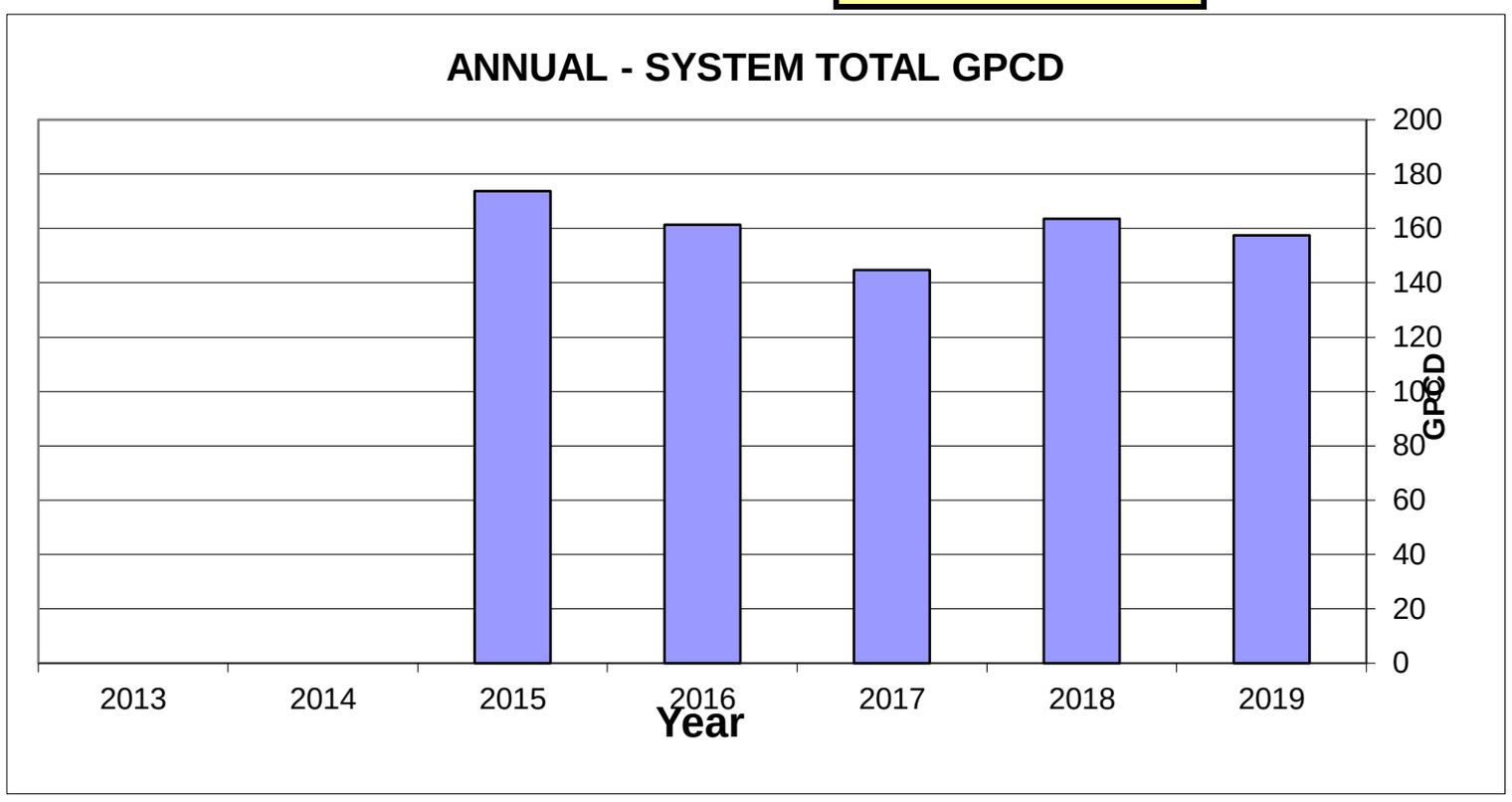
Year	SYSTEM TOTAL GPCD
2019	**157.50**
2018	**163.61**
2017	**144.65**
2016	**161.36**
2015	**173.83**
2014	**NA**
2013	**NA**

