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Attention: Ms. Nicole Dubois, Associate

Subject: Water Resources Evaluation, Proposed San Miguel Ranch Development, San Luis Obispo County, California

Dear Ms. Dubois:

This report provides an evaluation of the groundwater resources for the proposed San Miguel Ranch. The report describes the environmental setting relative to groundwater resources, the reliability of the supply, and identifies potential impacts associated with the planned use of groundwater for the proposed development.

We will remain available to respond to any questions you or the County of San Luis Obispo may have regarding water resource issues for the proposed San Miguel Ranch Development.

Sincerely,

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1.0 INTRODUCTION

The San Miguel Ranch (Ranch) is a 550-acre proposed residential development located in the County of San Luis Obispo (County). A map displaying the general location of the San Miguel Ranch is displayed on Plate 1 - Regional Geologic Map. The Ranch is located immediately northwest of the community of San Miguel and west of the Salinas River. The 550-acre development area is planned for subdivision into 361 parcels on which 389 residential units will be built. In addition, commercial properties, parks, and a fire station are planned for construction on the development.

The applicant and developer of the San Miguel Ranch (Applicant) is the San Miguel Ranch, LLC. The Applicant has applied to the County for approval of the proposed development. According to the San Miguel Ranch Project Description, the proposed development is anticipated to rely entirely on groundwater to meet the water demands of the residential units, commercial properties, parks, fire station, landscaping, and any small agricultural farms established on the largest parcels. The local area surrounding the Ranch consists of the community of San Miguel, rural residences, agricultural lands, the Salinas River, and undeveloped areas. The San Miguel Community Services District (CSD) presently serves potable water to about 1,600 residents in the community of San Miguel. Subject to meeting requirements for annexation, the Ranch is expected to become part of the CSD. In addition, 27 of the largest parcels in the Ranch would have the option to develop a portion of their areas into agricultural crops. The agricultural water demands of these crops could be satisfied by private wells installed on these parcels. Agricultural use on these residential parcels has been considered in this analysis for water demand calculations.

If the proposed Ranch is approved and constructed, the so-called “North Well” on the property will be used to supply the non-agricultural water demands of the development. As part of annexation, the North Well would be integrated into the existing CSD water supply system. In addition to the anticipated water demands of the development at its build-out, the existing CSD is also expected to experience continued growth and reach a build-out status around the year 2028. Questions have therefore arisen as to whether the CSD would utilize the North Well in the future to provide water supplies to CSD users outside of the Ranch. Therefore, at the request of the County of San Luis Obispo, we were also asked to evaluate the impacts on local groundwater levels and storage of the estimated pumping demands of the proposed development as well as the anticipated pumping demands due to growth and eventual build-out of the existing CSD.

In addition to the CSD, a number of private wells in the area surrounding the Ranch provide water for residential, landscaping, and agricultural purposes. Given the above considerations, the primary purposes of this report are:

1. Estimate the total water demands of the proposed Ranch;
2. Assess the ability of the groundwater reservoir to meet the water demands of the Ranch at build-out as well as the future water demands of the existing CSD at build-out;

3. Simulate the impacts of pumping the North Well on groundwater level drawdown in nearby surveyed public and private wells;
4. Evaluate the use of the North Well by the CSD to help meet its future water demands; and
5. Provide a list of suggested mitigation measures to reduce any identified adverse impacts due to the project pumping.
6. To meet the standards and objectives of SB 221 and SB 610 in terms of providing a Water Supply Assessment of the proposed San Miguel Ranch development.

A groundwater flow model for the Paso Robles Groundwater Basin (Basin) was developed by Fugro and ETIC for the County (Fugro, 2005) and was used in this report to perform the quantitative hydrogeologic assessment of potential impacts associated with the proposed Ranch and the future water demands of the CSD. The simulation period is from 2008 through 2034. The proposed development is planned to take 7 years to construct, and the modeling study assumes that construction begins in the year 2008 and achieves build-out by 2014. The study then evaluates the impacts of the development by simulating a 20-year post build-out period from 2015 to 2034. Build-out of the existing CSD is planned to take 20 years and the study assumes this will occur during the years of 2008 to 2028. Consequently, the 27-year simulation period for this study includes both the build-out of the proposed development and the build-out of the existing CSD.

Two different estimates of the water demands in the CSD at build-out have been reported. First, a build-out water demand of 677 acre-feet per year (afy) was estimated by Hand (2004) and evaluated by Fugro using the groundwater flow model for the Basin (Fugro, 2005). Second, a build-out water demand of 582 afy was presented in the San Miguel CSD Water Master Plan (Wallace Group, 2002). Using these two build-out demand estimates for the CSD, this hydrogeologic study will evaluate three different groundwater pumping scenarios:

Scenario A: Assumes a CSD build-out water demand (not including the Ranch) of 677 afy and a Ranch build-out water demand of 199 afy. The water demands of the Ranch are met by pumping the North Well and the current water demands of the CSD are met by pumping Well 3 (i.e., the current operating well in the CSD) (Plate 1). Increases in water demands due to growth in the CSD (not including the Ranch) are met by equal increases in pumping in the North Well and Well 3. Agricultural demands of the largest parcels in the development are met by pumping of on-site private wells. Simulates the impacts of the Ranch during its 7-year construction and also for 20 years beyond its build-out (i.e., from 2008 through 2034).

Scenario B: Assumes a CSD build-out water demand (not including the Ranch) of 582 afy and a Ranch build-out water demand of 199 afy. The water demands of the Ranch are met by pumping the North Well and the current water demands of the CSD are met by pumping Well 3. Increases in water demands due to growth in the CSD (not including the Ranch) are met by equal increases in pumping in the North Well and Well 3. Agricultural demands of the largest parcels in the development are met by pumping of on-site private wells. Simulates the impacts of the Ranch during its 7-year construction and also for 20 years beyond its build-out (i.e., from 2008 through 2034).

Scenario C: This scenario is identical to Scenario B (i.e., assumes a CSD build-out water demand (not including the Ranch) of 582 afy and a Ranch build-out water demand of 199 afy) except that during a 3-year period from 2030 to 2032, the combined water demands of the CSD and the Ranch are met by pumping only the North Well. Scenario C evaluates the impacts on groundwater levels and storage in the development area assuming that Well 3 is off-line for an extended period (e.g., due to failure or emergency maintenance) and the water demands of the CSD (including the Ranch) is met using the North Well.

In addition to the six primary purposes of the study, this water resources assessment includes: 1) a brief review of the local climate, hydrology, and hydrogeology; and 2) a description of existing local active water wells and water demands.

1.1 DATA COLLECTION AND PREVIOUS STUDIES

Data describing existing local water demands, land use, climate, hydrology, and hydrogeology were collected from various local, regional, state, and federal agencies. Well completion reports and land use maps were obtained from the California Department of Water Resources (DWR) for an area approximately 1 mile in radius from the proposed development. Stream flow data at gauges along the Salinas River were collected from the United States Geological Survey (USGS). Groundwater level measurements and precipitation data were collected from the County of San Luis Obispo Water Resources Unit.

Several reports describing hydrogeologic studies and other local planning documents were also collected and reviewed. Two documents in particular provided a significant amount of data and information for performing this study. The first document is the final report for the Paso Robles Groundwater Basin Study performed by Fugro and ETIC (Fugro, 2005). In that study, a numerical groundwater flow model was developed for the Paso Robles Groundwater Basin based on a detailed conceptualization and characterization of its hydrogeology and hydrology. The second document is an assessment of the local hydrogeologic conditions in the immediate San Miguel Ranch area performed by Cleath & Associates (2005, 2006). The Cleath reports include an evaluation of existing wells in and around the development site, a discussion of historical land use changes at the site, a review of historical groundwater level measurements in local wells, a geologic cross section of the site area, and the results of a pumping test conducted in one of the site wells. The Cleath reports also include a number of water quality analyses from local wells. We concur with the information, data, analysis, and conclusions contained in the Cleath reports.

In addition to the above sources, we also contacted and met with staff from the San Miguel CSD to better understand their use of groundwater to meet the historic water demands of their service area. The CSD also provided data describing existing CSD production wells, and data for current and historical water demands of the CSD. The meeting also included a discussion of any limitations the CSD may have experienced in providing a reliable source of water and their understanding of the water demands of the proposed development.

1.2 METHODOLOGY

Analysis of groundwater resources issues associated with the proposed San Miguel Ranch development was approached within the context of recently adopted guidelines contained in the "Draft Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" (California Department of Water Resources, 2003) to assist water suppliers, cities and counties in integrating water and land use planning. Relative to the proposed use of groundwater, that document commonly relies on information that may be contained in appropriate Urban Water Management Plan (UWMP) documents (if available and adopted) to provide information and a methodology for evaluation of the reliability and sustainability of groundwater resources over a reasonable planning horizon, typically 20 years.

Under **SB 610**, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to the California Environmental Quality Act. Under **SB 221**, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

Not every project that is subject to the requirements of **SB 610** would also require the mandatory water verification of **SB 221** (e.g., if there is no subdivision map approval). Conversely, not every project that is subject to the requirements of **SB 221** would also require the environmental document to contain an **SB 610** water supply assessment. Projects approved before January 1, 2002 were not subject to the requirements of **SB 610** or **SB 221**; however, some projects may have been subject to the requirement to prepare a water supply assessment as set forth in Senate Bill 901 of 1995 (Chapter 881, Statues of 1995).

The subject guidebook follows California Water Code section 10910, subdivision (f) by identifying issues that should be addressed in the water supply reliability assessment. These issues, all of which are discussed in this document specifically include:

1. A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project. For the San Miguel CSD, there is no adopted urban water management plan.
2. A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to

comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

3. A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
4. A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
5. An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

While Water Code § 10912(a) provides that a “project” may include a residential development of 500 or more dwelling units, Water Code § 10912(b) provides a “sliding scale” for determining the size of a project to which **SB 610** would apply, below 500 dwelling units. Since Section 10912(b) provides that a “project” is a proposed development that would increase the number of service connections for a public water system (which currently has fewer than 5,000 service connections) by 10 percent or more, a “project” could be as few as 300 dwelling units. For example, a water utility that has 3,000 service connections would experience an increase in the number of service connections by 10% if it were required to serve a proposed residential development of 300 units, thus making the 300-unit development a “project” under **SB 610**. Similarly, for water utilities that have more than 3,000 service connections, but fewer than 5,000 service connections, the “10 percent test” in Water Code § 10912(b) would apply in determining whether a proposed development is a “project” under **SB 610**. According to the approved San Miguel Ranch Project description, the "project" includes nine primary components: 1) a General Plan Amendment and Zone Change for a 550-acre site (Development project site); 2) a Tract Map that would result in the subdivision of the Development project site into 361 parcels; 3) a Conditional Use Permit to allow construction of 389 Residential units; 4) construction of a variety of residential, commercial, recreation, public facilities and open space uses on the Development project site; 5) improvements to the interchange at Mission Street and United States Route 101 (US 101) (known as the South Camp Roberts Over Head); 6) construction of a road connecting the residential subdivision to Tenth Street; 7) off-site infrastructure improvements, including extensions of water and wastewater service lines to connect to the Wastewater Treatment

Plant; 8) annexation of the San Miguel Ranch Development project site into the San Miguel Community Services District to allow expansion of the San Miguel Urban Reserve Line (URL) and the Urban Services Line (USL); and 9) the expansion of the San Miguel CSD Wastewater Treatment Plant by the San Miguel CSD. Relative to project size and application of SB610, the proposed 389 residential dwelling units and number of proposed new service connections associated with the existing San Miguel Ranch CSD indicates that an assessment of water supply is required per SB610 and SB221. Overall, this report has been prepared to meet the standards and objectives of SB 221 and SB 610 in terms of providing a Water Supply Assessment of the proposed San Miguel Ranch development.

2.0 LOCAL CLIMATE AND HYDROLOGY

The climate in the San Miguel area is characterized as semi-arid, with warm dry summers and cool wet winters. Rainfall occurs primarily from November through April, where the total annual precipitation varies from 12.7 to 15.9 inches in the area.

2.1 EVAPORATION AND EVAPOTRANSPIRATION

Monthly evaporation data were collected at the nearest California Irrigation Management Information System (CIMIS) weather station in Paso Robles. Average annual evaporation between 2000 and 2006 was 50 inches. Evaporation data are presented in Appendix A - Precipitation and Evaporation Data.

Average monthly reference evapotranspiration (ETo) data representative of the Salinas River corridor (CIMIS ETo Zone 16) was used to model the ETo demands of the San Miguel area (Table 1). The average annual ETo was 49.3 inches. Ninety-eight percent of the annual ETo demand occurs from April through September, the typical growing season for many crops (Table 1). Reference ETo data were used to estimate the applied water demands of vineyards that may potentially be planted in the largest parcels of the development and the applied water demands of existing vineyards in areas surrounding the development.

2.2 PRECIPITATION

Historical precipitation data at three gauge stations in the area were collected from the County. The three gauge stations were: 1) Paso Robles Station 10, located about 7 miles south of the development, 2) Sinclair Station 125, located in San Miguel, and 3) Camp Roberts Station 109, located about 5 miles north of the development. Average annual precipitation at Paso Robles Station 10, Sinclair Station 125, and Camp Roberts Station 109 were 15.3, 13.0, and 12.7 inches, respectively. Precipitation records at Sinclair Station 125 extend from 1963 through 2006. The annual precipitation at Sinclair Station 125 varied from a low of 4.0 inches in the 1976 water year to a high of 25.5 inches in the 1995 water year. Precipitation data are presented in Appendix A - Precipitation and Evaporation Data.

2.3 SALINAS RIVER STREAM FLOWS

The Salinas River is the most significant natural surface water channel in the Paso Robles Groundwater Basin and is the closest major stream to the Ranch. The Salinas River is located approximately 1,500 feet east of the Ranch and flows from the south to the northwest. The USGS maintains eight streamflow gauges along the Salinas River and its major tributaries. The closest gauge upstream of the Ranch is located 7 miles to the south in Paso Robles. The closest gauge downstream of the Ranch is located 14 miles to the north near Bradley. The gauge in Paso Robles has recorded average and peak daily flows for 48 years between 1958 and 2006. The gauge near Bradley has recorded average and peak daily flows for 46 years between 1959 and 2005. Stream flow in the Salinas River typically ceases during the summer and early fall months of all but the most wet water years. However, average daily flows during the winter and spring months are quite variable but have exceeded 2,000 cubic feet per second (cfs) during March of 1995 and January of 1998. The Salinas River is a significant source of recharge to the Paso Robles Formation beneath the Ranch property and to aquifers elsewhere in the Basin. The collected streamflow data are presented in Appendix B - Streamflow Data.

3.0 LOCAL HYDROGEOLOGY

San Miguel Ranch is located within the greater Paso Robles Groundwater Basin. Information describing the local hydrogeology was obtained from various reports of studies conducted in the Ranch area. In particular, a significant amount of information was obtained from Cleath (2005) and Fugro (2005). In this section, the local hydrogeology of the Ranch area is described, including descriptions of the general geology, characterization of the aquifer system beneath the site, review of historical groundwater levels, and a survey of existing well locations.

3.1 GEOLOGY

A map displaying the regional surficial geology of the Ranch property and surrounding area is presented on Plate 1 (Dibblee, 2004). The surficial geology in the northeastern area of the Ranch is associated with older alluvium (Qoa) whereas the remainder of the development is associated with outcroppings of the Paso Robles Formation (QTp). The older alluvium consists of terraces of dissected alluvial sand and gravel while the Paso Robles Formation consists of pebble, gravels, and sand and gravel (Dibblee, 2004). Valley alluvium (Qa) and channel alluvium (Qg) are located along the Salinas River corridor just east and north of the development. The valley alluvium consists of alluvial clay and sand while the channel alluvium consists of alluvial sand and gravel (Dibblee, 2004).

Geologic cross sections within the area encompassing the Ranch property were generated as part of the Paso Robles Groundwater Basin Study (Fugro, 2005) (Plate 2). Cross Section C-C' occurs in the east-west direction and is located just north of the Ranch area (Plate 3). Cross Section D-D' occurs in the north-south direction and is located east of the Salinas River (Plate 4). Although the deepest sediments of the Paso Robles Formation southeast of San Miguel attain saturated thicknesses of up to 3,000 feet, the thickness of the Paso Robles Formation in the vicinity of the development is thought to have a thickness on the order of 1,000

feet. Approximately 165 well completion reports were collected in the San Miguel area and reviewed. In addition, a local geologic cross section in the north-south direction was developed in the Ranch area by Cleath (2006) (Plate 5). A well log analyses by Fugro and Cleath (2005) indicated that wells in the Ranch area are generally less than 600 feet deep.

3.2 AQUIFER CHARACTERIZATION

Based on an analysis of collected well logs and production well data obtained from the CSD, the Paso Robles Formation constitutes the main source of groundwater in the area. Characterization of the aquifer properties of the Paso Robles Formation was performed by gathering specific capacity data from the collected well logs. The limited specific capacity data obtained from the well logs ranged from less than 2 gpm/ft to 8 gpm/ft. The lower specific capacity values were associated with wells mostly located west of Highway 101. The pumping yields of these wells in the San Miguel area ranged from less than 100 gallons per minute (gpm) to several hundred gpm.

Data from four previous pumping tests in the San Miguel area are presented in Table 2 (Fugro, 2005). Only one of the four tests contained sufficient information to estimate a transmissivity of the formation. The associated hydraulic conductivity from that transmissivity estimate is 1.2 feet/day (Table 2).

As part of their hydrogeologic investigation of the Ranch property, Cleath (2005) identified two existing wells on the site: one located in the northern part of the site (North Well) and another located in the southern part of the site (South Well). A pump test was performed by Aqua Engineering on the North Well for Cleath & Associates in September 2005. The North Well was pumped for 83 hours at a rate of 1,000 gpm. Prior to starting the test, the static water level was 170 feet below ground surface (bgs). After 615 minutes of pumping, the pumping water level had declined to 242 feet bgs and did not change for the remainder of the test.

Cleath performed a follow-up pump test in April 2006 on the North Well. For this, the North Well was pumped for 24 hours at 1,000 gpm. Prior to testing, the static water level in the North Well was 112.7 feet bgs. After 24 hours of pumping, the water level had dropped to 235.4 feet bgs, the equivalent of 122.7 feet of drawdown and 8.1 gpm/ft of specific capacity. Following the pump test, recovery readings of groundwater levels were recorded until the pumping well water level recovered. An estimated transmissivity was calculated as 15,000 gpd/ft for both the pump test and recovery test data. The pump test data and hydrographs are presented in Appendix C - North Well Pump Testing Data.