8. SUMMARY GPCD REPORTED DATA

Alamogordo		
2019	To:	2013

ANNUAL

Year	SYSTEM GPCD
2019	157.50
2018	163.61
2017	144.65
2016	161.36
2015	173.83
2014	NA
2013	NA

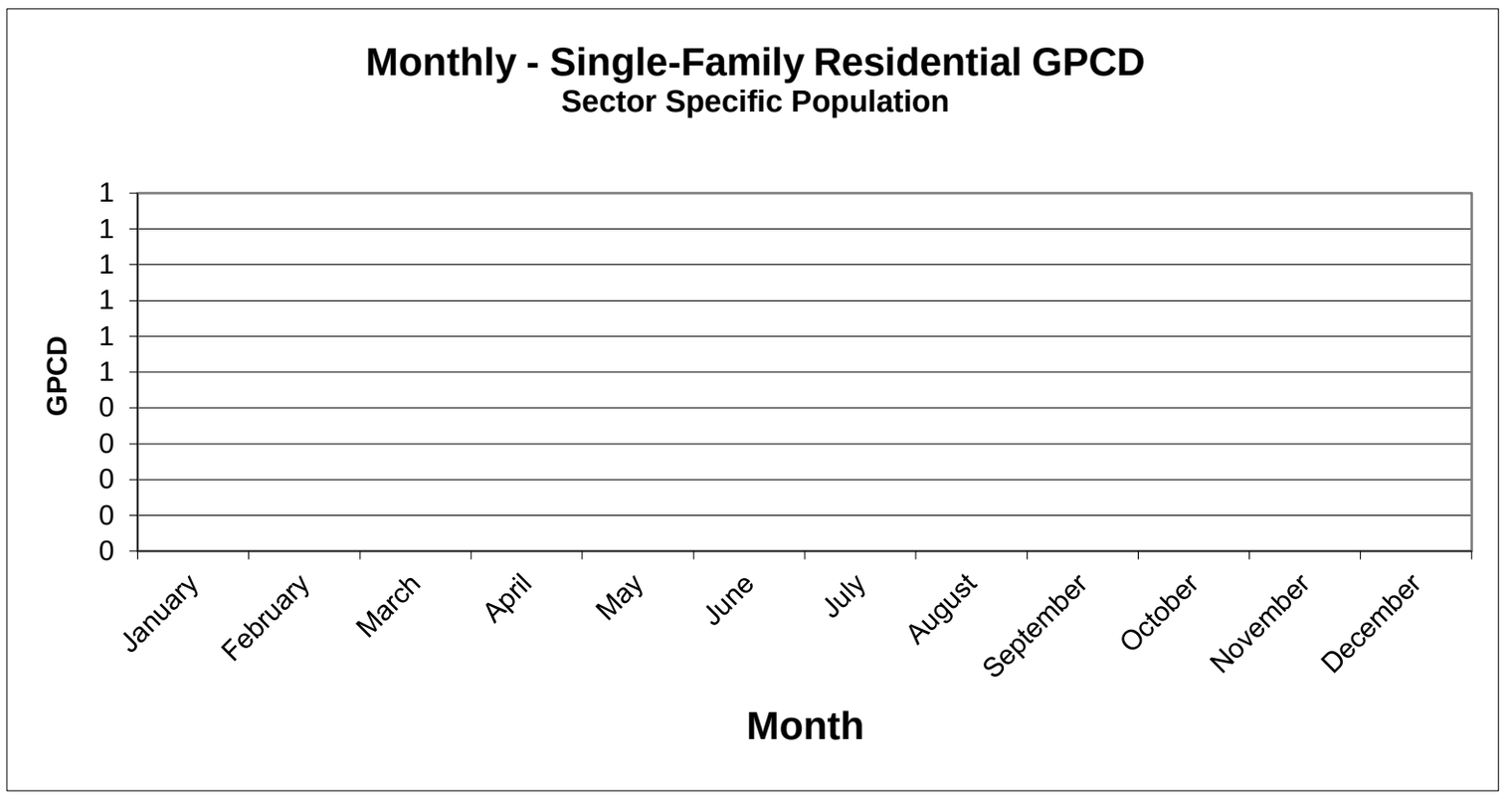


MONTHLY

Month	SFR GPCD
January	#N/A
February	#N/A
March	#N/A
April	#N/A
May	#N/A
June	#N/A
July	#N/A
August	#N/A
September	#N/A
October	#N/A
November	#N/A
December	#N/A