3.3 GROUNDWATER LEVELS

A map displaying hydrographs of measured groundwater levels in 19 wells throughout the San Miguel area is presented on Plate 6. The two closest wells to the Ranch are 25S/12E-8G1 and 25S/12E-16D1. These two wells are located between the development and the Salinas River. Groundwater levels in 25S/12E-8G1 between 1965 and 1990 fluctuated between 530 to 565 feet mean sea level (MSL), with an average value of about 550 feet (MSL). The groundwater levels in 25S/12E-16D1 between 1965 and 2000 fluctuated between 520 to 580

feet (MSL), with an average value of about 560 feet (MSL). The groundwater levels reflect seasonal fluctuations within most years. The greatest decreases in both wells occurred during the drought period from 1976 through 1977. Groundwater levels in many of the wells on Plate 6 rebound to a long-term average value despite the occurrence of intermittent droughts and wet periods. The seasonal fluctuation and tendency of most groundwater levels to rebound to an average value is indicative of wells perforating the confined Paso Robles Formation. In general, groundwater recharge in the Paso Robles Formation comes primarily from subsurface flows through the Salinas River alluvium. The Salinas River alluvium provides a near constant source of recharge to the slightly inclined permeable beds of the Paso Robles Formation that are in contact with the alluvium, especially during the winter and spring months when surface water flows can be significant.

4.0 HISTORICAL LOCAL WATER DEMANDS

Historical water demands include those that occurred on the San Miguel Ranch property, residential areas serviced by the San Miguel CSD, and rural residences and agricultural farms served by private wells.

4.1 SAN MIGUEL RANCH PROPERTY

The magnitude and occurrence of historical water use on the Ranch property is not known with certainty. A 1959 land use map obtained from DWR shows that the land associated with the Ranch was undeveloped at that time (Cleath, 2005). Land use maps for 1977 and 1985 indicate that about 60 acres of the property was irrigated as pasture during those years. Conversely, a 1995 land use map indicated that the property was not being irrigated during that year. These land use maps suggest that the property has been used as irrigated pasture intermittently over the period from 1970 through 1990. The estimated water demand for a 60-acre field of pasture grass is about 200 acre-feet per year (afy).

As mentioned previously, Cleath (2006) identified two existing wells that were located on the Ranch property. No historical groundwater level measurements, pumping records, or well performance data were available for either well. The North Well was furnished with a 75 horsepower pump set to at least 240 feet bgs that was capable of yielding at least 1,000 gpm (Cleath, 2005). The North Well was also pumped for 83 hours at a rate of 1,000 gpm. Recently, the North Well has supplied an unknown amount of water for irrigation of highway landscaping along the eastern edge of the property (Cleath, 2005). The pumping capacity of the North Well as well as historical land use data suggest that the property has been used at different times for pasture and the North Well likely supplied the groundwater for its irrigation.

4.2 SAN MIGUEL COMMUNITY SERVICES DISTRICT

Data collected from the San Miguel CSD indicate that the water demand of its service area has increased from about 250 afy in 1996 to 342 afy in 2006. During the year of 2002, the average daily water use was 226,000 gpd and the peak daily water use was 348,000 gpd. As of 2004, the CSD provided water service to about 1,600 residents (i.e., a rate of 0.17 afy per resident). The CSD produced this water from two local wells: Well 3 and Well 4. Well 3 was

constructed in 1952 to a depth of 300 feet and has a production rate of 350 gpm while Well 4 was constructed in 1990 to a depth of 360 feet and has a production rate of 630 gpm. The CSD also owns a currently inactive well (San Lawrence Terrace Well) located on the east side of the Salinas River. The San Lawrence Terrace Well is a deep well that is screened in the Paso Robles Formation. It is currently inactive due to high nitrate concentrations in the groundwater pumped from it. However, the source of the nitrates is not definitively known. Historical groundwater production data from Well 3 and Well 4 are summarized in Appendix D - San Miguel CSD Production Data.

As noted in Section 1.0 ("Introduction"), two different estimates of the water demands in the CSD at build-out have been reported. First, a build-out water demand of 677 acre-feet per year (afy) was estimated by Hand (2004) and evaluated by Fugro using the groundwater flow model for the Basin (Fugro, 2005). Second, a build-out water demand of 582 afy was presented in the San Miguel CSD Water Master Plan (Wallace Group, 2002). These two build-out estimates are evaluated in Scenarios A, B, and C as described later in Section 6.0 ("Hydrogeologic Evaluation of San Miguel Ranch Water Demands").

4.3 ADJACENT RURAL RESIDENCES AND SMALL AGRICULTURAL FARMS

As many as 50 parcels ranging in size from 10 to 20 acres are located just south of the Ranch. These parcels consist of residences, small farms, grazing land, or undeveloped areas. The source of water for these parcels is likely groundwater through the use of private wells. In February 2007, Fugro performed a survey of the existing private wells surrounding the Ranch (within about a mile radius). From this survey, 19 wells were identified just south of the property and north of 10th street (refer to Plate 7 - Active Well Location Map). Another two wells were identified in the area just northwest of the property. The land use associated with each well was also mapped as part of the survey. Approximately half of the properties south of the development contained vineyards. The total area of these vineyards was about 80 acres. Using crop coefficients for vineyards and reference ETo data for the San Miguel area, the estimated applied water demand for the 80 acres of vineyards in the parcels south of the site was 162 afy. The survey did not indicate the presence of any agricultural lands on the western side of the property.

5.0 ESTIMATED SAN MIGUEL RANCH WATER DEMANDS

The 550-acre San Miguel Ranch is planned for subdivision into 361 parcels. The Conditional Use Permit for the development will allow for the construction of 389 residential units on these parcels. It is anticipated that as many as 27 of the 361 parcels may each develop some portion of their non-hardscaped area into agricultural land uses. These 27 parcels range in size from approximately 2 to 22 acres, with a total area of about 142 acres. Based on recent trends of agricultural land use in the San Miguel area, vineyards are the most likely crop to be developed on these parcels. Consequently, it was assumed in the estimation of water demands for the Ranch that vineyards would be planted in the non-hardscaped areas of the 27 identified parcels.

As mentioned previously, the Ranch development is expected to rely entirely on groundwater to meet its residential and small agricultural farm water demands. As a requirement for annexation of the Ranch into the CSD, at least one water well capable of yielding 750 gpm is needed on the project site to provide water for both the development and to also augment the capacity of the CSD (LAFCO, 2006). The current plan is to use the existing North Well for that purpose. The estimated water demands for residential units, commercial properties, parks, a fire station, and small agricultural farms in the Ranch are presented in this section.

5.1 RESIDENTIAL, COMMERCIAL, PARKS, AND FIRE STATION WATER DEMANDS

According to estimates generated by the Wallace Group, the total water demand of the San Miguel Ranch at build-out is anticipated to be 199 afy (Wallace Group, 2008) (Table 3). With a projected population of 1,179 residents in the Ranch at build-out, the 199 ayr water demand results in a per capita water demand of 0.17 afy per resident. The water demand of 199 afy includes those of the planned residential units, commercial properties, parks, and fire station on the property. Build-out of the development is planned to take 7 years. At build-out, the average daily water demand is projected to be 177,362 gallons per day (gpd) with a projected peak daily water demand of 424,898 gpd (Wallace Group, 2008). The estimated water demand information provided by Wallace Group is considered reasonable.

The 199 afy water demand is expected to be satisfied with water provided by the CSD via the North Well. In addition to the North Well, other water system improvements for the Ranch will include a water storage tank, a booster station, transmission lines, and a physical connection to the CSD distribution system.

The San Miguel Ranch project will be developed in four phases according to a construction schedule, where the total build-out is expected to take 7 years (Table 4). As discussed in the Section 6 "Hydrogeologic Evaluation of the San Miguel Ranch Water Demands," pumping in the North Well is incrementally increased in the groundwater model during the 7-year construction period as each phase of the development is completed and assumed to be populated by residents. In Scenarios A, B, and C, pumping in the North Well is also increased during the development of the Ranch and after its build-out to help meet increased water demands occurring elsewhere in the CSD. The estimated annual water demands of the Ranch (not including supplemental pumping for CSD areas outside the Ranch) for the simulation period of 2008 through 2034 are presented in Table 5.

5.2 SMALL AGRICULTURAL FARM WATER DEMANDS

As mentioned previously, 27 of the 361 parcels may each develop some portion of their non-hardscaped area into agricultural land use. The water demands of the small farms are expected to be satisfied with groundwater pumped from private wells located on these parcels. It is unknown at this time whether small shared water systems or mutual water companies will be developed to provide supplemental water for the small agricultural farms.

The estimated annual total pumping demand from all of the potential on-site private wells on the Ranch property is 209 af. This pumping demand was estimated by assuming that vineyards were to be planted and irrigated on 27 of the 361 parcels. For each of the 27 parcels it was assumed that 0.5 acre of the parcel would be developed as impervious hardscape (e.g., dwellings, pavement, garages, etc.) and 80 percent of the remaining area would be planted in vineyards. The annual ETo demands for vineyards in the San Miguel area were computed using CIMIS average monthly ETo data and monthly crop coefficients for vineyards (Table 1). Assuming an irrigation efficiency of 75 percent, the estimated annual applied water demand for vineyards was calculated to be 2.03 acre-feet/acre. The total acreage of the 27 parcels was 141.9 acres, whereas the estimated total area of the 27 parcels assumed to be developed in vineyards was 102.7 acres. Consequently, the estimated annual groundwater pumping demand required to meet the applied water demands of the vineyards for all 27 parcels was 209 afy. In most years, 98 percent of the applied water demand occurs during the spring-summer stress period. The remaining 2 percent of the applied water demand is assumed to be easily satisfied by effective precipitation during the fall-winter stress period. Consequently, on-site private wells are only used to extract the 205 af applied water demand during the spring-summer stress period. The estimated annual water demands of these small agricultural farms on the Ranch for the simulation period of 2008 through 2034 are presented in Table 5.

6.0 HYDROGEOLOGIC EVALUATION OF THE SAN MIGUEL RANCH WATER DEMANDS

In Section 1.0 (“Introduction”), it was noted that two different build-out water demands for the San Miguel CSD (not including the proposed development) have been estimated: 582 afy (San Miguel CSD Water Master Plan, 2008) and 677 afy (Hand, 2004). If the Ranch is constructed, then the North Well will be integrated into the existing CSD water supply system. In addition to supplying the anticipated build-out demand of 199 afy for the proposed development, it is possible that the CSD may elect to use the North Well to supply water to other areas of the CSD outside of the development. Presently, the CSD pumps about 250 afy from Well 3. In this study, a groundwater model is used to evaluate the hydrogeologic impacts of pumping the North Well to meet the demands of the proposed development. In addition, it is assumed that the increased water demands due to future growth in the CSD (not including the development) beyond the 2008 simulation year will be met by increasing the pumping in equal amounts from Well 3 and the North Well.

The simulation period for the hydrogeologic evaluation of the development is from 2008 to 2034. As of 2008, it is assumed that Well 3 extracts 250 afy for the CSD. In the model, construction of the development occurs in phases beginning in 2008 and achieving build-out after 7 years in 2014. Build-out of the CSD according to its master plan is expected to take 20 years and will therefore achieve this status by 2028 in the model. The hydrogeologic impacts of the proposed development are evaluated through the simulation of three future scenarios of pumping in the North Well and Well 3.

Scenario A: Assumes a CSD build-out water demand (not including the Ranch) of 677 afy and a Ranch build-out water demand of 199 afy. The water demands of the Ranch are met by pumping the North Well and the current water demands of the CSD are met by pumping Well

3. Increases in water demands due to growth in the CSD (not including the Ranch) are met by equal increases in pumping in the North Well and Well 3. Agricultural demands of the largest parcels in the development are met by pumping of on-site private wells. Simulates the impacts of the Ranch during its 7-year construction and also for 20 years beyond its build-out (i.e., from 2008 through 2034).

Scenario B: Assumes a CSD build-out water demand (not including the Ranch) of 582 afy and a Ranch build-out water demand of 199 afy. The water demands of the Ranch are met by pumping the North Well and the current water demands of the CSD are met by pumping Well 3. Increases in water demands due to growth in the CSD (not including the Ranch) are met by equal increases in pumping in the North Well and Well 3. Agricultural demands of the largest parcels in the development are met by pumping of on-site private wells. Simulates the impacts of the Ranch during its 7-year construction and also for 20 years beyond its build-out (i.e., from 2008 through 2034).

Scenario C: This scenario is identical to Scenario B except that during a 3-year period from 2030 through 2032, the combined water demands of the CSD and the Ranch are met by pumping only the North Well. Scenario C evaluates the impacts on groundwater levels and storage in the development area assuming that Well 3 is off-line for an extended period (e.g., due to failure or emergency maintenance) and the water demands of the CSD (including the Ranch) are met using the North Well.

The hydrogeologic impacts under the three scenarios are evaluated by comparing their results against a future scenario (i.e., baseline conditions) that assumes that the development is not constructed and therefore future anticipated increases in CSD water demands are met by pumping Well 3 only. In this section, we briefly describe the following: 1) the groundwater model used to evaluate the proposed development; 2) the baseline conditions of each scenario; 3) the estimated groundwater pumping demands in the North Well and Well 3 from 2008 to 2034; and 4) the hydrogeologic impacts on local groundwater levels and storage under each scenario.

6.1 GROUNDWATER FLOW MODEL DESCRIPTION

Potential pumping impacts of the Ranch on local groundwater levels and storage were simulated in this study using a numerical groundwater flow model of the Paso Robles Groundwater Basin developed by Fugro and ETIC for the County (Fugro, 2005). The groundwater model was developed in MODFLOW (Harbaugh et al., 2000) for a 17-year base period of 1981 to 1997. Once successfully calibrated, the model was adapted in that study to evaluate a future scenario of urban build-out and maximum reasonable agricultural demand in the Basin for a 34-year simulation period beyond the base period. Maximum reasonable agricultural water demands were estimated by the San Luis Obispo County Agricultural Commissioners office (SLO ACO, 2004a, 2004b) assuming a mix of future crop types and irrigation practices. Urban build-out water demands in the communities of Atascadero, Templeton, Paso Robles, and San Miguel were obtained from long-term planning documents. Given the successful implementation of the urban build-out and maximum agricultural pumping

demands in that study, the groundwater model was deemed reliable for simulating the long-term hydrogeologic impacts of the Ranch and the anticipated build-out of the CSD in this report.

The aquifer system in the groundwater model was represented by four MODFLOW model layers. In the vicinity of the Ranch, model layer 1 represents the near-surface sediments of the older alluvium in the northeast corner of the development and represents the outcropping Paso Robles Formation elsewhere in the Ranch (Plate 1). Model layer 2 represents the fine-grained unit that underlies the modeled extent of the Estrella River and extends to the north and south of the Estrella River by approximately 3 to 4 miles in each direction. Model layers 3 and 4 represent the upper and lower portions of the confined to semi-confined Paso Robles Formation.

The calibrated groundwater model calculated changes in groundwater levels and storage in each layer from 1981 to 1997. The 17-year base period was developed through an analysis of long-term average conditions of water supply (Fugro, 2002). Each year in the base period was divided into two 6-month stress periods, resulting in a total of 34 stress periods over the 17 years. The stress period concept implies that the modeled groundwater recharge and discharge stresses have constant rates of application during each 6-month stress period. Although the rates are constant in time during a given stress period, the stresses may and often do vary spatially during the same stress period. In the model, the recharge stresses included: 1) subsurface inflows, 2) percolation of precipitation, 3) streambed percolation, 4) percolation of irrigation water, and 5) percolation of wastewater discharge. Conversely, the discharge stresses included: 1) subsurface outflows, 2) urban, agricultural, and domestic groundwater pumping, 3) discharges to streams, and 4) extraction by phreatophytes. For the future scenario of urban build-out and maximum reasonable agricultural demand in the Basin for a 34-year simulation period beyond the base period, the natural hydrology from 1981 to 1997 was repeated twice to provide a reasonable representation of future fluctuations in climate. As such, the model used in this hydrogeologic assessment includes the drought period from 1987 through 1991 as well as wetter water years during the middle of the 1990 decade.

6.2 BASELINE CONDITIONS

The baseline conditions in this study assume that the proposed development is not constructed and that increases in CSD pumping demands due to future growth are met by increased pumping in Well 3 only. Since two different estimates of build-out water demand in the San Miguel CSD are being evaluated in the three scenarios, two different baseline conditions will need to be defined.

6.2.1 Baseline Conditions for Scenario A

Scenario A assumes a build-out water demand by the year 2028 in the CSD (not including the Ranch) of 677 afy and a Ranch build-out water demand of 199 afy. Baseline conditions for Scenario A assume that the Ranch is not constructed and therefore the entire future water demand of the CSD is met by pumping Well 3. Estimated pumping demands in Well 3 from 2008 to 2034 for the baseline conditions of Scenario A are presented in Table 6.

6.2.2 Baseline Conditions for Scenarios B and C

Scenarios B and C each assume a build-out water demand by the year 2028 in the CSD (not including the Ranch) of 582 afy and a Ranch build-out water demand of 199 afy. Baseline conditions for Scenarios B and C assume that the Ranch is not constructed and therefore the entire future water demand of the CSD is met by pumping Well 3. Estimated pumping demands in Well 3 from 2008 to 2034 for the baseline conditions of Scenarios B and C are presented in Table 7.

6.3 ESTIMATED GROUNDWATER PUMPING DEMANDS

The estimated annual water demand for the proposed San Miguel Ranch at build-out is 199 acre-feet. This demand is expected to be met using groundwater pumped from the North Well. The 7-year development of the San Miguel Ranch is planned to occur in four phases, where each phase corresponds to a sub-area of the San Miguel Ranch (Plate 9). The total build-out groundwater pumping demand of 199 afy was distributed to each phase area in proportion to the number of parcels within the phase area relative to the total number of parcels in the entire San Miguel Ranch. The construction schedule for the four phases is reproduced in Table 4. In the model, Phases I, III, and IV are each planned to require 24 months to construct whereas Phase II will require 18 months. The construction of each phase is assumed to occur uniformly over its planned development period (e.g., Phase III will be constructed uniformly over the 4 six-month stress periods that represent the 24-month construction period). Pumping in the North Well is increased over the 7-year development period to reflect population of the parcels as they are developed according to the phasing schedule. The estimated pumping demands in the North Well during each stress period of the 7-year development and of the following 20 years after build-out to meet the water demands of the Ranch only are presented in Table 5. For each year during the 27-year simulation period, 70 percent of the annual water demand is assumed to occur during the spring-summer stress period while the remaining 30 percent of the water demand occurs during the fall-winter stress period. The estimated pumping demands in the North Well during each stress period of the 7-year development and of the following 20 years after build-out to meet the water demands of the Ranch in addition to increases in water demands in the San Miguel CSD under Scenarios A , B, and C are presented in Tables 6, 7, and 8, respectively.

The total annual applied water demand for the 27 largest parcels with small agricultural farms in the San Miguel Ranch was estimated earlier to be 209 af. In most years, 98 percent of the applied water demand occurs during the spring-summer stress period. The remaining 2 percent of the applied water demand is assumed to be easily satisfied by effective precipitation during the fall-winter stress period. Consequently, on-site private wells are only used to extract the 205 af applied water demand during the spring-summer stress period (Table 5).

As shown in Table 5, the total projected amount of project pumping is derived using the phased construction schedule proposed by the project applicant. The projected amount of pumping is increased incrementally during the first 7 years of the project until build-out is achieved. The increased pumping reflects the assumption that after each phase of the development is built, it is then populated and groundwater pumping occurs to meet these

demands. It also makes the assumption that on-site private wells are installed after certain phases of the development for the larger parcels that may have agricultural uses. In the groundwater flow model, the cells in the model grid are 10-acres each in size. Since many of the 27 parcels with vineyards are less than 10 acres in size, 9 composite wells were implemented in the model to represent the pumping from the 27 on-site private wells. These 9 composite wells were distributed over the sub-areas of Phases III and IV to approximate the pumping pattern that would occur in the 27 on-site private wells.

The estimated pumping demands in Well 3 during each stress period from 2008 through 2034 under Scenarios A, B, and C are presented in Tables 6, 7, and 8, respectively. Pumping in Well 3 is assumed to increase annually from 2008 to the build-out year of the San Miguel CSD in 2028. Pumping remains constant from 2029 to 2034 under Scenarios A and B. Under Scenario C, no pumping occurs in Well 3 from 2030 to 2032 but resumes at its build-out rate from 2033 to 2034.

6.4 SIMULATED LOCAL IMPACTS OF PROJECT GROUNDWATER PUMPING DEMANDS

Groundwater levels in and around the San Miguel Ranch development were simulated for Scenarios A, B, and C over the 27-year period from 2008 to 2034 using the groundwater flow model for the Basin. Groundwater levels were also simulated from 2008 to 2034 for baseline conditions of Scenario A and for baseline conditions of Scenarios B and C. In general, the difference in simulated groundwater levels at any particular location between the baseline condition and each scenario is referred to as "drawdown." In the model, if a pumping well (e.g., Well 3) is located in a particular grid cell, the simulated drawdown in that cell is not equivalent to the drawdown that would be occurring inside the well itself but is more representative of the drawdown in the aquifer surrounding the pumping well at some distance. Drawdown inside a pumping well would be expected to be much greater (i.e., due to pumping inefficiencies in the well and hydraulic head losses) than the drawdown simulated in the grid cell in which the pumping well were located in the model. Consequently, simulated drawdown for each pumping well reported in the model results in this section refers to the drawdown in the vicinity of the pumping well or monitoring well rather than inside the well casing itself. The simulation results for Scenarios A, B, and C are presented below.

6.4.1 Hydrogeologic Impacts under Scenario A

The spatial distributions of simulated drawdown in the San Miguel Ranch area under Scenario A after 7, 20, and 27 years are presented on Plates 9 through 11, respectively. Simulated drawdown near wells in and around the San Miguel Ranch for each stress period from 2008 through 2034 are presented in Table 9. Also, the simulated drawdown in the North Well, well number 25S/12E-8K1, and Well 3 from 2008 to 2034 under Scenario A are presented in Figures 1, 2, and 3, respectively. Overall, model-predicted drawdown near wells surrounding the development are within the observed historic seasonal water level variations in the area as indicated on Plate 6. Drawdown is generally greatest in the model grid cells where the North Well and the nine composite on-site private wells are defined and decreases radially away from the San Miguel Ranch.

Build-out of the San Miguel Ranch occurs in the model by 2014 and build-out of the San Miguel CSD occurs by 2028. State well number 25S/12E-8K1 is the closest well in the surrounding area to the San Miguel Ranch (Plate 7). By build-out of the San Miguel Ranch in 2014, drawdown in the North Well and in well number 25S/12E-8K1 were 23.9 and 7.8 feet, respectively (Plate 9, Figures 1 and 2). By build-out of the San Miguel CSD in 2028, drawdown in the North Well and in well number 25S/12E-8K1 were 36.8 and 14.1 feet, respectively (Plate 10). Finally, 20 years after build-out of the San Miguel Ranch in 2034, drawdown in the North Well and in well number 25S/12E-8K1 were 37.2 and 14.5 feet, respectively (Plate 11). The results indicate that under Scenario A drawdown increased less than 1 foot in the North Well and in well number 25S/12E-8K1 after build-out was achieved in the San Miguel CSD. Relatively constant drawdown in most wells by the end of the 27-year simulation period indicates that groundwater levels have stabilized after build-out of the San Miguel CSD.

Simulated drawdown near Well 3 from 2008 to 2034 under Scenario A is presented on Figure 3 and listed for each stress period in Table 9. The spatial distributions of drawdown near Well 3 during 2014, 2028, and 2034 can also be seen on Plates 9, 10, and 11, respectively. Under Scenario A, by the end of the 27-year simulation period in 2034 groundwater levels had increased by about 3.4 feet above their baseline condition levels due to the shift in future pumping from Well 3 to the North Well.

Seasonal variations in groundwater levels, due to seasonal variations in water demands and climate conditions, between the fall-winter and spring-summer stress periods are also seen in the simulated drawdowns in Table 9. Seasonal groundwater level fluctuations are greatest in and around the grid cell corresponding to the North Well and decrease with distance away from the proposed development. As discussed earlier, hydrographs of historical groundwater levels in local wells suggest that groundwater levels in the Paso Robles Formation have been relatively stable during alternating cycles of wet periods and drought conditions (Plate 6). The highest simulated drawdown outside of the San Miguel Ranch property was 14.5 feet and occurred at well number 25S/12E-8K1, the closest well in the surrounding area to the San Miguel Ranch. There are no federal, State, or local thresholds that allow a quantitative evaluation of the project's potential drawdown impacts. In our professional opinion, the 14.5 foot drawdown is not significant because a) projected drawdown is not more than historic groundwater fluctuations that have occurred as a result of drought conditions, and b) the decrease in groundwater storage is partially offset by naturally induced recharge from the Salinas River.

Over the 27-year simulation period, the combined total pumping from the North Well and the on-site private wells in the development to meet San Miguel Ranch water demands were 9,433 af above the baseline condition. In terms of changes to the simulated groundwater balance, the development water demands resulted in a decrease in aquifer storage of 5,393 af. The most significant source of recharge in the Paso Robles Formation is leakage from the Salinas River alluvium. This leakage occurs as a natural process and is also induced by pumping in the Paso Robles Formation throughout the Basin. For Scenario A, the decrease in storage was partially mitigated against the project pumping amounts by an increase of induced recharge from the Salinas River alluvium into the Paso Robles Formation that accounted for about 39 percent of the project pumping. The average annual amount of induced recharged

after build-out was less than 120 afy. This induced recharge rate, however, is small in comparison to the average annual flow in the Salinas River of approximately 90,000 afy. It should also be noted that the rights to surface water flows in the Salinas River and associated pumping from the Salinas River alluvium are fully appropriated at present and no future plans exist to these increase demands beyond these current allocations. Full appropriation implies that no additional rights to the Salinas River flows are being issued at this time nor is any additional pumping for existing rights being granted. Consequently, the pumping demands of the San Miguel Ranch in addition to the San Miguel CSD build-out demand of 677 afy are not expected to significantly impact flows in the nearby Salinas River. Overall, the model simulations suggest that pumping in the San Miguel Ranch before and after build-out will not significantly decrease Paso Robles Formation groundwater levels in existing wells surrounding the development.

6.4.2 Hydrogeologic Impacts under Scenario B

The spatial distributions of simulated drawdown in the San Miguel Ranch area under Scenario B after 7, 20, and 27 years are presented on Plates 12 through 14, respectively. Simulated drawdown in wells in and around the San Miguel Ranch for each stress period from 2008 through 2034 are also listed in Table 10. Also, the simulated drawdown in the North Well, well number 25S/12E-8K1, and Well 3 from 2008 to 2034 under Scenario B are presented in Figures 1, 2, and 3, respectively. As with Scenario A, model-predicted drawdown in wells surrounding the development are within the observed historic seasonal water level variations in the area as indicated on Plate 6. Drawdown is again generally greatest in the model grid cells where the North Well and the nine composite on-site private wells are defined and decreases radially away from the San Miguel Ranch.

By build-out of the San Miguel Ranch in 2014, drawdown in the North Well and in well number 25S/12E-8K1 were 22.9 and 7.5 feet, respectively (Plate 12, Figures 1 and 2). By build-out of the San Miguel CSD in 2028, drawdown in the North Well and in well number 25S/12E-8K1 were 33.7 and 13.1 feet, respectively (Plate 13). Finally, 20 years after build-out of the San Miguel Ranch in 2034, drawdown in the North Well and in well number 25S/12E-8K1 were 34.1 and 13.5 feet, respectively (Plate 14). As with Scenario A, the results indicate that under Scenario B drawdown increased less than 1 foot in the North Well and in well number 25S/12E-8K1 after build-out was achieved in the San Miguel CSD. Relatively constant drawdown in most wells by the end of the 27-year simulation period again indicates that groundwater levels have stabilized after build-out of the San Miguel CSD.

Simulated drawdown near Well 3 from 2008 to 2034 under Scenario B is presented on Figure 3 and listed in Table 10. The spatial distributions of drawdown near Well 3 during 2014, 2028, and 2034 can also be seen in Plates 12, 13, and 14, respectively. Under Scenario B, by the end of the 27-year simulation period in 2034 groundwater levels had increased by about 1.7 feet above their baseline condition levels due to the shift in future pumping from Well 3 to the North Well.

Over the 27-year simulation period, the combined total pumping from the North Well and the on-site private wells in the development to meet San Miguel Ranch water demands were

9,433 af above the baseline condition. In terms of changes to the simulated groundwater balance, the development water demands resulted in a decrease in aquifer storage of 5,554 af. For Scenario B, the decrease in storage was partially mitigated against the project pumping amounts by an increase of induced recharge from the Salinas River alluvium into the Paso Robles Formation that accounted for about 37 percent of the project pumping. The average annual amount of induced recharged after build-out was also less than 120 afy and is small in comparison to the average annual flow in the Salinas River of approximately 90,000 afy. Consequently, the pumping demands of the San Miguel Ranch in addition to the San Miguel CSD build-out demand of 582 afy are not expected to significantly impact flows in the nearby Salinas River. Overall, the model simulations suggest that pumping in the San Miguel Ranch before and after build-out will not significantly decrease Paso Robles Formation groundwater levels in existing wells surrounding the development.

Scenario B implements a smaller San Miguel CSD build-out water demand of 582 afy, in comparison to 677 afy under Scenario A. Consequently, the hydrogeologic impacts under Scenario B are slightly less than those of Scenario A.

6.4.3 Hydrogeologic Impacts under Scenario C

Scenario C evaluated the impacts on drawdown around the North Well assuming that Well 3 goes off-line for a 3-year period (e.g., for emergency maintenance purposes) and the entire service demand of the San Miguel CSD as well as the San Miguel Ranch development (excluding private residential wells) is met by pumping the North Well. For Scenario C, it was assumed that this shift in pumping to the North Well would occur from 2030 to 2032. Except for this 3-year shift in pumping to the North Well from 2030 to 2032, all other recharge and discharge stresses for Scenario C are identical to those of Scenario B.

Simulated drawdown in wells in and around the San Miguel Ranch for each stress period from 2008 through 2034 under Scenario C are listed in Table 11. The spatial distribution of simulated drawdown in the San Miguel Ranch area under Scenario C at the end of year 2032 is presented on Plate 15. Also, the simulated drawdown in the North Well, well number 25S/12E-8K1, and Well 3 from 2008 to 2034 under Scenario C are presented in Figures 1, 2, and 3, respectively. At the end of year 2032 (i.e., stress period number 50), the highest simulated drawdown in the North Well and in well number 25S/12E-8K1 were 65.7 and 22.6 feet, respectively. Under Scenario B, the simulated drawdown in the North Well and in well number 25S/12E-8K1 at the end of stress period 50 were 34.0 and 13.4 feet, respectively. Therefore, shifting the entire pumping demand to the North Well resulted in an additional 31.7 feet of drawdown in comparison to the distribution of pumping between the North Well and Well 3 under Scenario B. Groundwater levels in Well 3, conversely, rose 17.1 feet above the baseline condition by the end of the simulation year 2032. At the end of the simulation period in the year 2034, drawdown in the North Well and in well number 25S/12E-8K1 were similar once again to those under Scenario B and were 34.8 and 14.7 feet, respectively. Scenario C suggests that the short-term impact of shifting the entire CSD pumping demand to the North Well results in an acceptable level of additional drawdown in the areas of wells located just outside of the project boundaries. The results of Scenario C also suggest that the groundwater levels in the vicinity of

the North Well recover to prior pumping levels (i.e., as simulated under Scenario B) after the entire CSD pumping demand has been redistributed between the North Well and Well 3.

7.0 EVALUATION OF WATER QUALITY IN THE NORTH WELL

Analyses of water quality constituents in groundwater samples extracted from the North Well were conducted subject to Title 22 water testing methods and were presented in the report by Cleath (2005). Water quality sampling was conducted on three different dates during the fall of 2004: September 24, October 12, and October 13. The groundwater samples were sent to as many as six different analytical laboratories for testing.

According to the standards of the County of San Luis Obispo Public Health Department Environmental Health Services, the results of the water quality testing indicate that the North Well does not require treatment methods to meet domestic drinking water standards. Most chemicals tested were found to be non-detectable, including the non-detection of organic chemicals in the samples. Cleath (2005) notes that the water quality of the North Well was consistent with other wells operated by the San Miguel CSD. In fact, the measured radioactivity in the North Well (5.16 pico-Curies per liter) was less than the State of California standard of 15 pico-Curies per liter and also contained less gross alpha activity than other San Miguel CSD wells (Cleath, 2005). A summary of the detectable water quality constituents and their measured concentrations is presented in Table 12.

8.0 SUGGESTED RECOMMENDATIONS

The simulated results of the groundwater impacts analysis suggest that groundwater levels and storage in the Paso Robles Formation beneath the San Miguel Ranch and in the surrounding area will not be adversely impacted by the pumping rates required to meet the water demands of the proposed project. Nevertheless, a number of hydrogeologic measures could be implemented as standard precautionary steps. Suggested measures suggested for implementation include:

1. Establishment of a comprehensive groundwater monitoring program in and around San Miguel Ranch. The monitoring program would include both groundwater level and groundwater quality sampling in the Paso Robles Formation and in shallow near-surface wells.
2. Implementation of water conservation and water use efficiency methods to residential, landscape, and crop water uses.
3. Importation of surface water supplies.

8.1 GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program to collect periodic water levels measurements and groundwater quality samples from public and private wells in the San Miguel Ranch should be implemented. The monitoring program should include the metering of pumped groundwater from all public (i.e. San Miguel CSD) and private wells in the development. The monitoring

program should be implemented during the phased development of the project and continued after build-out. Monitoring during the construction of each project phase would evaluate the impacts of the phased development on local groundwater levels and groundwater quality. Monitoring should continue at least 10 years after build-out to evaluate the project impacts over a hydrologic period that will likely include wet, average, and dry water years.

Depending on the location and number of public and private wells used in the monitoring program, additional monitoring wells may need to be constructed at strategic locations in the development to provide an adequate spatial distribution of water level and water quality samples for assessment of pumping impacts of the project. Monitoring program should provide sampling on a bi-annual (spring and fall months) basis. The monitoring program should be conducted by the San Miguel CSD in accordance with an approved plan. The monitoring data should be submitted to the County Planning and County Public Works Department, Hydrology Section.

Groundwater levels in wells screened both above and within the Paso Robles Formation should be periodically measured to evaluate the impacts of project pumping on confined and unconfined groundwater levels. Groundwater levels in the monitoring wells should be collected before the start of the project construction, during construction as different project phases become populated, and after build-out. Groundwater quality samples should also be periodically collected and tested to quantify the impacts of the project on the water quality in both the unconfined and confined aquifers.

8.2 WATER CONSERVATION MEASURES

Water conservation measures should be implemented when applicable to the various land uses in the San Miguel Ranch that have associated water demands. These land uses would include residences, residential landscaping, public landscaping, and small farm agricultural crops.

Residences should implement water conserving appliances when possible such as low-flow toilets, high water efficiency washing machines and dishwashers, and low-flow shower nozzles. Water use efficiency in the irrigation of agricultural crops could be achieved by encouraging the use of irrigation methods with high application efficiencies (i.e., low deep percolation of irrigation water). Efficient irrigation methods might include sprinklers, micro-irrigation, and drip-irrigation. The choice of irrigation method is dependent on the type of crop grown; however, it is anticipated that most agricultural crops developed on the larger parcels in the San Miguel Ranch will likely be vineyards. Many of the same efficient irrigation methods could also be used for the irrigation of public and residential landscaping.

In addition, metering should be conducted for in-home water use, irrigation of public and residential landscaping, and pumping from on-site private wells. Metering provides an accurate quantification of water use and is useful for evaluating the efficacy of various water conservation and water use efficiency methods and making improvements to these methods. Measured water use information is also useful for planning purposes.

8.3 IMPORTED SURFACE WATER SUPPLIES

Although the San Miguel CSD does not have any immediate plans to acquire a source of imported surface water to augment its water supply, consideration should be given to the possibility that a future source of surface water could be made available and acquired by the CSD if an appropriate opportunity were presented.

9.0 SUMMARY AND CONCLUSIONS

In this report, the impacts of anticipated pumping demands from the proposed San Miguel Ranch development at build-out and from the San Miguel CSD at build-out on local groundwater levels and storage were evaluated using a numerical groundwater flow model for the Paso Robles Groundwater Basin (Fugro, 2005). Groundwater use for the proposed development is expected to occur in the North Well at a build-out rate of 199 afy. Water quality testing of groundwater samples from the North Well indicate that this well does not require treatment methods to meet domestic drinking water standards (Cleath, 2005). Additional private pumping on the largest parcels in the development is estimated to be about 205 afy.

Given a San Miguel CSD build-out demand of 677 afy, the results of Scenario A indicate that the pumping demands of the North Well (i.e., Ranch build-out demand plus San Miguel CSD growth demand) result in groundwater level drawdown within the development of less than 40 feet and just outside the development of less than 15 feet by the simulation year of 2034. Given a San Miguel CSD build-out demand of 582 afy, the results of Scenario B indicate that the pumping demands of the North Well (i.e., Ranch build-out demand plus San Miguel CSD growth demand) result in groundwater level drawdown within the development of less than 35 feet and just outside the development of less than 15 feet by the simulation year of 2034. Shifting the entire pumping demand of the San Miguel CSD at build-out to the North Well for a 3-year period in Scenario C (i.e., from 2030 to 2032) resulted in groundwater level drawdown of 65.7 feet near the North Well and of 22.6 feet at well number 25S/12E-8K1 just outside and east of the Ranch.

The results of the simulated total pumping demands under Scenarios A and B over the 27-year period (i.e., 7 years during development and 20 years after build-out) indicate that the impacts of the project will not adversely impact local groundwater levels or cause unreasonable interference to nearby wells. Groundwater levels in and around the project site largely stabilized to a constant value by the end of the 27-year simulation period. Estimated long-term drawdown due to project pumping is expected to be less than 15 feet in areas surrounding the project. The estimated drawdown outside the project site is generally less than or equal to the seasonal and year-to-year fluctuations observed in historical groundwater level hydrographs associated with other nearby wells.

At the end of the 14-year simulation period, a total of 4,701 af of groundwater was extracted to meet project demands and resulted in a decrease in storage over the baseline conditions of 3,711 af. Overall, the results of the modeling study indicate that the groundwater reservoir in the San Miguel area is capable of providing a long-term sustainable supply of

groundwater to meet the water demands of the existing San Miguel CSD, the surrounding rural residences and small farms, and the proposed San Miguel Ranch development.