Year	0

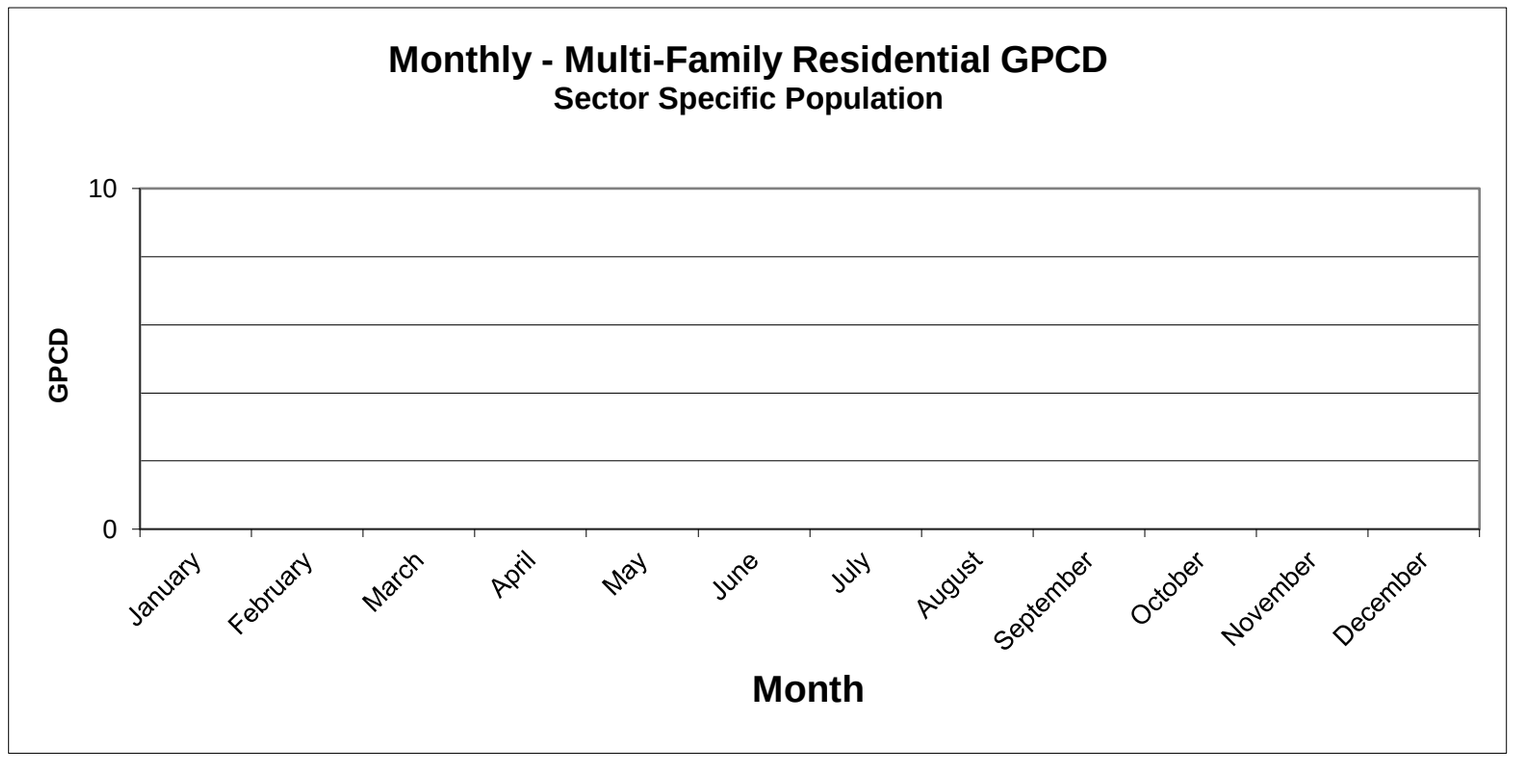
Peak/Ave	#N/A



YEAR **0**

Month	MFR GPCD
January	#N/A
February	#N/A
March	#N/A
April	#N/A
May	#N/A
June	#N/A
July	#N/A
August	#N/A
September	#N/A
October	#N/A
November	#N/A
December	#N/A