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TABLES

Table 1. Average Monthly Reference Evapotranspiration Data for the San Miguel Area and Monthly Crop Coefficients for Vineyards

Month	San Miguel CIMIS Station # Reference ET (inches)	San Miguel CIMIS Station # Reference ET (feet)	Vineyard Crop Coefficients	Estimated Vineyard ET (feet)	Estimated Vineyard Applied Water Demand (acre-feet/acre)
October	3.7	0.31	0.1	0.03	0.04
November	2.1	0.18	0	0.00	0.00
December	1.4	0.12	0	0.00	0.00
January	1.6	0.13	0	0.00	0.00
February	2	0.17	0	0.00	0.00
March	3.2	0.27	0	0.00	0.00
April	4.3	0.36	0.2	0.07	0.10
May	5.3	0.44	0.6	0.27	0.35
June	6.4	0.53	0.7	0.37	0.50
July	7.4	0.62	0.6	0.37	0.49
August	6.8	0.57	0.5	0.28	0.38
September	5.1	0.43	0.3	0.13	0.17
Total	49.3	4.11		1.52	2.03

Table 2. Estimated Aquifer Parameters in the San Miguel Area

Well Location	Test (hours)	Flow (gpm)	Well Depth (ft)	Perf. Int. (ft)	Trans. (gpd/ft)	Q/s (gpm/ft)	Hyd. Cond. (ft/day)	Type
25S/11E-24	12	150	350	90	800	0.62	1.2	QTp
25S/12E-1	72	225	420	--	--	1.9	--	QTp
25S/12E-16	--	760	300	--	--	6	--	QTp
25S/12E-8	24	1,000	691	406	--	8.1	--	QTp
Summary:								
QTp (average)		535	440	248	800	4.2	1.2	

Notes: Source: Paso Robles Groundwater Basin Study, Fugro, 2002

QTp - Paso Robles Formation
gpm - Gallons per minute
Hyd. Cond. - Hydraulic conductivity
Trans. - Transmissivity
gpd/ft - Gallons per day per foot
Perf. Int. - Perforated interval
Q/s - Specific capacity
obs - Observation well data
na - Not applicable

Table 3. Water Service Demand Estimates, San Miguel Ranch

Land Use	No. Units	Lot Size/Units	Demand (gallons per unit)	Total Demand			
				GPD, Average	GPD, Maximum Day	Peak Hour, gpm	AFY
RESIDENTIAL							
RR	4		450	1,800	3,600	3	2.0
RS	23		450	10,350	20,700	20	11.6
RSF	318		350	111,300	222,600	213	124.7
RMF	44		300	13,200	26,400	25	14.8
Subtotal:	**389**			**136,650**	**273,300**	**261**	**153.1**
COMMERCIAL							
Highway Retail	5,000	SF	0.25	1,250	2,500	2	1.4
Fire Station	5	Staff	75.00	375	750	1	0.4
Neighborhood Retail	16,000	SF	0.25	4,000	8,000	8	4.5
Subtotal:				**5,625**	**11,250**	**11**	**6**
Recreation[a]	13.1	AC		35,087	140,348	268	39.3
Open Space	162	AC					
Subtotal:				35,087	140,348	268	39
GRAND TOTAL				**177,362**	**424,898**	**540**	**199**

Note: [a]Based on 3.0 AF/Acre/Year for Turf Irrigation. Max. Day for irrigation based on 4.0 PF

Table 4. Proposed Phasing of the San Miguel Ranch Development

Phase I: This phase includes the lots along US 101 (RSF, RMF, CR, and REC); the lots along the connection to Tenth Street; the community park; and the necessary road, water, and sewer infrastructure (including the expanded Wastewater Treatment Plant) to support this phase. This phase includes 163 lots and is estimated to be built over 18 to 24 months. This phase is likely to be broken down into several subphases to address market conditions.
Phase II: This phase includes 40 RSF lots. This phase is estimated to be constructed over 12 to 18 months approximately 1 to 2 years after Phase I starts.
Phase III: This phase includes 96 lots (RSF and RS) and their associated infrastructure. Most of these are custom or semi-custom lots and would develop during the life of the project. This phase is anticipated to start within 2 years after Phase II starts. Total build out of this phase is estimated at approximately 5 years after the start of Phase I. This phase is likely to be broken down into several sub-phases to respond to market conditions.
Phase IV: This includes the remaining 46 lots (RSF, RS, and RR) at the western portion of the Development project site. These lots are all likely to be custom or semi-custom homes. The development of these lots would likely begin as Phase III is nearing completion and would be finished approximately 7 years after the start of Phase I.

Data Source: Section 3.6 of San Miguel Ranch Project Description (LSA, 2007)

Table 5. Private Wells in the San Miguel Ranch and the San Miguel CSD from 2008 to 2034

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel Ranch Development Water Demand (acre-feet)	Small Farm Private Well Water Demand (acre-feet)	San Miguel CSD Water Demand 677 afy Build-out (acre-feet)	San Miguel CSD Water Demand 582 afy Build-out (acre-feet)
2008	1	I	7.1	0.0	80.3	79.2
2008	2	I & II	33.0	0.0	185.7	183.3
2009	3	I & II	23.5	0.0	91.0	87.5
2009	4	II	76.6	0.0	196.4	191.6
2010	5	none	35.1	0.0	101.7	95.8
2010	6	III	82.0	0.0	207.0	199.9
2011	7	III	39.3	0.0	112.4	104.1
2011	8	III	101.5	25.5	217.7	208.2
2012	9	III	47.7	0.0	123.0	112.4
2012	10	IV	121.0	51.0	228.4	216.5
2013	11	IV	53.8	0.0	133.7	120.7
2013	12	IV	130.1	127.9	239.1	224.8
2014	13	IV	57.7	0.0	144.4	129.0
2014	14	build-out	139.3	204.8	249.7	233.1
2015	15	build-out	59.7	0.0	155.1	137.3
2015	16	build-out	139.3	204.8	260.4	241.4
2016	17	build-out	59.7	0.0	165.7	145.6
2016	18	build-out	139.3	204.8	271.1	249.7
2017	19	build-out	59.7	0.0	176.4	153.9
2017	20	build-out	139.3	204.8	281.8	258.0
2018	21	build-out	59.7	0.0	187.1	162.2
2018	22	build-out	139.3	204.8	292.4	266.3
2019	23	build-out	59.7	0.0	197.8	170.5
2019	24	build-out	139.3	204.8	303.1	274.6
2020	25	build-out	59.7	0.0	208.4	178.8
2020	26	build-out	139.3	204.8	313.8	282.9
2021	27	build-out	59.7	0.0	219.1	187.1
2021	28	build-out	139.3	204.8	324.5	291.2
2022	29	build-out	59.7	0.0	229.8	195.4
2022	30	build-out	139.3	204.8	335.1	299.5
2023	31	build-out	59.7	0.0	240.5	203.7
2023	32	build-out	139.3	204.8	345.8	307.8
2024	33	build-out	59.7	0.0	251.1	212.0
2024	34	build-out	139.3	204.8	356.5	316.1
2025	35	build-out	59.7	0.0	261.8	220.3

Table 5. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel Ranch Development Water Demand (acre-feet)	Small Farm Private Well Water Demand (acre-feet)	San Miguel CSD Water Demand 677 afy Build-out (acre-feet)	San Miguel CSD Water Demand 582 afy Build-out (acre-feet)
2025	36	build-out	139.3	204.8	367.2	324.4
2026	37	build-out	59.7	0.0	272.5	228.6
2026	38	build-out	139.3	204.8	377.8	332.7
2027	39	build-out	59.7	0.0	283.2	236.9
2027	40	build-out	139.3	204.8	388.5	341.0
2028	41	build-out	59.7	0.0	288.5	241.0
2028	42	build-out	139.3	204.8	388.5	341.0
2029	43	build-out	59.7	0.0	288.5	241.0
2029	44	build-out	139.3	204.8	388.5	341.0
2030	45	build-out	59.7	0.0	288.5	241.0
2030	46	build-out	139.3	204.8	388.5	341.0
2031	47	build-out	59.7	0.0	288.5	241.0
2031	48	build-out	139.3	204.8	388.5	341.0
2032	49	build-out	59.7	0.0	288.5	241.0
2032	50	build-out	139.3	204.8	388.5	341.0
2033	51	build-out	59.7	0.0	288.5	241.0
2033	52	build-out	139.3	204.8	388.5	341.0
2034	53	build-out	59.7	0.0	288.5	241.0
2034	54	build-out	139.3	204.8	388.5	341.0

Table 6. Estimated Groundwater Pumping Demands in the North Well, Small Farm Private Wells in the San Miguel Ranch and Well 3 from 2008 to 2034 under Scenario A

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 677 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 677 afy SMCSD Build-out (acre-feet)
2008	1	I	growth	9.7	0.0	77.7
2008	2	I & II	growth	38.3	0.0	180.3
2009	3	I & II	growth	31.5	0.0	83.0
2009	4	II	growth	87.3	0.0	185.7
2010	5	none	growth	48.5	0.0	88.3
2010	6	III	growth	98.0	0.0	191.0
2011	7	III	growth	58.0	0.0	93.7
2011	8	III	growth	122.8	25.5	196.4
2012	9	III	growth	71.7	0.0	99.0
2012	10	IV	growth	147.6	51.0	201.7
2013	11	IV	growth	83.2	0.0	104.4
2013	12	IV	growth	162.2	127.9	207.0
2014	13	IV	growth	92.4	0.0	109.7
2014	14	build-out	growth	176.7	204.8	212.4
2015	15	build-out	growth	99.7	0.0	115.0
2015	16	build-out	growth	182.0	204.8	217.7
2016	17	build-out	growth	105.1	0.0	120.4
2016	18	build-out	growth	187.3	204.8	223.0
2017	19	build-out	growth	110.4	0.0	125.7
2017	20	build-out	growth	192.7	204.8	228.4
2018	21	build-out	growth	115.7	0.0	131.0
2018	22	build-out	growth	198.0	204.8	233.7
2019	23	build-out	growth	121.1	0.0	136.4
2019	24	build-out	growth	203.4	204.8	239.1
2020	25	build-out	growth	126.4	0.0	141.7
2020	26	build-out	growth	208.7	204.8	244.4
2021	27	build-out	growth	131.8	0.0	147.1
2021	28	build-out	growth	214.0	204.8	249.7
2022	29	build-out	growth	137.1	0.0	152.4
2022	30	build-out	growth	219.4	204.8	255.1
2023	31	build-out	growth	142.4	0.0	157.7
2023	32	build-out	growth	224.7	204.8	260.4
2024	33	build-out	growth	147.8	0.0	163.1
2024	34	build-out	growth	230.0	204.8	265.7
2025	35	build-out	growth	153.1	0.0	168.4
2025	36	build-out	growth	235.4	204.8	271.1
2026	37	build-out	growth	158.4	0.0	173.7
2026	38	build-out	growth	240.7	204.8	276.4
2027	39	build-out	growth	163.8	0.0	179.1
2027	40	build-out	build-out	246.1	204.8	281.8
2028	41	build-out	build-out	166.5	0.0	181.8

Table 6. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 677 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 677 afy SMCSD Build-out (acre-feet)
2028	42	build-out	build-out	246.1	204.8	281.8
2029	43	build-out	build-out	166.5	0.0	181.8
2029	44	build-out	build-out	246.1	204.8	281.8
2030	45	build-out	build-out	166.5	0.0	181.8
2030	46	build-out	build-out	246.1	204.8	281.8
2031	47	build-out	build-out	166.5	0.0	181.8
2031	48	build-out	build-out	246.1	204.8	281.8
2032	49	build-out	build-out	166.5	0.0	181.8
2032	50	build-out	build-out	246.1	204.8	281.8
2033	51	build-out	build-out	166.5	0.0	181.8
2033	52	build-out	build-out	246.1	204.8	281.8
2034	53	build-out	build-out	166.5	0.0	181.8
2034	54	build-out	build-out	246.1	204.8	281.8

Table 7. Estimated Groundwater Pumping Demands in the North Well, Small Farm Private Wells in the San Miguel Ranch and Well 3 from 2008 to 2034 under Scenario B

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)
2008	1	I	growth	9.1	0.0	77.1
2008	2	I & II	growth	37.1	0.0	179.2
2009	3	I & II	growth	29.7	0.0	81.2
2009	4	II	growth	84.9	0.0	183.3
2010	5	none	growth	45.5	0.0	85.4
2010	6	III	growth	94.4	0.0	187.5
2011	7	III	growth	53.8	0.0	89.5
2011	8	III	growth	118.1	25.5	191.6
2012	9	III	growth	66.3	0.0	93.7
2012	10	IV	growth	141.7	51.0	195.8
2013	11	IV	growth	76.6	0.0	97.8
2013	12	IV	growth	155.0	127.9	199.9
2014	13	IV	growth	84.7	0.0	102.0
2014	14	build-out	growth	168.4	204.8	204.1
2015	15	build-out	growth	90.8	0.0	106.1

Table 7. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)
2015	16	build-out	growth	172.5	204.8	208.2
2016	17	build-out	growth	95.0	0.0	110.3
2016	18	build-out	growth	176.7	204.8	212.4
2017	19	build-out	growth	99.1	0.0	114.4
2017	20	build-out	growth	180.8	204.8	216.5
2018	21	build-out	growth	103.3	0.0	118.6
2018	22	build-out	growth	185.0	204.8	220.7
2019	23	build-out	growth	107.4	0.0	122.7
2019	24	build-out	growth	189.1	204.8	224.8
2020	25	build-out	growth	111.6	0.0	126.9
2020	26	build-out	growth	193.3	204.8	229.0
2021	27	build-out	growth	115.7	0.0	131.0
2021	28	build-out	growth	197.4	204.8	233.1
2022	29	build-out	growth	119.9	0.0	135.2
2022	30	build-out	growth	201.6	204.8	237.3
2023	31	build-out	growth	124.0	0.0	139.3
2023	32	build-out	growth	205.7	204.8	241.4
2024	33	build-out	growth	128.2	0.0	143.5
2024	34	build-out	growth	209.9	204.8	245.6
2025	35	build-out	growth	132.3	0.0	147.6
2025	36	build-out	growth	214.0	204.8	249.7
2026	37	build-out	growth	136.5	0.0	151.8
2026	38	build-out	growth	218.2	204.8	253.9
2027	39	build-out	growth	140.6	0.0	155.9
2027	40	build-out	build-out	222.3	204.8	258.0
2028	41	build-out	build-out	142.7	0.0	158.0
2028	42	build-out	build-out	222.3	204.8	258.0
2029	43	build-out	build-out	142.7	0.0	158.0
2029	44	build-out	build-out	222.3	204.8	258.0
2030	45	build-out	build-out	142.7	0.0	158.0
2030	46	build-out	build-out	222.3	204.8	258.0
2031	47	build-out	build-out	142.7	0.0	158.0
2031	48	build-out	build-out	222.3	204.8	258.0
2032	49	build-out	build-out	142.7	0.0	158.0
2032	50	build-out	build-out	222.3	204.8	258.0

Table 7. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)
2033	51	build-out	build-out	142.7	0.0	158.0
2033	52	build-out	build-out	222.3	204.8	258.0
2034	53	build-out	build-out	142.7	0.0	158.0
2034	54	build-out	build-out	222.3	204.8	258.0

Table 8. Simulated Groundwater Level Drawdown in the Vicinities of Surveyed Local Wells from 2008 to 2034 under Scenario C

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)
2008	1	I	growth	9.1	0.0	77.1
2008	2	I & II	growth	37.1	0.0	179.2
2009	3	I & II	growth	29.7	0.0	81.2
2009	4	II	growth	84.9	0.0	183.3
2010	5	none	growth	45.5	0.0	85.4
2010	6	III	growth	94.4	0.0	187.5
2011	7	III	growth	53.8	0.0	89.5
2011	8	III	growth	118.1	25.5	191.6
2012	9	III	growth	66.3	0.0	93.7
2012	10	IV	growth	141.7	51.0	195.8
2013	11	IV	growth	76.6	0.0	97.8
2013	12	IV	growth	155.0	127.9	199.9
2014	13	IV	growth	84.7	0.0	102.0
2014	14	build-out	growth	168.4	204.8	204.1
2015	15	build-out	growth	90.8	0.0	106.1
2015	16	build-out	growth	172.5	204.8	208.2
2016	17	build-out	growth	95.0	0.0	110.3
2016	18	build-out	growth	176.7	204.8	212.4
2017	19	build-out	growth	99.1	0.0	114.4
2017	20	build-out	growth	180.8	204.8	216.5
2018	21	build-out	growth	103.3	0.0	118.6
2018	22	build-out	growth	185.0	204.8	220.7

Table 8. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)	Small Farm Private Well Pumping Demand (acre-feet)	Well 3 Semi-annual Pumping Demand (incl. 50% SMCSD Growth) 582 afy SMCSD Build-out (acre-feet)
2019	23	build-out	growth	107.4	0.0	122.7
2019	24	build-out	growth	189.1	204.8	224.8
2020	25	build-out	growth	111.6	0.0	126.9
2020	26	build-out	growth	193.3	204.8	229.0
2021	27	build-out	growth	115.7	0.0	131.0
2021	28	build-out	growth	197.4	204.8	233.1
2022	29	build-out	growth	119.9	0.0	135.2
2022	30	build-out	growth	201.6	204.8	237.3
2023	31	build-out	growth	124.0	0.0	139.3
2023	32	build-out	growth	205.7	204.8	241.4
2024	33	build-out	growth	128.2	0.0	143.5
2024	34	build-out	growth	209.9	204.8	245.6
2025	35	build-out	growth	132.3	0.0	147.6
2025	36	build-out	growth	214.0	204.8	249.7
2026	37	build-out	growth	136.5	0.0	151.8
2026	38	build-out	growth	218.2	204.8	253.9
2027	39	build-out	growth	140.6	0.0	155.9
2027	40	build-out	build-out	222.3	204.8	258.0
2028	41	build-out	build-out	142.7	0.0	158.0
2028	42	build-out	build-out	222.3	204.8	258.0
2029	43	build-out	build-out	142.7	0.0	158.0
2029	44	build-out	build-out	222.3	204.8	258.0
2030	45	build-out	build-out	300.7	0.0	0.0
2030	46	build-out	build-out	480.3	204.8	0.0
2031	47	build-out	build-out	300.7	0.0	0.0
2031	48	build-out	build-out	480.3	204.8	0.0
2032	49	build-out	build-out	300.7	0.0	0.0
2032	50	build-out	build-out	480.3	204.8	0.0
2033	51	build-out	build-out	142.7	0.0	158.0
2033	52	build-out	build-out	222.3	204.8	258.0
2034	53	build-out	build-out	142.7	0.0	158.0
2034	54	build-out	build-out	222.3	204.8	258.0

Table 9. Simulated Groundwater Level Drawdown in the Vicinities of Surveyed Local Wells from 2008 to 2034 under Scenario A

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW4 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW2 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G1 Local Drawdown (feet)
2008	1	I	growth	1.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
2008	2	I & II	growth	4.3	1.0	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.0	0.0
2009	3	I & II	growth	3.9	1.1	1.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.1	0.1	0.1
2009	4	II	growth	10.2	2.6	2.3	0.6	0.4	0.3	0.5	0.4	0.3	0.4	1.0	0.2	0.2	0.2
2010	5	none	growth	6.6	2.2	2.1	0.8	0.6	0.5	0.7	0.5	0.5	0.6	1.2	0.3	0.4	0.3
2010	6	III	growth	12.0	3.4	3.2	1.0	0.8	0.6	0.8	0.7	0.7	0.7	1.6	0.4	0.5	0.4
2011	7	III	growth	8.1	2.9	2.8	1.2	1.0	0.8	1.0	0.9	0.8	0.9	1.6	0.6	0.6	0.6
2011	8	III	growth	15.3	4.4	4.1	1.4	1.4	1.0	1.6	1.0	1.1	1.7	2.1	0.7	1.1	0.9
2012	9	III	growth	10.3	3.8	3.7	1.6	1.5	1.2	1.5	1.3	1.3	1.4	2.2	0.9	1.0	0.9
2012	10	IV	growth	18.7	5.6	5.2	1.9	2.1	1.6	2.5	1.5	1.8	2.6	2.8	1.1	1.8	1.4
2013	11	IV	growth	12.3	4.8	4.6	2.2	2.1	1.8	2.2	1.8	1.9	2.0	2.9	1.4	1.5	1.4
2013	12	IV	growth	21.3	6.7	6.1	3.0	4.0	3.8	4.0	2.8	3.6	3.7	3.5	2.3	2.5	2.2
2014	13	IV	growth	14.4	5.8	5.5	3.1	3.1	2.8	3.2	2.7	2.9	2.8	3.6	2.2	2.3	2.2
2014	14	build-out	growth	23.9	7.8	7.2	6.4	5.4	5.4	5.2	5.1	5.0	4.6	4.3	3.5	3.3	3.1
2015	15	build-out	growth	16.3	6.9	6.5	4.5	4.2	3.9	4.2	3.9	4.0	3.7	4.4	3.2	3.1	3.0
2015	16	build-out	growth	25.5	8.7	8.0	7.3	6.2	6.3	6.1	6.0	5.8	5.4	5.0	4.3	4.0	3.8
2016	17	build-out	growth	17.7	7.7	7.3	5.2	4.9	4.6	4.9	4.7	4.7	4.4	5.0	3.9	3.7	3.6
2016	18	build-out	growth	26.7	9.5	8.7	8.0	6.9	6.9	6.7	6.7	6.5	5.9	5.5	4.9	4.6	4.3
2017	19	build-out	growth	18.8	8.4	7.9	5.8	5.5	5.2	5.5	5.2	5.2	4.9	5.5	4.4	4.2	4.1
2017	20	build-out	growth	27.8	10.0	9.3	8.5	7.4	7.4	7.2	7.2	7.0	6.4	6.0	5.4	5.0	4.8
2018	21	build-out	growth	19.9	8.9	8.4	6.2	5.9	5.6	5.9	5.7	5.7	5.4	5.9	4.8	4.6	4.6
2018	22	build-out	growth	28.8	10.6	9.8	8.9	7.8	7.8	7.6	7.6	7.4	6.8	6.4	5.7	5.4	5.2
2019	23	build-out	growth	20.9	9.4	8.9	6.6	6.3	6.0	6.3	6.0	6.1	5.7	6.3	5.2	4.9	4.9
2019	24	build-out	growth	29.8	11.0	10.2	9.2	8.1	8.1	8.0	7.9	7.7	7.1	6.8	6.1	5.7	5.5
2020	25	build-out	growth	21.8	9.9	9.3	6.9	6.7	6.3	6.6	6.3	6.4	6.0	6.6	5.5	5.2	5.2
2020	26	build-out	growth	30.7	11.5	10.6	9.5	8.5	8.4	8.3	8.2	8.0	7.4	7.1	6.4	6.0	5.8
2021	27	build-out	growth	22.7	10.3	9.7	7.2	7.0	6.6	6.9	6.6	6.7	6.3	6.9	5.8	5.5	5.5
2021	28	build-out	growth	31.6	11.9	11.0	9.8	8.7	8.7	8.6	8.5	8.3	7.7	7.3	6.6	6.2	6.0
2022	29	build-out	growth	23.6	10.7	10.1	7.5	7.2	6.9	7.2	6.9	6.9	6.6	7.2	6.0	5.7	5.7
2022	30	build-out	growth	32.5	12.3	11.4	10.1	9.0	9.0	8.8	8.7	8.6	7.9	7.6	6.9	6.4	6.2
2023	31	build-out	growth	24.5	11.0	10.4	7.7	7.5	7.1	7.4	7.1	7.2	6.8	7.4	6.2	5.9	5.9
2023	32	build-out	growth	33.3	12.6	11.7	10.3	9.2	9.2	9.1	8.9	8.8	8.1	7.8	7.1	6.6	6.4
2024	33	build-out	growth	25.3	11.4	10.8	8.0	7.7	7.3	7.7	7.3	7.4	7.0	7.7	6.4	6.1	6.1
2024	34	build-out	growth	34.2	13.0	12.1	10.5	9.4	9.4	9.3	9.1	9.0	8.3	8.1	7.3	6.8	6.6
2025	35	build-out	growth	26.1	11.7	11.1	8.2	7.9	7.5	7.9	7.5	7.6	7.2	7.9	6.6	6.3	6.3
2025	36	build-out	growth	35.0	13.3	12.4	10.8	9.6	9.6	9.5	9.3	9.2	8.5	8.3	7.4	7.0	6.8
2026	37	build-out	growth	27.0	12.1	11.4	8.4	8.1	7.7	8.1	7.7	7.8	7.4	8.1	6.8	6.4	6.4
2026	38	build-out	growth	35.8	13.6	12.7	11.0	9.8	9.8	9.6	9.5	9.4	8.7	8.5	7.6	7.1	6.9
2027	39	build-out	growth	27.8	12.4	11.7	8.6	8.3	7.9	8.2	7.9	7.9	7.5	8.3	6.9	6.5	6.6
2027	40	build-out	build-out	36.6	13.9	13.0	11.2	10.0	9.9	9.8	9.7	9.5	8.8	8.7	7.8	7.2	7.1
2028	41	build-out	build-out	28.3	12.6	11.9	8.8	8.4	8.0	8.4	8.1	8.1	7.7	8.5	7.1	6.7	6.7

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW4 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW2 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G1 Local Drawdown (feet)
2028	42	build-out	build-out	36.8	14.1	13.1	11.3	10.1	10.1	10.0	9.9	9.7	9.0	8.8	7.9	7.4	7.2
2029	43	build-out	build-out	28.4	12.7	12.1	8.9	8.6	8.2	8.5	8.2	8.2	7.8	8.6	7.2	6.8	6.8
2029	44	build-out	build-out	36.9	14.2	13.2	11.4	10.2	10.2	10.1	10.0	9.8	9.1	8.9	8.0	7.5	7.3
2030	45	build-out	build-out	28.5	12.8	12.1	9.0	8.7	8.3	8.6	8.3	8.3	7.9	8.6	7.3	6.9	6.9
2030	46	build-out	build-out	37.0	14.3	13.3	11.5	10.3	10.3	10.2	10.1	9.9	9.2	9.0	8.1	7.6	7.4
2031	47	build-out	build-out	28.6	12.9	12.2	9.1	8.7	8.3	8.7	8.4	8.4	7.9	8.7	7.4	7.0	7.0
2031	48	build-out	build-out	37.0	14.3	13.4	11.6	10.4	10.4	10.2	10.1	10.0	9.2	9.0	8.2	7.6	7.5
2032	49	build-out	build-out	28.6	13.0	12.3	9.1	8.8	8.4	8.8	8.5	8.5	8.0	8.8	7.5	7.0	7.1
2032	50	build-out	build-out	37.1	14.4	13.4	11.6	10.5	10.4	10.3	10.2	10.0	9.3	9.1	8.2	7.7	7.5
2033	51	build-out	build-out	28.7	13.0	12.3	9.2	8.9	8.5	8.8	8.5	8.6	8.1	8.8	7.5	7.1	7.1
2033	52	build-out	build-out	37.2	14.4	13.5	11.7	10.5	10.5	10.4	10.3	10.1	9.4	9.1	8.3	7.7	7.6
2034	53	build-out	build-out	28.7	13.1	12.3	9.3	8.9	8.5	8.9	8.6	8.6	8.1	8.9	7.6	7.1	7.2
2034	54	build-out	build-out	37.2	14.5	13.5	11.7	10.6	10.6	10.4	10.3	10.1	9.4	9.2	8.4	7.8	7.7

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	UW7 Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	South Well Local Drawdown (feet)	UW10 Local Drawdown (feet)	UW11 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
2009	3	I & II	growth	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.2	0.0	0.0	0.0	0.0
2009	4	II	growth	0.7	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.4	0.1	0.3	0.1	0.0	0.1	0.0
2010	5	none	growth	0.9	0.3	0.2	0.4	0.3	0.3	0.2	0.2	0.5	0.2	0.5	0.1	0.1	0.2	0.1
2010	6	III	growth	1.2	0.4	0.3	0.5	0.4	0.4	0.3	0.3	0.7	0.2	0.6	0.2	0.2	0.2	0.1
2011	7	III	growth	1.3	0.5	0.4	0.6	0.5	0.5	0.4	0.4	0.8	0.3	0.7	0.3	0.2	0.3	0.2
2011	8	III	growth	1.6	0.7	0.6	1.1	1.0	1.1	0.6	0.6	1.0	0.7	0.9	0.5	0.4	0.5	0.3
2012	9	III	growth	1.8	0.8	0.7	1.0	0.8	0.9	0.7	0.7	1.2	0.6	1.0	0.5	0.4	0.6	0.3
2012	10	IV	growth	2.1	1.1	0.9	1.7	1.5	1.7	0.9	1.0	1.4	1.0	1.2	0.8	0.6	0.9	0.5
2013	11	IV	growth	2.3	1.2	1.1	1.5	1.3	1.4	1.1	1.1	1.6	1.0	1.4	0.8	0.7	0.9	0.6
2013	12	IV	growth	2.7	1.9	1.7	2.3	2.1	2.2	1.5	1.5	1.9	1.4	1.6	1.1	0.9	1.2	0.7
2014	13	IV	growth	2.9	2.0	1.8	2.2	1.9	2.0	1.7	1.6	2.1	1.5	1.9	1.3	1.1	1.4	0.9
2014	14	build-out	growth	3.2	2.7	2.4	2.9	2.7	2.8	2.2	2.1	2.4	1.9	2.1	1.6	1.3	1.6	1.1
2015	15	build-out	growth	3.5	2.8	2.6	2.8	2.5	2.6	2.4	2.3	2.7	2.0	2.3	1.7	1.6	1.8	1.3
2015	16	build-out	growth	3.8	3.4	3.1	3.6	3.3	3.4	2.8	2.7	2.9	2.4	2.5	2.0	1.8	2.1	1.5
2016	17	build-out	growth	4.0	3.4	3.2	3.4	3.1	3.1	3.0	2.8	3.1	2.5	2.8	2.1	2.0	2.2	1.7
2016	18	build-out	growth	4.2	4.0	3.7	4.0	3.8	3.9	3.4	3.2	3.3	2.9	2.9	2.4	2.2	2.5	1.8

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	UW7 Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	South Well Local Drawdown (feet)	UW10 Local Drawdown (feet)	UW11 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)
2017	19	build-out	growth	4.4	3.9	3.7	3.8	3.5	3.6	3.5	3.2	3.5	2.9	3.1	2.5	2.4	2.6	2.0
2017	20	build-out	growth	4.6	4.4	4.1	4.5	4.2	4.3	3.8	3.6	3.7	3.2	3.2	2.8	2.5	2.8	2.2
2018	21	build-out	growth	4.8	4.3	4.1	4.2	3.9	3.9	3.9	3.6	3.9	3.2	3.4	2.8	2.7	2.9	2.3
2018	22	build-out	growth	5.0	4.8	4.5	4.8	4.5	4.6	4.1	3.9	4.0	3.5	3.5	3.1	2.8	3.1	2.5
2019	23	build-out	growth	5.1	4.7	4.5	4.5	4.2	4.2	4.2	3.9	4.1	3.5	3.7	3.1	3.0	3.1	2.6
2019	24	build-out	growth	5.3	5.1	4.8	5.1	4.8	4.9	4.4	4.2	4.2	3.8	3.8	3.3	3.1	3.3	2.7
2020	25	build-out	growth	5.4	5.0	4.8	4.8	4.5	4.5	4.5	4.2	4.4	3.7	3.9	3.3	3.2	3.3	2.8
2020	26	build-out	growth	5.5	5.4	5.1	5.3	5.1	5.1	4.7	4.4	4.5	4.0	4.0	3.5	3.3	3.5	2.9
2021	27	build-out	growth	5.6	5.2	5.0	5.0	4.7	4.7	4.7	4.4	4.6	3.9	4.1	3.5	3.4	3.5	3.1
2021	28	build-out	growth	5.8	5.6	5.3	5.5	5.3	5.4	4.9	4.7	4.7	4.2	4.2	3.7	3.5	3.6	3.1
2022	29	build-out	growth	5.9	5.5	5.3	5.2	4.9	4.9	4.9	4.6	4.8	4.1	4.3	3.7	3.6	3.7	3.2
2022	30	build-out	growth	6.0	5.8	5.6	5.7	5.5	5.5	5.2	4.9	4.9	4.4	4.3	3.9	3.7	3.8	3.3
2023	31	build-out	growth	6.1	5.7	5.5	5.4	5.1	5.1	5.1	4.8	4.9	4.3	4.4	3.9	3.8	3.8	3.4
2023	32	build-out	growth	6.2	6.0	5.8	5.9	5.7	5.7	5.4	5.0	5.0	4.6	4.5	4.0	3.9	3.9	3.5
2024	33	build-out	growth	6.3	5.9	5.7	5.5	5.3	5.3	5.3	5.0	5.1	4.4	4.6	4.0	3.9	3.9	3.5
2024	34	build-out	growth	6.4	6.2	5.9	6.1	5.8	5.9	5.5	5.2	5.2	4.7	4.6	4.2	4.0	4.0	3.6
2025	35	build-out	growth	6.5	6.0	5.8	5.7	5.4	5.4	5.5	5.1	5.2	4.6	4.7	4.1	4.1	4.0	3.7
2025	36	build-out	growth	6.6	6.4	6.1	6.2	6.0	6.0	5.7	5.3	5.3	4.8	4.7	4.3	4.1	4.1	3.7
2026	37	build-out	growth	6.7	6.2	6.0	5.8	5.6	5.5	5.6	5.3	5.4	4.7	4.8	4.2	4.2	4.1	3.8
2026	38	build-out	growth	6.8	6.5	6.3	6.3	6.1	6.1	5.8	5.5	5.4	4.9	4.8	4.4	4.3	4.2	3.8
2027	39	build-out	growth	6.8	6.3	6.1	5.9	5.7	5.6	5.8	5.4	5.5	4.8	4.9	4.3	4.3	4.2	3.9
2027	40	build-out	build-out	6.9	6.7	6.4	6.4	6.2	6.2	6.0	5.6	5.5	5.0	4.9	4.5	4.4	4.2	3.9
2028	41	build-out	build-out	7.0	6.5	6.3	6.1	5.8	5.8	5.9	5.5	5.6	4.9	5.0	4.4	4.4	4.2	4.0
2028	42	build-out	build-out	7.1	6.8	6.5	6.5	6.3	6.3	6.1	5.7	5.6	5.1	5.0	4.6	4.4	4.3	4.0
2029	43	build-out	build-out	7.1	6.6	6.4	6.2	5.9	5.8	6.0	5.6	5.7	5.0	5.1	4.5	4.5	4.3	4.1
2029	44	build-out	build-out	7.2	6.9	6.6	6.6	6.4	6.4	6.2	5.8	5.7	5.2	5.1	4.6	4.5	4.4	4.1
2030	45	build-out	build-out	7.1	6.7	6.5	6.2	6.0	5.9	6.1	5.7	5.7	5.1	5.2	4.6	4.6	4.4	4.2
2030	46	build-out	build-out	7.2	7.0	6.7	6.7	6.5	6.5	6.3	5.9	5.7	5.3	5.2	4.7	4.6	4.5	4.2
2031	47	build-out	build-out	7.2	6.8	6.6	6.3	6.1	6.0	6.2	5.8	5.8	5.1	5.2	4.7	4.6	4.4	4.2
2031	48	build-out	build-out	7.3	7.1	6.8	6.8	6.6	6.6	6.3	6.0	5.8	5.4	5.2	4.8	4.7	4.5	4.2
2032	49	build-out	build-out	7.2	6.8	6.6	6.4	6.2	6.1	6.3	5.9	5.8	5.2	5.3	4.7	4.7	4.5	4.3
2032	50	build-out	build-out	7.3	7.1	6.9	6.8	6.6	6.6	6.4	6.0	5.9	5.4	5.3	4.8	4.7	4.6	4.3
2033	51	build-out	build-out	7.3	6.9	6.7	6.4	6.2	6.1	6.3	5.9	5.9	5.3	5.3	4.8	4.8	4.6	4.4
2033	52	build-out	build-out	7.4	7.2	6.9	6.9	6.7	6.7	6.5	6.1	5.9	5.5	5.3	4.9	4.8	4.6	4.4
2034	53	build-out	build-out	7.3	7.0	6.8	6.5	6.3	6.2	6.4	6.0	5.9	5.3	5.4	4.8	4.8	4.6	4.4
2034	54	build-out	build-out	7.4	7.3	7.0	6.9	6.7	6.7	6.5	6.1	5.9	5.5	5.4	4.9	4.9	4.7	4.4