Peak/Ave	#N/A



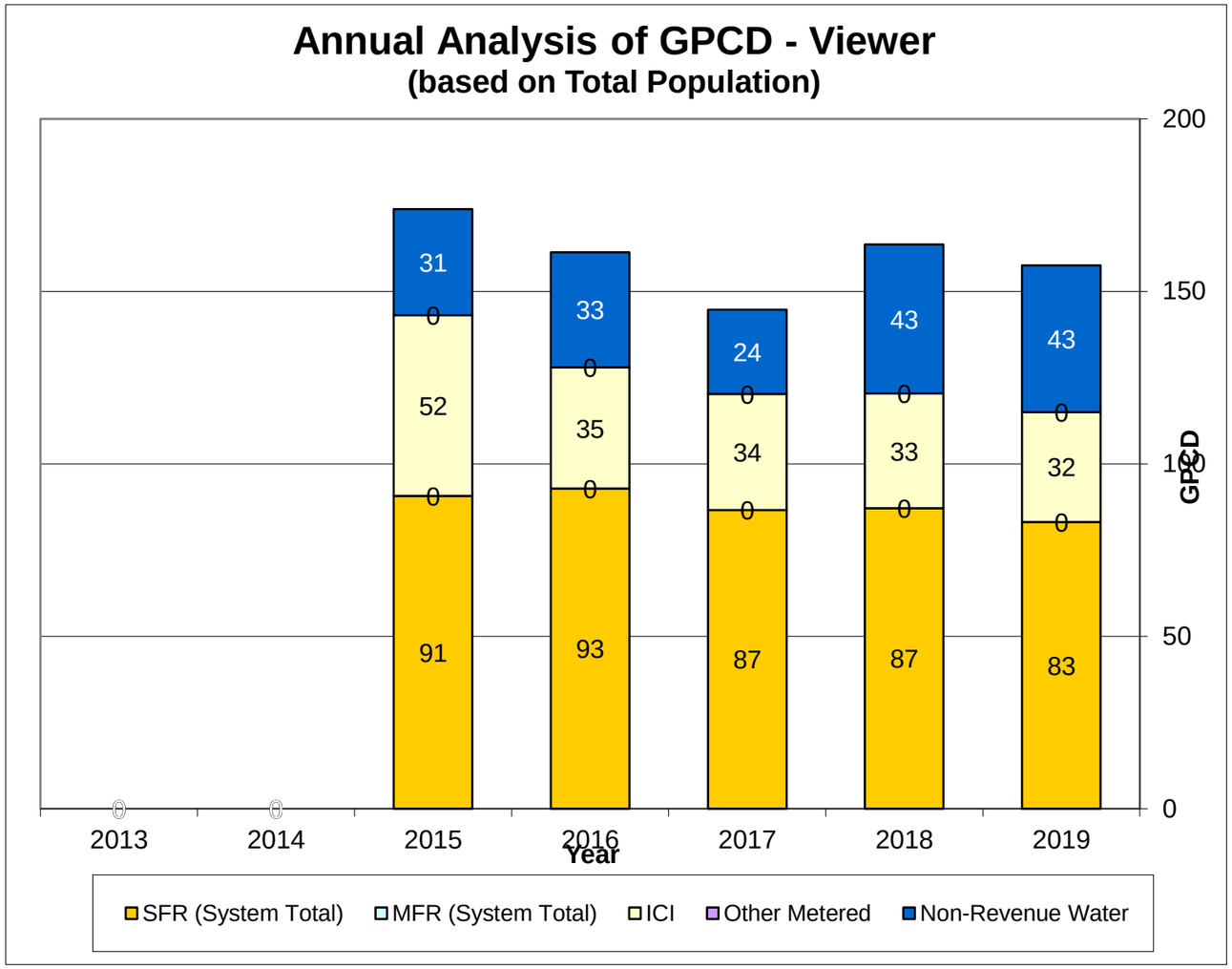
YEAR **0**

9. System Total Annual Reporting Performance

Overall Annual GPCD (based on Total Population)