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-17G1 Local Drawdown (feet)	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	UW13 Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
2009	3	I & II	growth	0.0	0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
2009	4	II	growth	0.1	0.1	0.0	0.0	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
2010	5	none	growth	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2
2010	6	III	growth	0.3	0.3	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2
2011	7	III	growth	0.3	0.4	0.2	0.2	0.3	0.1	0.0	0.1	0.1	0.0	0.0	-0.1	0.0	-0.2
2011	8	III	growth	0.5	0.5	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	-0.1	0.0	-0.2
2012	9	III	growth	0.6	0.6	0.4	0.3	0.4	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	-0.1
2012	10	IV	growth	0.8	0.7	0.5	0.5	0.5	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	-0.1
2013	11	IV	growth	0.9	0.9	0.6	0.6	0.5	0.4	0.3	0.2	0.1	0.0	0.0	0.1	0.1	-0.1
2013	12	IV	growth	1.1	1.0	0.8	0.7	0.6	0.5	0.3	0.3	0.2	0.1	0.0	0.1	0.1	0.0
2014	13	IV	growth	1.3	1.2	0.9	0.9	0.7	0.7	0.5	0.3	0.2	0.1	0.1	0.3	0.2	0.0
2014	14	build-out	growth	1.5	1.4	1.1	1.1	0.9	0.8	0.5	0.4	0.3	0.1	0.1	0.3	0.2	0.1
2015	15	build-out	growth	1.7	1.6	1.3	1.2	1.0	1.0	0.7	0.4	0.3	0.2	0.2	0.5	0.3	0.2
2015	16	build-out	growth	1.9	1.7	1.5	1.4	1.1	1.1	0.8	0.5	0.4	0.2	0.2	0.5	0.3	0.2
2016	17	build-out	growth	2.1	2.0	1.7	1.6	1.3	1.3	0.9	0.6	0.4	0.3	0.3	0.7	0.4	0.3
2016	18	build-out	growth	2.3	2.1	1.8	1.7	1.4	1.4	1.0	0.7	0.5	0.3	0.4	0.7	0.5	0.4
2017	19	build-out	growth	2.4	2.3	2.0	1.9	1.5	1.5	1.1	0.7	0.6	0.4	0.5	0.8	0.6	0.5
2017	20	build-out	growth	2.6	2.3	2.1	2.0	1.6	1.6	1.2	0.8	0.6	0.5	0.5	0.9	0.6	0.5
2018	21	build-out	growth	2.7	2.5	2.2	2.1	1.7	1.7	1.3	0.9	0.7	0.5	0.6	1.0	0.7	0.6
2018	22	build-out	growth	2.8	2.6	2.4	2.3	1.8	1.8	1.3	0.9	0.8	0.6	0.6	1.0	0.7	0.6
2019	23	build-out	growth	2.9	2.7	2.5	2.4	1.9	1.9	1.4	1.0	0.8	0.6	0.7	1.1	0.8	0.7
2019	24	build-out	growth	3.0	2.8	2.6	2.5	2.0	2.0	1.4	1.0	0.9	0.7	0.8	1.1	0.8	0.7
2020	25	build-out	growth	3.1	2.9	2.7	2.5	2.1	2.1	1.5	1.1	0.9	0.8	0.8	1.2	0.9	0.8
2020	26	build-out	growth	3.2	2.9	2.8	2.6	2.1	2.1	1.5	1.1	1.0	0.8	0.9	1.2	0.9	0.8
2021	27	build-out	growth	3.3	3.1	2.8	2.7	2.2	2.2	1.6	1.2	1.0	0.9	0.9	1.2	1.0	0.8
2021	28	build-out	growth	3.3	3.1	2.9	2.8	2.2	2.2	1.6	1.2	1.1	0.9	1.0	1.2	1.0	0.8
2022	29	build-out	growth	3.4	3.2	3.0	2.8	2.3	2.3	1.6	1.3	1.1	0.9	1.0	1.3	1.0	0.9
2022	30	build-out	growth	3.5	3.2	3.1	2.9	2.4	2.3	1.6	1.3	1.1	1.0	1.0	1.2	1.0	0.9
2023	31	build-out	growth	3.5	3.3	3.1	3.0	2.4	2.4	1.7	1.3	1.2	1.0	1.1	1.3	1.1	0.9
2023	32	build-out	growth	3.6	3.3	3.2	3.0	2.5	2.4	1.7	1.4	1.2	1.1	1.1	1.2	1.1	0.9
2024	33	build-out	growth	3.6	3.4	3.2	3.1	2.5	2.4	1.7	1.4	1.2	1.1	1.1	1.3	1.1	0.9
2024	34	build-out	growth	3.7	3.4	3.3	3.1	2.6	2.4	1.7	1.4	1.3	1.1	1.1	1.2	1.1	0.9
2025	35	build-out	growth	3.7	3.5	3.3	3.2	2.6	2.5	1.7	1.5	1.3	1.2	1.2	1.3	1.1	0.9
2025	36	build-out	growth	3.7	3.5	3.4	3.2	2.7	2.5	1.7	1.5	1.3	1.2	1.2	1.2	1.1	0.8
2026	37	build-out	growth	3.8	3.5	3.4	3.2	2.7	2.5	1.7	1.5	1.4	1.2	1.2	1.2	1.1	0.8
2026	38	build-out	growth	3.8	3.5	3.5	3.3	2.7	2.5	1.7	1.5	1.4	1.2	1.2	1.2	1.1	0.8
2027	39	build-out	growth	3.8	3.6	3.5	3.3	2.8	2.5	1.7	1.6	1.4	1.3	1.2	1.2	1.1	0.8
2027	40	build-out	build-out	3.8	3.6	3.5	3.3	2.8	2.5	1.6	1.6	1.4	1.3	1.2	1.1	1.1	0.8
2028	41	build-out	build-out	3.9	3.7	3.5	3.3	2.9	2.5	1.7	1.6	1.5	1.3	1.3	1.2	1.1	0.8

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-17G1 Local Drawdown (feet)	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	UW13 Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)
2028	42	build-out	build-out	3.9	3.6	3.6	3.4	2.9	2.6	1.7	1.6	1.5	1.3	1.3	1.2	1.1	0.8
2029	43	build-out	build-out	4.0	3.7	3.6	3.4	3.0	2.6	1.7	1.7	1.5	1.3	1.3	1.2	1.1	0.8
2029	44	build-out	build-out	4.0	3.7	3.7	3.5	3.0	2.6	1.7	1.7	1.5	1.4	1.3	1.2	1.2	0.8
2030	45	build-out	build-out	4.0	3.8	3.7	3.5	3.0	2.7	1.8	1.7	1.6	1.4	1.3	1.3	1.2	0.9
2030	46	build-out	build-out	4.0	3.8	3.7	3.5	3.0	2.7	1.8	1.7	1.6	1.4	1.4	1.3	1.2	0.9
2031	47	build-out	build-out	4.1	3.8	3.7	3.5	3.1	2.7	1.8	1.8	1.6	1.4	1.4	1.3	1.2	0.9
2031	48	build-out	build-out	4.1	3.8	3.8	3.6	3.1	2.7	1.8	1.8	1.6	1.4	1.4	1.3	1.2	1.0
2032	49	build-out	build-out	4.1	3.9	3.8	3.6	3.1	2.8	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.0
2032	50	build-out	build-out	4.2	3.9	3.9	3.6	3.1	2.8	1.9	1.8	1.7	1.5	1.4	1.4	1.3	1.0
2033	51	build-out	build-out	4.2	3.9	3.9	3.7	3.1	2.8	1.9	1.8	1.7	1.5	1.5	1.4	1.3	1.0
2033	52	build-out	build-out	4.2	3.9	3.9	3.7	3.1	2.8	1.9	1.8	1.7	1.5	1.5	1.4	1.3	1.0
2034	53	build-out	build-out	4.2	4.0	3.9	3.7	3.2	2.9	2.0	1.8	1.7	1.5	1.5	1.5	1.3	1.1
2034	54	build-out	build-out	4.3	4.0	4.0	3.7	3.2	2.9	2.0	1.8	1.7	1.6	1.5	1.5	1.4	1.1

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	-0.1
2008	2	I & II	growth	0.0	0.0	0.0	0.0	-0.3
2009	3	I & II	growth	0.0	-0.1	0.0	0.0	-0.4
2009	4	II	growth	0.0	-0.1	0.0	0.0	-0.6
2010	5	none	growth	-0.1	-0.1	-0.1	-0.1	-0.7
2010	6	III	growth	-0.1	-0.1	-0.1	-0.1	-0.8
2011	7	III	growth	-0.1	-0.2	-0.1	-0.1	-0.9
2011	8	III	growth	-0.1	-0.2	-0.1	-0.1	-1.0
2012	9	III	growth	-0.1	-0.2	-0.1	-0.1	-1.1
2012	10	IV	growth	-0.1	-0.1	-0.1	-0.1	-1.2
2013	11	IV	growth	-0.1	-0.1	-0.1	-0.1	-1.3
2013	12	IV	growth	-0.1	-0.1	-0.1	-0.1	-1.4
2014	13	IV	growth	0.0	-0.1	-0.1	-0.1	-1.4
2014	14	build-out	growth	0.0	0.0	-0.1	-0.1	-1.5
2015	15	build-out	growth	0.0	0.0	0.0	-0.1	-1.5
2015	16	build-out	growth	0.1	0.1	0.0	0.0	-1.5
2016	17	build-out	growth	0.1	0.1	0.0	0.0	-1.6
2016	18	build-out	growth	0.1	0.2	0.0	0.0	-1.6
2017	19	build-out	growth	0.2	0.3	0.1	0.1	-1.6

Table 9. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2017	20	build-out	growth	0.2	0.3	0.1	0.1	-1.7
2018	21	build-out	growth	0.3	0.4	0.2	0.1	-1.7
2018	22	build-out	growth	0.3	0.4	0.2	0.2	-1.8
2019	23	build-out	growth	0.4	0.5	0.2	0.2	-1.9
2019	24	build-out	growth	0.4	0.5	0.3	0.2	-2.0
2020	25	build-out	growth	0.4	0.5	0.3	0.3	-2.0
2020	26	build-out	growth	0.5	0.6	0.3	0.3	-2.1
2021	27	build-out	growth	0.5	0.6	0.3	0.3	-2.2
2021	28	build-out	growth	0.5	0.6	0.4	0.3	-2.3
2022	29	build-out	growth	0.6	0.6	0.4	0.4	-2.4
2022	30	build-out	growth	0.6	0.6	0.4	0.4	-2.5
2023	31	build-out	growth	0.6	0.6	0.4	0.4	-2.6
2023	32	build-out	growth	0.6	0.7	0.4	0.4	-2.7
2024	33	build-out	growth	0.7	0.7	0.5	0.4	-2.8
2024	34	build-out	growth	0.7	0.7	0.5	0.4	-3.0
2025	35	build-out	growth	0.7	0.7	0.5	0.4	-3.1
2025	36	build-out	growth	0.7	0.7	0.5	0.5	-3.2
2026	37	build-out	growth	0.7	0.7	0.5	0.5	-3.3
2026	38	build-out	growth	0.7	0.6	0.5	0.5	-3.5
2027	39	build-out	growth	0.7	0.6	0.5	0.5	-3.6
2027	40	build-out	build-out	0.7	0.6	0.5	0.5	-3.7
2028	41	build-out	build-out	0.7	0.6	0.5	0.5	-3.7
2028	42	build-out	build-out	0.7	0.6	0.5	0.5	-3.7
2029	43	build-out	build-out	0.7	0.7	0.5	0.5	-3.6
2029	44	build-out	build-out	0.8	0.7	0.5	0.5	-3.7
2030	45	build-out	build-out	0.8	0.7	0.5	0.5	-3.6
2030	46	build-out	build-out	0.8	0.7	0.6	0.5	-3.6
2031	47	build-out	build-out	0.8	0.7	0.6	0.5	-3.5
2031	48	build-out	build-out	0.8	0.8	0.6	0.6	-3.6
2032	49	build-out	build-out	0.9	0.8	0.6	0.6	-3.5
2032	50	build-out	build-out	0.9	0.8	0.6	0.6	-3.5
2033	51	build-out	build-out	0.9	0.8	0.6	0.6	-3.5
2033	52	build-out	build-out	0.9	0.9	0.7	0.6	-3.5
2034	53	build-out	build-out	0.9	0.9	0.7	0.6	-3.4
2034	54	build-out	build-out	1.0	0.9	0.7	0.7	-3.4

Table 10. Simulated Groundwater Level Drawdown in the Vicinities of Surveyed Local Wells from 2008 to 2034 under Scenario B

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW4 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW2 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G01 Local Drawdown (feet)	UW7 Local Drawdown (feet)
2008	1	I	growth	1.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2008	2	I & II	growth	4.2	1.0	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0
2009	3	I & II	growth	3.7	1.1	1.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.1	0.1	0.1	0.1
2009	4	II	growth	9.9	2.5	2.3	0.5	0.4	0.3	0.4	0.3	0.3	0.4	1.0	0.2	0.2	0.2	0.1
2010	5	none	growth	6.2	2.1	2.0	0.7	0.6	0.5	0.6	0.5	0.5	0.5	1.1	0.3	0.3	0.3	0.3
2010	6	III	growth	11.6	3.3	3.0	1.0	0.8	0.6	0.8	0.7	0.7	0.7	1.5	0.4	0.5	0.4	0.4
2011	7	III	growth	7.6	2.8	2.7	1.1	0.9	0.8	1.0	0.8	0.8	0.8	1.6	0.6	0.6	0.5	0.5
2011	8	III	growth	14.7	4.2	3.9	1.3	1.3	1.0	1.5	1.0	1.1	1.7	2.1	0.7	1.1	0.9	0.7
2012	9	III	growth	9.6	3.6	3.5	1.5	1.4	1.2	1.5	1.2	1.3	1.3	2.1	0.9	1.0	0.9	0.8
2012	10	IV	growth	18.0	5.4	5.0	1.9	2.1	1.5	2.4	1.5	1.7	2.6	2.7	1.1	1.7	1.3	1.1
2013	11	IV	growth	11.5	4.6	4.3	2.1	2.0	1.7	2.1	1.7	1.8	1.9	2.8	1.3	1.5	1.4	1.2
2013	12	IV	growth	20.4	6.4	5.9	2.9	3.9	3.7	4.0	2.7	3.5	3.6	3.4	2.2	2.5	2.2	1.9
2014	13	IV	growth	13.4	5.5	5.2	3.0	3.0	2.7	3.1	2.6	2.8	2.8	3.5	2.1	2.2	2.1	1.9
2014	14	build-out	growth	22.9	7.5	6.9	6.3	5.3	5.3	5.1	5.0	4.9	4.5	4.2	3.4	3.3	3.0	2.6
2015	15	build-out	growth	15.2	6.6	6.2	4.3	4.1	3.8	4.1	3.8	3.9	3.7	4.2	3.1	3.0	3.0	2.8
2015	16	build-out	growth	24.2	8.4	7.7	7.2	6.1	6.2	6.0	5.9	5.7	5.3	4.8	4.2	4.0	3.7	3.4
2016	17	build-out	growth	16.4	7.3	6.9	5.0	4.8	4.5	4.8	4.6	4.6	4.3	4.8	3.8	3.6	3.6	3.4
2016	18	build-out	growth	25.3	9.0	8.3	7.8	6.7	6.8	6.6	6.5	6.4	5.9	5.4	4.8	4.5	4.3	3.9
2017	19	build-out	growth	17.4	7.9	7.4	5.6	5.4	5.0	5.4	5.1	5.1	4.8	5.3	4.3	4.1	4.1	3.9
2017	20	build-out	growth	26.3	9.6	8.8	8.3	7.2	7.3	7.1	7.0	6.8	6.3	5.8	5.3	4.9	4.7	4.3
2018	21	build-out	growth	18.3	8.4	7.9	6.0	5.8	5.5	5.8	5.5	5.5	5.3	5.7	4.7	4.5	4.5	4.2
2018	22	build-out	growth	27.1	10.1	9.3	8.6	7.6	7.6	7.5	7.4	7.2	6.7	6.2	5.6	5.3	5.1	4.7
2019	23	build-out	growth	19.1	8.9	8.3	6.4	6.2	5.8	6.2	5.9	5.9	5.6	6.1	5.1	4.8	4.8	4.6
2019	24	build-out	growth	27.9	10.5	9.7	9.0	8.0	8.0	7.8	7.7	7.6	7.0	6.5	6.0	5.6	5.4	5.0
2020	25	build-out	growth	19.9	9.3	8.7	6.7	6.5	6.1	6.5	6.2	6.2	5.9	6.4	5.4	5.1	5.1	4.9
2020	26	build-out	growth	28.7	10.9	10.0	9.3	8.3	8.3	8.1	8.0	7.9	7.3	6.8	6.2	5.9	5.7	5.3
2021	27	build-out	growth	20.6	9.6	9.1	6.9	6.8	6.4	6.7	6.4	6.5	6.2	6.6	5.6	5.4	5.4	5.1
2021	28	build-out	growth	29.5	11.2	10.4	9.5	8.5	8.5	8.4	8.2	8.1	7.5	7.1	6.5	6.1	5.9	5.5
2022	29	build-out	growth	21.4	10.0	9.4	7.2	7.0	6.7	7.0	6.7	6.7	6.4	6.9	5.8	5.6	5.6	5.3
2022	30	build-out	growth	30.2	11.5	10.7	9.8	8.8	8.8	8.6	8.5	8.4	7.8	7.3	6.7	6.3	6.1	5.7
2023	31	build-out	growth	22.1	10.3	9.7	7.4	7.2	6.9	7.2	6.9	7.0	6.6	7.1	6.1	5.8	5.8	5.6
2023	32	build-out	growth	30.9	11.9	11.0	10.0	9.0	9.0	8.8	8.7	8.6	8.0	7.5	6.9	6.5	6.3	5.9
2024	33	build-out	growth	22.8	10.6	10.0	7.6	7.4	7.1	7.4	7.1	7.2	6.8	7.3	6.2	6.0	6.0	5.7
2024	34	build-out	growth	31.5	12.2	11.3	10.2	9.2	9.2	9.0	8.9	8.8	8.2	7.7	7.1	6.7	6.5	6.1
2025	35	build-out	growth	23.4	10.9	10.3	7.8	7.6	7.3	7.6	7.3	7.3	7.0	7.5	6.4	6.1	6.1	5.9
2025	36	build-out	growth	32.2	12.4	11.5	10.4	9.4	9.3	9.2	9.0	8.9	8.3	7.9	7.2	6.8	6.6	6.2
2026	37	build-out	growth	24.1	11.2	10.5	8.0	7.8	7.4	7.8	7.4	7.5	7.2	7.7	6.6	6.3	6.3	6.0
2026	38	build-out	growth	32.9	12.7	11.8	10.6	9.5	9.5	9.4	9.2	9.1	8.5	8.1	7.4	7.0	6.8	6.4
2027	39	build-out	growth	24.7	11.4	10.8	8.2	8.0	7.6	8.0	7.6	7.7	7.3	7.9	6.7	6.4	6.4	6.2
2027	40	build-out	build-out	33.5	13.0	12.0	10.7	9.7	9.7	9.5	9.4	9.3	8.6	8.3	7.5	7.1	6.9	6.5
2028	41	build-out	build-out	25.1	11.7	11.0	8.3	8.1	7.7	8.1	7.7	7.8	7.4	8.0	6.9	6.5	6.6	6.3

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW4 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW2 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G01 Local Drawdown (feet)	UW7 Local Drawdown (feet)
2028	42	build-out	build-out	33.7	13.1	12.2	10.9	9.8	9.8	9.7	9.5	9.4	8.8	8.4	7.7	7.2	7.0	6.6
2029	43	build-out	build-out	25.3	11.8	11.1	8.4	8.2	7.9	8.2	7.9	7.9	7.6	8.1	7.0	6.7	6.7	6.4
2029	44	build-out	build-out	33.8	13.2	12.3	11.0	9.9	9.9	9.8	9.6	9.5	8.9	8.5	7.8	7.3	7.1	6.8
2030	45	build-out	build-out	25.4	11.9	11.2	8.5	8.3	8.0	8.3	8.0	8.0	7.6	8.2	7.1	6.7	6.8	6.5
2030	46	build-out	build-out	33.8	13.3	12.3	11.0	10.0	10.0	9.9	9.7	9.6	8.9	8.5	7.8	7.4	7.2	6.8
2031	47	build-out	build-out	25.4	11.9	11.2	8.6	8.4	8.0	8.4	8.0	8.1	7.7	8.3	7.2	6.8	6.8	6.6
2031	48	build-out	build-out	33.9	13.4	12.4	11.1	10.1	10.1	9.9	9.8	9.7	9.0	8.6	7.9	7.5	7.3	6.9
2032	49	build-out	build-out	25.5	12.0	11.3	8.7	8.5	8.1	8.5	8.1	8.2	7.8	8.4	7.2	6.9	6.9	6.7
2032	50	build-out	build-out	34.0	13.4	12.4	11.2	10.2	10.1	10.0	9.8	9.7	9.1	8.7	8.0	7.6	7.4	7.0
2033	51	build-out	build-out	25.5	12.0	11.3	8.7	8.5	8.2	8.5	8.2	8.3	7.9	8.4	7.3	7.0	7.0	6.7
2033	52	build-out	build-out	34.0	13.5	12.5	11.2	10.2	10.2	10.1	9.9	9.8	9.1	8.7	8.0	7.6	7.4	7.0
2034	53	build-out	build-out	25.6	12.1	11.4	8.8	8.6	8.2	8.6	8.2	8.3	7.9	8.5	7.3	7.0	7.0	6.8
2034	54	build-out	build-out	34.1	13.5	12.5	11.3	10.3	10.2	10.1	9.9	9.8	9.2	8.8	8.1	7.7	7.5	7.1

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	South Well Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	UW11 Local Drawdown (feet)	UW10 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-17G1 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	3	I & II	growth	0.4	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.1	0.0
2009	4	II	growth	0.7	0.2	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.3	0.1	0.0	0.1	0.1	0.0
2010	5	none	growth	0.9	0.4	0.2	0.3	0.3	0.2	0.2	0.5	0.2	0.5	0.1	0.1	0.2	0.2	0.1
2010	6	III	growth	1.1	0.5	0.3	0.4	0.4	0.3	0.3	0.7	0.2	0.6	0.2	0.2	0.3	0.3	0.1
2011	7	III	growth	1.3	0.6	0.4	0.5	0.5	0.4	0.4	0.8	0.3	0.7	0.3	0.2	0.3	0.4	0.2
2011	8	III	growth	1.6	1.1	0.6	1.1	1.0	0.6	0.6	1.0	0.7	0.9	0.5	0.4	0.6	0.5	0.3
2012	9	III	growth	1.7	1.0	0.7	0.9	0.8	0.7	0.7	1.2	0.6	1.0	0.5	0.4	0.6	0.6	0.3
2012	10	IV	growth	2.0	1.7	0.9	1.7	1.5	0.9	1.0	1.4	1.0	1.2	0.8	0.6	0.9	0.8	0.5
2013	11	IV	growth	2.2	1.5	1.1	1.3	1.3	1.0	1.0	1.6	1.0	1.4	0.8	0.7	1.0	1.0	0.6
2013	12	IV	growth	2.5	2.3	1.6	2.2	2.0	1.5	1.5	1.9	1.4	1.6	1.1	0.9	1.3	1.2	0.7
2014	13	IV	growth	2.8	2.2	1.8	2.0	1.9	1.7	1.6	2.1	1.5	1.9	1.3	1.1	1.4	1.4	0.9
2014	14	build-out	growth	3.1	2.9	2.4	2.8	2.7	2.2	2.1	2.4	1.9	2.0	1.6	1.3	1.7	1.6	1.1
2015	15	build-out	growth	3.3	2.8	2.6	2.6	2.5	2.4	2.2	2.6	2.0	2.3	1.7	1.6	1.9	1.8	1.3
2015	16	build-out	growth	3.6	3.5	3.1	3.4	3.3	2.8	2.6	2.9	2.4	2.5	2.0	1.8	2.1	2.0	1.5
2016	17	build-out	growth	3.8	3.4	3.2	3.1	3.1	3.0	2.8	3.1	2.5	2.7	2.2	2.0	2.3	2.2	1.7
2016	18	build-out	growth	4.1	4.0	3.6	3.9	3.8	3.3	3.1	3.3	2.9	2.9	2.4	2.2	2.5	2.4	1.8
2017	19	build-out	growth	4.2	3.8	3.7	3.5	3.5	3.4	3.2	3.5	2.9	3.1	2.5	2.4	2.6	2.5	2.0
2017	20	build-out	growth	4.4	4.4	4.1	4.3	4.2	3.7	3.5	3.7	3.2	3.2	2.8	2.6	2.9	2.7	2.2
2018	21	build-out	growth	4.6	4.2	4.1	3.9	3.9	3.8	3.6	3.8	3.2	3.4	2.9	2.7	2.9	2.8	2.3

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	South Well Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	UW11 Local Drawdown (feet)	UW10 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-17G1 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)
2018	22	build-out	growth	4.8	4.8	4.4	4.6	4.5	4.1	3.9	4.0	3.6	3.5	3.1	2.9	3.1	2.9	2.5
2019	23	build-out	growth	4.9	4.5	4.4	4.2	4.2	4.1	3.9	4.1	3.5	3.7	3.1	3.0	3.2	3.1	2.6
2019	24	build-out	growth	5.0	5.0	4.7	4.9	4.8	4.4	4.2	4.2	3.8	3.8	3.3	3.1	3.4	3.1	2.7
2020	25	build-out	growth	5.1	4.7	4.7	4.5	4.5	4.4	4.1	4.3	3.7	3.9	3.4	3.2	3.4	3.3	2.9
2020	26	build-out	growth	5.3	5.3	5.0	5.1	5.0	4.6	4.4	4.4	4.0	4.0	3.6	3.3	3.6	3.3	2.9
2021	27	build-out	growth	5.4	5.0	4.9	4.7	4.7	4.7	4.4	4.6	4.0	4.1	3.6	3.4	3.6	3.4	3.1
2021	28	build-out	growth	5.5	5.5	5.2	5.3	5.3	4.9	4.6	4.6	4.2	4.2	3.8	3.5	3.7	3.5	3.1
2022	29	build-out	growth	5.6	5.2	5.2	4.9	4.9	4.9	4.6	4.7	4.2	4.3	3.8	3.6	3.8	3.6	3.2
2022	30	build-out	growth	5.7	5.7	5.4	5.5	5.5	5.1	4.8	4.8	4.4	4.3	3.9	3.7	3.9	3.6	3.3
2023	31	build-out	growth	5.8	5.3	5.4	5.1	5.1	5.1	4.8	4.9	4.3	4.4	3.9	3.8	3.9	3.7	3.4
2023	32	build-out	growth	5.9	5.9	5.6	5.7	5.6	5.3	5.0	5.0	4.6	4.5	4.1	3.9	4.0	3.7	3.5
2024	33	build-out	growth	6.0	5.5	5.5	5.2	5.3	5.2	4.9	5.1	4.5	4.6	4.1	3.9	4.0	3.8	3.6
2024	34	build-out	growth	6.1	6.0	5.8	5.8	5.8	5.4	5.2	5.1	4.7	4.6	4.2	4.0	4.1	3.8	3.6
2025	35	build-out	growth	6.1	5.7	5.7	5.4	5.4	5.4	5.1	5.2	4.6	4.7	4.2	4.1	4.1	3.9	3.7
2025	36	build-out	growth	6.3	6.2	6.0	6.0	5.9	5.6	5.3	5.2	4.8	4.7	4.3	4.1	4.2	3.9	3.7
2026	37	build-out	growth	6.3	5.8	5.9	5.5	5.5	5.5	5.2	5.3	4.7	4.8	4.3	4.2	4.2	4.0	3.8
2026	38	build-out	growth	6.4	6.3	6.1	6.1	6.0	5.7	5.4	5.4	5.0	4.8	4.4	4.3	4.3	4.0	3.8
2027	39	build-out	growth	6.4	5.9	6.0	5.6	5.7	5.7	5.4	5.4	4.8	4.9	4.4	4.3	4.3	4.0	3.9
2027	40	build-out	build-out	6.6	6.4	6.2	6.2	6.2	5.8	5.5	5.5	5.1	4.9	4.5	4.4	4.4	4.1	3.9
2028	41	build-out	build-out	6.6	6.0	6.1	5.7	5.8	5.8	5.5	5.5	4.9	5.0	4.5	4.4	4.4	4.1	4.0
2028	42	build-out	build-out	6.7	6.5	6.4	6.3	6.3	6.0	5.6	5.6	5.2	5.0	4.6	4.5	4.5	4.1	4.0
2029	43	build-out	build-out	6.7	6.1	6.2	5.8	5.9	5.9	5.6	5.6	5.0	5.1	4.6	4.5	4.5	4.2	4.1
2029	44	build-out	build-out	6.8	6.6	6.5	6.4	6.4	6.1	5.7	5.6	5.2	5.1	4.7	4.5	4.6	4.2	4.1
2030	45	build-out	build-out	6.7	6.2	6.3	5.9	6.0	6.0	5.7	5.7	5.1	5.2	4.7	4.6	4.5	4.3	4.2
2030	46	build-out	build-out	6.8	6.7	6.5	6.5	6.4	6.1	5.8	5.7	5.3	5.2	4.8	4.6	4.6	4.3	4.2
2031	47	build-out	build-out	6.8	6.3	6.4	6.0	6.0	6.1	5.7	5.8	5.2	5.2	4.7	4.7	4.6	4.3	4.3
2031	48	build-out	build-out	6.9	6.7	6.6	6.6	6.5	6.2	5.9	5.8	5.4	5.2	4.8	4.7	4.7	4.3	4.3
2032	49	build-out	build-out	6.9	6.3	6.5	6.1	6.1	6.1	5.8	5.8	5.2	5.3	4.8	4.7	4.7	4.4	4.3
2032	50	build-out	build-out	6.9	6.8	6.7	6.6	6.6	6.3	6.0	5.8	5.5	5.3	4.9	4.8	4.8	4.4	4.3
2033	51	build-out	build-out	6.9	6.4	6.5	6.1	6.2	6.2	5.9	5.9	5.3	5.3	4.9	4.8	4.7	4.4	4.4
2033	52	build-out	build-out	7.0	6.9	6.8	6.7	6.6	6.4	6.0	5.9	5.5	5.3	5.0	4.8	4.8	4.5	4.4
2034	53	build-out	build-out	6.9	6.5	6.6	6.2	6.2	6.3	5.9	5.9	5.4	5.4	4.9	4.8	4.8	4.5	4.4
2034	54	build-out	build-out	7.0	6.9	6.8	6.7	6.7	6.4	6.1	5.9	5.6	5.4	5.0	4.9	4.9	4.5	4.5

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	UW13 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
2009	3	I & II	growth	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
2009	4	II	growth	0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
2010	5	none	growth	0.2	0.1	0.1	0.0	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
2010	6	III	growth	0.3	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	-0.1
2011	7	III	growth	0.4	0.2	0.2	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	-0.1
2011	8	III	growth	0.5	0.3	0.3	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.1	-0.1	0.1	-0.1
2012	9	III	growth	0.7	0.4	0.4	0.3	0.4	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	-0.1
2012	10	IV	growth	0.8	0.6	0.5	0.4	0.4	0.3	0.1	0.0	0.1	0.0	0.2	0.0	0.1	-0.1
2013	11	IV	growth	0.9	0.7	0.6	0.5	0.5	0.4	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.0
2013	12	IV	growth	1.1	0.8	0.8	0.6	0.6	0.5	0.3	0.1	0.2	0.1	0.3	0.1	0.2	0.0
2014	13	IV	growth	1.3	1.0	0.9	0.8	0.7	0.6	0.4	0.1	0.3	0.1	0.3	0.2	0.2	0.1
2014	14	build-out	growth	1.4	1.2	1.1	0.9	0.8	0.7	0.5	0.2	0.3	0.2	0.4	0.3	0.2	0.1
2015	15	build-out	growth	1.7	1.3	1.3	1.1	1.0	0.8	0.7	0.3	0.4	0.2	0.4	0.4	0.3	0.2
2015	16	build-out	growth	1.8	1.6	1.5	1.2	1.1	0.9	0.8	0.3	0.5	0.3	0.5	0.4	0.4	0.2
2016	17	build-out	growth	2.0	1.7	1.6	1.4	1.3	1.1	0.9	0.4	0.6	0.3	0.6	0.5	0.4	0.3
2016	18	build-out	growth	2.1	1.9	1.8	1.5	1.4	1.2	1.0	0.5	0.6	0.4	0.6	0.6	0.5	0.4
2017	19	build-out	growth	2.3	2.0	2.0	1.7	1.5	1.3	1.1	0.6	0.7	0.5	0.7	0.7	0.6	0.5
2017	20	build-out	growth	2.4	2.2	2.1	1.8	1.6	1.4	1.2	0.6	0.8	0.5	0.8	0.8	0.6	0.5
2018	21	build-out	growth	2.6	2.3	2.2	1.9	1.7	1.5	1.3	0.7	0.9	0.6	0.8	0.9	0.7	0.6
2018	22	build-out	growth	2.7	2.5	2.4	2.0	1.7	1.6	1.3	0.8	0.9	0.7	0.9	0.9	0.7	0.6
2019	23	build-out	growth	2.8	2.6	2.5	2.1	1.8	1.7	1.4	0.8	1.0	0.7	0.9	1.0	0.8	0.7
2019	24	build-out	growth	2.9	2.7	2.6	2.2	1.9	1.7	1.5	0.9	1.1	0.8	1.0	1.0	0.8	0.8
2020	25	build-out	growth	3.0	2.8	2.7	2.3	2.0	1.8	1.5	1.0	1.1	0.9	1.0	1.1	0.9	0.8
2020	26	build-out	growth	3.0	2.9	2.8	2.3	2.0	1.8	1.6	1.0	1.2	0.9	1.1	1.1	0.9	0.8
2021	27	build-out	growth	3.2	2.9	2.8	2.4	2.1	1.9	1.6	1.1	1.2	1.0	1.1	1.2	1.0	0.9
2021	28	build-out	growth	3.2	3.0	2.9	2.5	2.1	1.9	1.6	1.1	1.3	1.0	1.2	1.2	1.0	0.9
2022	29	build-out	growth	3.3	3.1	3.0	2.5	2.2	2.0	1.7	1.2	1.3	1.1	1.2	1.3	1.1	1.0
2022	30	build-out	growth	3.3	3.2	3.1	2.6	2.3	2.0	1.7	1.2	1.3	1.1	1.2	1.3	1.1	1.0
2023	31	build-out	growth	3.4	3.2	3.1	2.6	2.3	2.0	1.7	1.3	1.4	1.2	1.3	1.3	1.1	1.0
2023	32	build-out	growth	3.4	3.3	3.2	2.7	2.4	2.0	1.7	1.3	1.4	1.2	1.3	1.3	1.2	1.0
2024	33	build-out	growth	3.5	3.4	3.2	2.7	2.4	2.1	1.8	1.3	1.4	1.2	1.3	1.3	1.2	1.0
2024	34	build-out	growth	3.5	3.4	3.3	2.7	2.4	2.1	1.8	1.4	1.4	1.3	1.4	1.3	1.2	1.1
2025	35	build-out	growth	3.6	3.5	3.3	2.8	2.5	2.1	1.8	1.4	1.4	1.3	1.4	1.4	1.3	1.1
2025	36	build-out	growth	3.6	3.5	3.4	2.8	2.5	2.1	1.8	1.4	1.5	1.3	1.4	1.4	1.3	1.1
2026	37	build-out	growth	3.7	3.6	3.4	2.8	2.6	2.2	1.8	1.5	1.5	1.4	1.5	1.4	1.3	1.1
2026	38	build-out	growth	3.7	3.6	3.5	2.8	2.6	2.1	1.8	1.5	1.5	1.4	1.5	1.4	1.3	1.1
2027	39	build-out	growth	3.8	3.6	3.5	2.9	2.7	2.2	1.8	1.5	1.5	1.4	1.5	1.4	1.4	1.1
2027	40	build-out	build-out	3.8	3.7	3.5	2.9	2.7	2.1	1.8	1.5	1.5	1.5	1.5	1.4	1.4	1.1
2028	41	build-out	build-out	3.8	3.7	3.5	2.9	2.7	2.2	1.8	1.5	1.5	1.5	1.5	1.4	1.4	1.1

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	UW13 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)
2028	42	build-out	build-out	3.8	3.8	3.6	2.9	2.7	2.2	1.8	1.6	1.5	1.5	1.6	1.4	1.4	1.1
2029	43	build-out	build-out	3.9	3.8	3.6	3.0	2.8	2.2	1.9	1.6	1.6	1.5	1.6	1.4	1.5	1.2
2029	44	build-out	build-out	3.9	3.8	3.7	3.0	2.8	2.3	1.9	1.6	1.6	1.6	1.6	1.5	1.5	1.2
2030	45	build-out	build-out	4.0	3.9	3.7	3.0	2.9	2.3	1.9	1.6	1.6	1.6	1.6	1.5	1.5	1.2
2030	46	build-out	build-out	4.0	3.9	3.7	3.1	2.9	2.3	1.9	1.7	1.6	1.6	1.6	1.5	1.5	1.2
2031	47	build-out	build-out	4.0	3.9	3.8	3.1	2.9	2.4	2.0	1.7	1.7	1.6	1.7	1.6	1.5	1.3
2031	48	build-out	build-out	4.0	4.0	3.8	3.1	2.9	2.4	2.0	1.7	1.7	1.7	1.7	1.6	1.6	1.3
2032	49	build-out	build-out	4.1	4.0	3.8	3.2	2.9	2.4	2.0	1.7	1.7	1.7	1.7	1.6	1.6	1.3
2032	50	build-out	build-out	4.1	4.0	3.9	3.2	2.9	2.4	2.0	1.8	1.7	1.7	1.7	1.6	1.6	1.3
2033	51	build-out	build-out	4.2	4.1	3.9	3.2	3.0	2.5	2.1	1.8	1.8	1.7	1.7	1.7	1.6	1.4
2033	52	build-out	build-out	4.1	4.1	3.9	3.2	3.0	2.5	2.1	1.8	1.8	1.8	1.7	1.7	1.6	1.4
2034	53	build-out	build-out	4.2	4.1	3.9	3.3	3.0	2.5	2.1	1.8	1.8	1.8	1.7	1.7	1.6	1.4
2034	54	build-out	build-out	4.2	4.2	4.0	3.3	3.0	2.5	2.1	1.9	1.8	1.8	1.8	1.7	1.6	1.4

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	-0.1
2008	2	I & II	growth	0.0	0.0	0.0	-0.2
2009	3	I & II	growth	0.0	0.0	0.0	-0.3
2009	4	II	growth	0.0	0.0	0.0	-0.4
2010	5	none	growth	0.0	0.0	0.0	-0.5
2010	6	III	growth	-0.1	-0.1	-0.1	-0.5
2011	7	III	growth	-0.1	-0.1	-0.1	-0.6
2011	8	III	growth	-0.1	-0.1	-0.1	-0.7
2012	9	III	growth	0.0	-0.1	-0.1	-0.8
2012	10	IV	growth	0.0	-0.1	-0.1	-0.8
2013	11	IV	growth	0.0	0.0	0.0	-0.8
2013	12	IV	growth	0.0	0.0	0.0	-0.8
2014	13	IV	growth	0.0	0.0	0.0	-0.9
2014	14	build-out	growth	0.1	0.0	0.0	-0.9
2015	15	build-out	growth	0.1	0.0	0.0	-0.9
2015	16	build-out	growth	0.2	0.1	0.1	-0.9
2016	17	build-out	growth	0.2	0.1	0.1	-0.9
2016	18	build-out	growth	0.3	0.2	0.2	-0.8
2017	19	build-out	growth	0.3	0.2	0.2	-0.9
2017	20	build-out	growth	0.4	0.2	0.2	-0.9