Year	SFR (System Total)	MFR (System Total)	ICI	Other Metered	Non-Revenue Water (Info)	Total Supplied	Non-Revenue Volume Million Gallons (US)
On Graph?	Yes	Yes	Yes	Yes	Yes		
2019	83.11	N/A	31.84	N/A	42.54	220.05	426.71
2018	87.09	N/A	33.25	N/A	43.27	227.39	428.70
2017	86.58	N/A	33.64	N/A	24.43	204.99	240.06
2016	92.81	N/A	35.07	N/A	33.48	216.92	326.23
2015	90.71	N/A	52.36	N/A	30.76	233.66	292.49
2014	N/A	N/A	N/A	N/A	#######	#VALUE!	-
2013	N/A	N/A	N/A	N/A	#######	#VALUE!	-

Alamogordo		
2019	to	2013



10. Monthly Reporting Performance

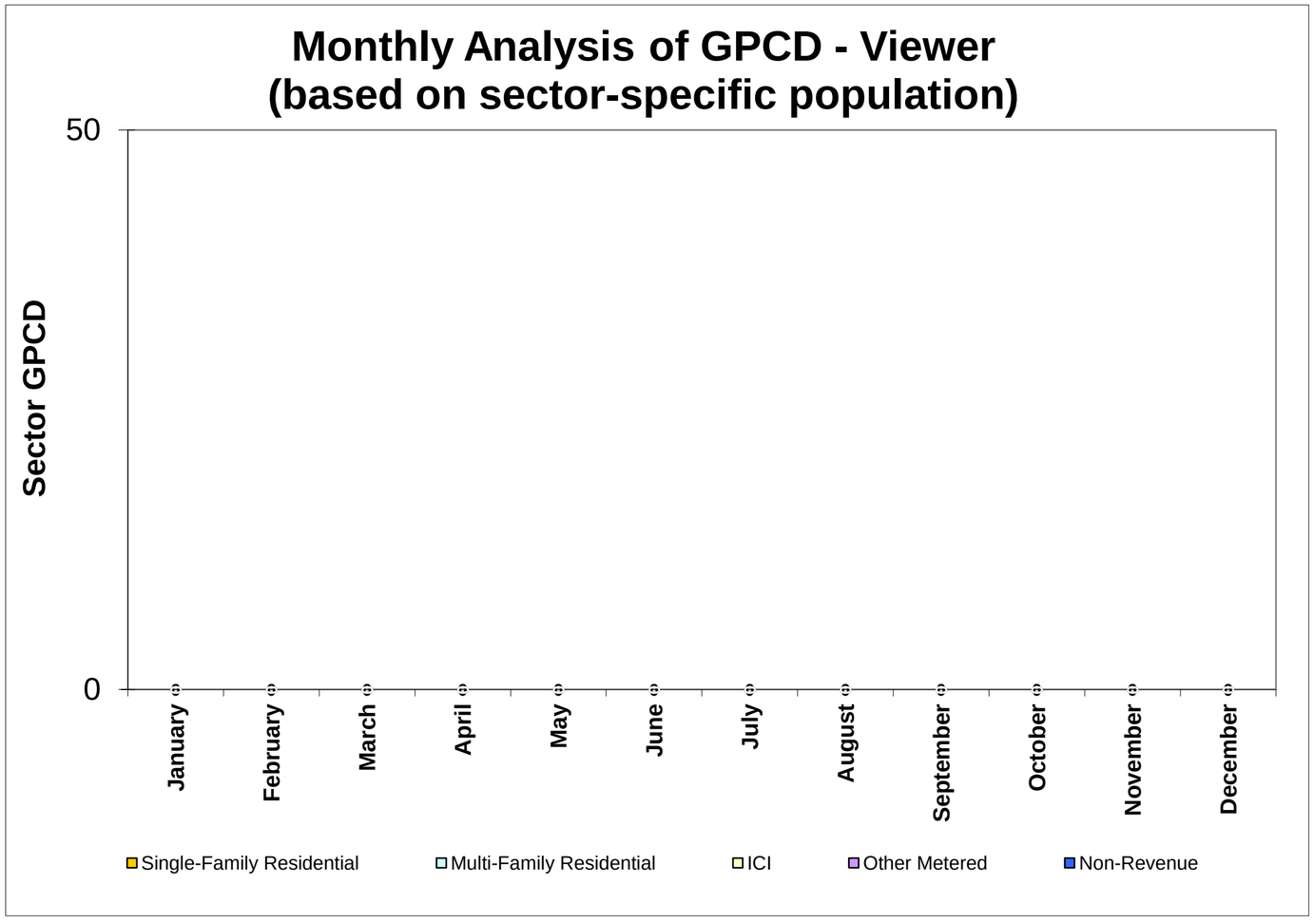
Choose Year for Monthly Analysis

Choose Sector **Single-Family Residential**

Monthly GPCD

Month	Single-Family Residential GPCD	Multi-Family Residential GPCD	ICI GPCD	Other Metered GPCD	Non-Revenue GPCD
JAN	#N/A	#N/A	#N/A	#N/A	#N/A
FEB	#N/A	#N/A	#N/A	#N/A	#N/A
MAR	#N/A	#N/A	#N/A	#N/A	#N/A
APR	#N/A	#N/A	#N/A	#N/A	#N/A
MAY	#N/A	#N/A	#N/A	#N/A	#N/A
JUN	#N/A	#N/A	#N/A	#N/A	#N/A
JUL	#N/A	#N/A	#N/A	#N/A	#N/A
AUG	#N/A	#N/A	#N/A	#N/A	#N/A
SEP	#N/A	#N/A	#N/A	#N/A	#N/A
OCT	#N/A	#N/A	#N/A	#N/A	#N/A
NOV	#N/A	#N/A	#N/A	#N/A	#N/A
DEC	#N/A	#N/A	#N/A	#N/A	#N/A

Alamogordo		
2019	to	2013



NMOSE GPCD Software: Definitions

GPCD v2.0 ©

Back to Instructions

Item Name		Description
Active Connections		All active **Single Family Residential** connections within the utility. Connections that are not occupied or show zero activity are not counted in this category.
Annual Multi-Family Residential GPCD Calculation	Find	The MFR GPCD is Annual MF Calculation (4.6) divided by the annual MFR Population (4.9).
Annual Single Family Residential GPCD Calculation	Find	The SFR GPCD is Annual SFR Calculation (3.7) divided by the annual SFR Population average (3.13).
Billed Water Consumption (Multi-Family Residential)	Find	This is the total billed consumption for **Multi-Family** Residential uses only. Provide the amount of water used (gallons) for multi-family residential connections by month in Table 4.1, or by year in Table 4.5. If multi-family residential is not available as a separate category, provide an explanation in the Comments Box and include usage in the Industrial, Commercial and Institutional Table 5.1 or Other Metered Table 5.2 on Sheet 5.
Billed Water Consumption (Single-Family Residential)	Find	This is the total billed consumption for **Single-Family** residential uses only.
Calculated Growth Rate	Find	The calculated growth rate is a calculation developed to normalize the data to the growth in the utility. The growth is determined by evaluating the percentage change in the number of connections within the utility on an annual basis, provided in Table 3.9 Average Connections Calculated. If there are no more than one years' data, then this will not be calculated. This Table is for the utilities use in checking the growth percentage calculated against their own estimates. It is also used in Table 4.8 Number of (Multi-Family) Units if only the current number of multi-family units can be provided.
Census Data	Find	The Census data is used to standardize the calculation of population by utilizing numbers of people per household. It also records information on the vacancy rate within each city which enables calculation of the number of households actually being used. There is a link to a pdf document in Definitions showing the user how to find and record the relevant data.
Converter	Find	The user may develop a GPCD Analysis based on one of two input unit selections: 1) Gallons (US) 2) Cubic feet Please select the units from the instructions worksheet. An interactive unit converter is also provided below. Input volume in first box below and select units to be converted. **1** | **Gallons (US)** = **0.134** | **Cubic Feet**
Exported Water	Find	Enter all water exported from the system. This will include any pass-through arrangements or wholesale contracts to other drinking water suppliers, where the reporting utility is the water rights permit holder.
GPCD		Gallons per capita per day (GPCD) is a method utilized internationally to measure water use by drinking water suppliers. It is most commonly used to describe historical and current water uses, providing a baseline of water use that is not as susceptible to changes in population. GPCD is also used for planning purposes, allowing estimates of future demand requirements based on localized population projections. More sophisticated planning efforts utilize GPCD to determine conservation potential, track the results of program implementation, and calculate projections based on conservation adjusted GPCD.
General Information		The white boxes are data entry cells and are used for inputting data. All other cells except dropdown menus (purple boxes) are protected for the user's benefit to stop any overwriting of formulas and calculated cells. The green boxes are values that have been calculated based on inputs.
Graphing Results	Find	Datasets will automatically be graphed when using the graphing data tools in both the Annual and Monthly Performance worksheets. For example, choosing the year and the use sector from the purple dropdown boxes will allow these variables to be graphed.
Imported Water	Find	Enter all water imported from other systems. This will include any retail contracts with other drinking water suppliers where this utility purchases water from another utility and is not the permit holder.
Inactive and Zero Connections	Find	The inactive and zero connections are recorded in Table 3.3 so that unused single family residential connections will be removed from the calculation of single family population when Total Units is chosen from the drop down list in Table 3.2.

Industrial, Commercial and Institutional (IC	Find	Includes industrial properties, such as manufacturing, commercial properties such as restaurants, shopping malls, and institutional customers such as schools, universities and prisons.
Multi-Family Residential Connections	Find	A multifamily unit is living units in an apartment complex, duplexes, triplexes, trailer parks, and condo or town houses that have multiple units serviced by a single connection. They are not counted in the single-family residential category.
Multi-Family Residential Population	Find	Multi-family population is calculated from number of MFR units in the Annual Unit Calculation (4.8) minus Vacant MFR Connections (4.10). That number is then multiplied by Average Size of Occupied Housing Units from the US Census (2.1).
Non-Revenue Water		Non-revenue water is all the water the utility diverts and/or produces, but does not get paid for. Non-revenue water includes apparent losses such as meter inaccuracies, theft, and database errors, real losses such as leaks. It also includes unbilled authorized uses such as fire-fighting, line flushing and disinfection. The Calculator does not provide data entry for unmetered billed water. This might include bulk sales or monthly fees not based on usage. The non-revenue water in the Calculator includes all water that is not metered.
Other Metered	Find	All categories of billed metered use that is not otherwise classified in SFR, MFR or ICI. This provides the user the opportunity to track alternative categories. Examples included irrigation only, stand pipes, and fire hydrant/construction meters. Everything not included in SFR, MFR, ICI or Other will end up in non-revenue water.
Reuse	Find	Reuse, or Recycled water is former wastewater (sewage) that has been treated to remove solids and certain impurities and reused by a water supplier. In most locations, it is only intended to be used for nonpotable uses, such as irrigation, and dust control. This data is not included in any other calculation. It is provided as a tracking tool for the user.
Single Family Residential Connections	Find	SFR Connection is a stand alone or independently metered housing unit. The number used in the Calculator can be Total Connections or Active Connections only.
Single Family Residential Population	Find	Single Family Population (3.13) is calculated from number of active connections times size of average household (3.12). It can be calculated monthly or annually depending on the data provided. If Total Connections is chosen (3.2), then inactive connections are subtracted prior to multiplying by size of average household (3.12). If Active Connections is chosen (3.2), then number of connections are multiplied by size of average household (3.12) without any subtractions.
Size of Average Household	Find	This Table is determined from the US Census data in Table 2.1, Sheet 2. This data is used to determine a total single-family population and total multi-family population for both the monthly and annual data (Tables 3.4 and 3.13, Tables 4.3 and 4.9 respectively).
Total Connections		All active and inactive **Single Family Residential** connections within the utility.
System Total GPCD	Find	The System Total GPCD is calculated by dividing the quantity of Total Water Diverted (plus imports minus exports) by the System Total Population
Total Population	Find	The Total Population estimate is the sum of the single-family population + multi-family population + group quarters population.
Vacant Single-Family Residential Connections	Find	This is a calculated field using either i) the average of the monthly vacant SFR connections, if monthly data are available or ii) an estimated value based on the Census data vacancy rate multiplied by the number of Total SFR connections. When Total Connections is chosen in Table 3.2, vacant single family residential connections are subtracted from Total Connections prior to calculating a population (based on household size) and a single family GPCD.

How to find the data required for Census section

Appendix E.

AWWA Water Audit

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

Water Audit Report for: Alamogordo Domestic Water System (NM3513319)
Reporting Year: 2019 1/2019 - 12/2019

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 88 out of 100 ***

System Attributes:

	Apparent Losses:	24.572	MG/Yr
+	Real Losses:	341.614	MG/Yr
=	Water Losses:	366.186	MG/Yr
?	Unavoidable Annual Real Losses (UARL):	101.51	MG/Yr
	Annual cost of Apparent Losses:	$74,699	
	Annual cost of Real Losses:	$207,701	Valued at Variable Production Cost

Return to Reporting Worksheet to change this assumpiton

Performance Indicators:

Financial:	Non-revenue water as percent by volume of Water Supplied:	24.5%	
	Non-revenue water as percent by cost of operating system:	7.4%	Real Losses valued at Variable Production Cost
Operational Efficiency:	Apparent Losses per service connection per day:	4.83	gallons/connection/day
	Real Losses per service connection per day:	67.09	gallons/connection/day
	Real Losses per length of main per day*:	N/A	
	Real Losses per service connection per day per psi pressure:	0.79	gallons/connection/day/psi
	From Above, Real Losses = Current Annual Real Losses (CARL):	341.61	million gallons/year
?	Infrastructure Leakage Index (ILI) [CARL/UARL]:	3.37	

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

AWWA Free Water Audit Software: Water Balance

WAS v5.0

Water Audit Report for:	**Alamogordo Domestic Water System (NM3513319)**
Reporting Year:	**2019** **1/2019 - 12/2019**
Data Validity Score:	**88**

Own Sources (Adjusted for known errors)
1,564.109

Water Imported
0.000

System Input
1,564.109

Water Exported
0.000

Water Supplied
1,564.109

Authorized Consumption
1,197.923

Billed Authorized Consumption
1,180.330

Billed Water Exported
1,180.330

Billed Metered Consumption (water exported is removed)
1,180.330

Billed Unmetered Consumption
0.000

Unbilled Authorized Consumption
17.593

Unbilled Metered Consumption
0.000

Unbilled Unmetered Consumption
17.593

Water Losses
366.186

Apparent Losses
24.572

Unauthorized Consumption
15.690

Customer Metering Inaccuracies
5.931

Systematic Data Handling Errors
2.951

Real Losses
341.614

Leakage on Transmission and/or Distribution Mains
Not broken down

Leakage and Overflows at Utility's Storage Tanks
Not broken down

Leakage on Service Connections
Not broken down

Revenue Water
0.000

Revenue Water
1,180.330

Non-Revenue Water (NRW)
383.779

AWWA Free Water Audit Software:
Dashboard

The graphic below is a visual representation of the Water Balance with bar heights propotional to the volume of the audit components

Water Audit Report for: **Alamogordo Domestic Water System (NM3513319)**
Reporting Year: **2019** **1/2019 - 12/2019**
Data Validity Score: **88**

○ Show me the VOLUME of Non-Revenue Water
◉ Show me the COST of Non-Revenue Water