Table 10. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2018	21	build-out	growth	0.4	0.3	0.3	-0.9
2018	22	build-out	growth	0.5	0.3	0.3	-0.9
2019	23	build-out	growth	0.5	0.4	0.4	-0.9
2019	24	build-out	growth	0.6	0.4	0.4	-0.9
2020	25	build-out	growth	0.6	0.5	0.5	-1.0
2020	26	build-out	growth	0.7	0.5	0.5	-1.0
2021	27	build-out	growth	0.7	0.5	0.5	-1.1
2021	28	build-out	growth	0.8	0.6	0.6	-1.1
2022	29	build-out	growth	0.8	0.6	0.6	-1.2
2022	30	build-out	growth	0.8	0.6	0.6	-1.2
2023	31	build-out	growth	0.9	0.7	0.6	-1.3
2023	32	build-out	growth	0.9	0.7	0.7	-1.4
2024	33	build-out	growth	0.9	0.7	0.7	-1.5
2024	34	build-out	growth	0.9	0.7	0.7	-1.5
2025	35	build-out	growth	1.0	0.8	0.7	-1.6
2025	36	build-out	growth	1.0	0.8	0.7	-1.7
2026	37	build-out	growth	1.0	0.8	0.8	-1.8
2026	38	build-out	growth	1.0	0.8	0.8	-1.8
2027	39	build-out	growth	1.0	0.8	0.8	-1.9
2027	40	build-out	build-out	1.0	0.8	0.8	-2.0
2028	41	build-out	build-out	1.1	0.8	0.8	-2.0
2028	42	build-out	build-out	1.1	0.8	0.8	-2.0
2029	43	build-out	build-out	1.1	0.9	0.8	-2.0
2029	44	build-out	build-out	1.1	0.9	0.9	-1.9
2030	45	build-out	build-out	1.1	0.9	0.9	-1.9
2030	46	build-out	build-out	1.2	0.9	0.9	-1.9
2031	47	build-out	build-out	1.2	0.9	0.9	-1.9
2031	48	build-out	build-out	1.2	1.0	0.9	-1.8
2032	49	build-out	build-out	1.2	1.0	1.0	-1.8
2032	50	build-out	build-out	1.3	1.0	1.0	-1.8
2033	51	build-out	build-out	1.3	1.0	1.0	-1.7
2033	52	build-out	build-out	1.3	1.1	1.0	-1.7
2034	53	build-out	build-out	1.3	1.1	1.0	-1.7
2034	54	build-out	build-out	1.3	1.1	1.1	-1.7

Table 11. Simulated Groundwater Level Drawdown in the Vicinities of Surveyed Local Wells from 2008 to 2034 under Scenario C

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW4 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW2 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G1 Local Drawdown (feet)	UW7 Local Drawdown (feet)
2008	1	I	growth	1.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
2008	2	I & II	growth	4.2	1.0	0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0
2009	3	I & II	growth	3.7	1.1	1.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.1	0.1	0.1	0.1
2009	4	II	growth	9.8	2.5	2.3	0.5	0.3	0.4	0.3	0.4	0.3	0.4	1.0	0.2	0.2	0.2	0.1
2010	5	none	growth	6.2	2.1	2.0	0.7	0.5	0.6	0.5	0.6	0.5	0.5	1.1	0.3	0.3	0.3	0.3
2010	6	III	growth	11.5	3.3	3.0	1.0	0.6	0.8	0.7	0.8	0.7	0.7	1.5	0.4	0.5	0.4	0.4
2011	7	III	growth	7.6	2.8	2.7	1.1	0.8	0.9	0.8	1.0	0.8	0.8	1.6	0.6	0.6	0.5	0.5
2011	8	III	growth	14.5	4.2	3.9	1.3	1.0	1.3	1.0	1.5	1.1	1.7	2.1	0.7	1.1	0.9	0.7
2012	9	III	growth	9.6	3.6	3.5	1.5	1.2	1.4	1.2	1.5	1.3	1.3	2.1	0.9	1.0	0.9	0.8
2012	10	IV	growth	17.8	5.4	5.0	1.9	1.5	2.1	1.5	2.4	1.7	2.6	2.7	1.1	1.7	1.3	1.1
2013	11	IV	growth	11.4	4.6	4.3	2.1	1.7	2.0	1.7	2.1	1.8	1.9	2.8	1.3	1.5	1.4	1.2
2013	12	IV	growth	20.1	6.4	5.9	2.9	3.7	3.9	2.7	4.0	3.5	3.6	3.4	2.2	2.5	2.2	1.9
2014	13	IV	growth	13.3	5.5	5.2	3.0	2.7	3.0	2.6	3.1	2.8	2.8	3.5	2.1	2.2	2.1	1.9
2014	14	build-out	growth	22.7	7.5	6.9	6.3	5.3	5.3	5.0	5.1	4.9	4.5	4.2	3.4	3.3	3.0	2.6
2015	15	build-out	growth	15.1	6.6	6.2	4.3	3.8	4.1	3.8	4.1	3.9	3.7	4.2	3.1	3.0	3.0	2.8
2015	16	build-out	growth	24.0	8.4	7.7	7.2	6.2	6.1	5.9	6.0	5.7	5.3	4.8	4.2	4.0	3.7	3.4
2016	17	build-out	growth	16.2	7.3	6.9	5.0	4.5	4.8	4.6	4.8	4.6	4.3	4.8	3.8	3.6	3.6	3.4
2016	18	build-out	growth	25.1	9.0	8.3	7.8	6.8	6.7	6.5	6.6	6.4	5.9	5.4	4.8	4.5	4.3	3.9
2017	19	build-out	growth	17.2	7.9	7.4	5.6	5.0	5.4	5.1	5.4	5.1	4.8	5.3	4.3	4.1	4.1	3.9
2017	20	build-out	growth	26.0	9.6	8.8	8.3	7.3	7.2	7.0	7.1	6.8	6.3	5.8	5.3	4.9	4.7	4.3
2018	21	build-out	growth	18.1	8.4	7.9	6.0	5.5	5.8	5.5	5.8	5.5	5.3	5.7	4.7	4.5	4.5	4.2
2018	22	build-out	growth	26.9	10.1	9.3	8.6	7.6	7.6	7.4	7.5	7.2	6.7	6.2	5.6	5.3	5.1	4.7
2019	23	build-out	growth	19.0	8.9	8.3	6.4	5.8	6.2	5.9	6.2	5.9	5.6	6.1	5.1	4.8	4.8	4.6
2019	24	build-out	growth	27.7	10.5	9.7	9.0	8.0	8.0	7.7	7.8	7.6	7.0	6.5	6.0	5.6	5.4	5.0
2020	25	build-out	growth	19.7	9.3	8.7	6.7	6.1	6.5	6.2	6.5	6.2	5.9	6.4	5.4	5.1	5.1	4.9
2020	26	build-out	growth	28.4	10.9	10.0	9.3	8.3	8.3	8.0	8.1	7.9	7.3	6.8	6.2	5.9	5.7	5.3
2021	27	build-out	growth	20.5	9.6	9.1	6.9	6.4	6.8	6.4	6.7	6.5	6.2	6.6	5.6	5.4	5.4	5.1
2021	28	build-out	growth	29.2	11.2	10.4	9.5	8.5	8.5	8.2	8.4	8.1	7.5	7.1	6.5	6.1	5.9	5.5
2022	29	build-out	growth	21.2	10.0	9.4	7.2	6.7	7.0	6.7	7.0	6.7	6.4	6.9	5.8	5.6	5.6	5.3
2022	30	build-out	growth	29.9	11.5	10.7	9.8	8.8	8.8	8.5	8.6	8.4	7.8	7.3	6.7	6.3	6.1	5.7
2023	31	build-out	growth	21.9	10.3	9.7	7.4	6.9	7.2	6.9	7.2	7.0	6.6	7.1	6.1	5.8	5.8	5.6
2023	32	build-out	growth	30.6	11.9	11.0	10.0	9.0	9.0	8.7	8.8	8.6	8.0	7.5	6.9	6.5	6.3	5.9
2024	33	build-out	growth	22.6	10.6	10.0	7.6	7.1	7.4	7.1	7.4	7.2	6.8	7.3	6.2	6.0	6.0	5.7
2024	34	build-out	growth	31.2	12.2	11.3	10.2	9.2	9.2	8.9	9.0	8.8	8.2	7.7	7.1	6.7	6.5	6.1
2025	35	build-out	growth	23.2	10.9	10.3	7.8	7.3	7.6	7.3	7.6	7.3	7.0	7.5	6.4	6.1	6.1	5.9
2025	36	build-out	growth	31.9	12.4	11.5	10.4	9.3	9.4	9.0	9.2	8.9	8.3	7.9	7.2	6.8	6.6	6.2
2026	37	build-out	growth	23.9	11.2	10.5	8.0	7.4	7.8	7.4	7.8	7.5	7.2	7.7	6.6	6.3	6.3	6.0
2026	38	build-out	growth	32.5	12.7	11.8	10.6	9.5	9.5	9.2	9.4	9.1	8.5	8.1	7.4	7.0	6.8	6.4
2027	39	build-out	growth	24.5	11.4	10.8	8.2	7.6	8.0	7.6	8.0	7.7	7.3	7.9	6.7	6.4	6.4	6.2
2027	40	build-out	build-out	33.2	13.0	12.0	10.7	9.7	9.7	9.4	9.5	9.3	8.6	8.3	7.5	7.1	6.9	6.5
2028	41	build-out	build-out	24.9	11.7	11.0	8.3	7.7	8.1	7.7	8.1	7.8	7.4	8.0	6.9	6.5	6.6	6.3

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	North Well Local Drawdown (feet)	25S/12E-8K1 Local Drawdown (feet)	25S/12E-8G1 Local Drawdown (feet)	UW1 Local Drawdown (feet)	UW4 Local Drawdown (feet)	UW6 Local Drawdown (feet)	UW2 Local Drawdown (feet)	25S/12E-18A1 Local Drawdown (feet)	UW5 Local Drawdown (feet)	25S/12E-18H1 Local Drawdown (feet)	25S/12E-8K2 Local Drawdown (feet)	UW3 Local Drawdown (feet)	UW8 Local Drawdown (feet)	25S/12E-18G1 Local Drawdown (feet)	UW7 Local Drawdown (feet)
2028	42	build-out	build-out	33.3	13.1	12.2	10.9	9.8	9.8	9.5	9.7	9.4	8.8	8.4	7.7	7.2	7.0	6.6
2029	43	build-out	build-out	25.1	11.8	11.1	8.4	7.9	8.2	7.9	8.2	7.9	7.6	8.1	7.0	6.7	6.7	6.4
2029	44	build-out	build-out	33.4	13.2	12.3	11.0	9.9	9.9	9.6	9.8	9.5	8.9	8.5	7.8	7.3	7.1	6.8
2030	45	build-out	build-out	42.4	15.6	14.5	9.0	8.1	8.6	8.2	8.7	8.2	7.9	9.4	7.1	6.8	6.8	6.6
2030	46	build-out	build-out	63.3	20.7	19.1	12.5	10.7	11.0	10.6	10.9	10.4	9.7	11.3	8.2	7.7	7.5	7.1
2031	47	build-out	build-out	45.8	18.4	17.5	10.8	9.3	9.9	9.5	10.0	9.4	8.9	11.2	8.0	7.4	7.5	7.1
2031	48	build-out	build-out	65.0	22.1	20.7	13.8	11.7	12.0	11.6	11.9	11.3	10.4	12.2	9.0	8.3	8.1	7.6
2032	49	build-out	build-out	46.9	19.3	18.5	11.7	10.0	10.6	10.3	10.6	10.1	9.4	11.7	8.6	7.8	7.9	7.6
2032	50	build-out	build-out	65.7	22.6	21.3	14.5	12.2	12.5	12.3	12.3	11.8	10.8	12.6	9.6	8.6	8.5	8.0
2033	51	build-out	build-out	30.1	15.9	15.6	11.7	10.3	10.7	10.6	10.7	10.3	9.5	10.8	9.0	8.0	8.2	7.9
2033	52	build-out	build-out	36.3	15.5	14.9	13.4	11.8	11.8	11.8	11.5	11.4	10.3	10.0	9.5	8.5	8.4	8.0
2034	53	build-out	build-out	27.0	13.3	12.8	10.4	9.5	9.7	9.6	9.6	9.5	8.7	9.2	8.5	7.7	7.8	7.6
2034	54	build-out	build-out	34.8	14.3	13.5	12.4	11.2	11.1	11.0	10.9	10.7	9.8	9.2	9.0	8.2	8.1	7.7

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	South Well Local Drawdown (feet)	UW10 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW11 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)	25S/12E-17G1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	3	I & II	growth	0.4	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.1
2009	4	II	growth	0.7	0.1	0.2	0.1	0.1	0.2	0.1	0.4	0.1	0.3	0.1	0.0	0.1	0.0	0.1
2010	5	none	growth	0.9	0.2	0.4	0.3	0.2	0.3	0.2	0.5	0.2	0.5	0.1	0.1	0.2	0.1	0.2
2010	6	III	growth	1.1	0.3	0.5	0.4	0.3	0.4	0.3	0.7	0.2	0.6	0.2	0.2	0.3	0.1	0.3
2011	7	III	growth	1.3	0.4	0.6	0.5	0.4	0.5	0.4	0.8	0.3	0.7	0.3	0.2	0.3	0.2	0.4
2011	8	III	growth	1.6	0.6	1.1	1.0	0.6	1.1	0.6	1.0	0.7	0.9	0.5	0.4	0.6	0.3	0.5
2012	9	III	growth	1.7	0.7	1.0	0.8	0.7	0.9	0.7	1.2	0.6	1.0	0.5	0.4	0.6	0.3	0.6
2012	10	IV	growth	2.0	0.9	1.7	1.5	0.9	1.7	1.0	1.4	1.0	1.2	0.8	0.6	0.9	0.5	0.8
2013	11	IV	growth	2.2	1.1	1.5	1.3	1.0	1.3	1.0	1.6	1.0	1.4	0.8	0.7	1.0	0.6	1.0
2013	12	IV	growth	2.5	1.6	2.3	2.0	1.5	2.2	1.5	1.9	1.4	1.6	1.1	0.9	1.3	0.7	1.2
2014	13	IV	growth	2.8	1.8	2.2	1.9	1.7	2.0	1.6	2.1	1.5	1.9	1.3	1.1	1.4	0.9	1.4
2014	14	build-out	growth	3.1	2.4	2.9	2.7	2.2	2.8	2.1	2.4	1.9	2.0	1.6	1.3	1.7	1.1	1.6
2015	15	build-out	growth	3.3	2.6	2.8	2.5	2.4	2.6	2.2	2.6	2.0	2.3	1.7	1.6	1.9	1.3	1.8
2015	16	build-out	growth	3.6	3.1	3.5	3.3	2.8	3.4	2.6	2.9	2.4	2.5	2.0	1.8	2.1	1.5	2.0
2016	17	build-out	growth	3.8	3.2	3.4	3.1	3.0	3.1	2.8	3.1	2.5	2.7	2.2	2.0	2.3	1.7	2.2
2016	18	build-out	growth	4.1	3.6	4.0	3.8	3.3	3.9	3.1	3.3	2.9	2.9	2.4	2.2	2.5	1.8	2.4
2017	19	build-out	growth	4.2	3.7	3.8	3.5	3.4	3.5	3.2	3.5	2.9	3.1	2.5	2.4	2.6	2.0	2.5
2017	20	build-out	growth	4.4	4.1	4.4	4.2	3.7	4.3	3.5	3.7	3.2	3.2	2.8	2.6	2.9	2.2	2.7

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-9D1 Local Drawdown (feet)	25S/12E-18F2 Local Drawdown (feet)	South Well Local Drawdown (feet)	UW10 Local Drawdown (feet)	25S/12E-18F1 Local Drawdown (feet)	UW11 Local Drawdown (feet)	UW9 Local Drawdown (feet)	25S/12E-17A1 Local Drawdown (feet)	UW14 Local Drawdown (feet)	25S/12E-8R2 Local Drawdown (feet)	UW15 Local Drawdown (feet)	25S/12E-18R1 Local Drawdown (feet)	UW12 Local Drawdown (feet)	25S/12E-19B1 Local Drawdown (feet)	25S/12E-17G1 Local Drawdown (feet)
2018	21	build-out	growth	4.6	4.1	4.2	3.9	3.8	3.9	3.6	3.8	3.2	3.4	2.9	2.7	2.9	2.3	2.8
2018	22	build-out	growth	4.8	4.4	4.8	4.5	4.1	4.6	3.9	4.0	3.6	3.5	3.1	2.9	3.1	2.5	2.9
2019	23	build-out	growth	4.9	4.4	4.5	4.2	4.1	4.2	3.9	4.1	3.5	3.7	3.1	3.0	3.2	2.6	3.1
2019	24	build-out	growth	5.0	4.7	5.0	4.8	4.4	4.9	4.2	4.2	3.8	3.8	3.3	3.1	3.4	2.7	3.1
2020	25	build-out	growth	5.1	4.7	4.7	4.5	4.4	4.5	4.1	4.3	3.7	3.9	3.4	3.2	3.4	2.9	3.3
2020	26	build-out	growth	5.3	5.0	5.3	5.0	4.6	5.1	4.4	4.4	4.0	4.0	3.6	3.3	3.6	2.9	3.3
2021	27	build-out	growth	5.4	4.9	5.0	4.7	4.7	4.7	4.4	4.6	4.0	4.1	3.6	3.4	3.6	3.1	3.4
2021	28	build-out	growth	5.5	5.2	5.5	5.3	4.9	5.3	4.6	4.6	4.2	4.2	3.8	3.5	3.7	3.1	3.5
2022	29	build-out	growth	5.6	5.2	5.2	4.9	4.9	4.9	4.6	4.7	4.2	4.3	3.8	3.6	3.8	3.2	3.6
2022	30	build-out	growth	5.7	5.4	5.7	5.5	5.1	5.5	4.8	4.8	4.4	4.3	3.9	3.7	3.9	3.3	3.6
2023	31	build-out	growth	5.8	5.4	5.3	5.1	5.1	5.1	4.8	4.9	4.3	4.4	3.9	3.8	3.9	3.4	3.7
2023	32	build-out	growth	5.9	5.6	5.9	5.6	5.3	5.7	5.0	5.0	4.6	4.5	4.1	3.9	4.0	3.5	3.7
2024	33	build-out	growth	6.0	5.5	5.5	5.3	5.2	5.2	4.9	5.1	4.5	4.6	4.1	3.9	4.0	3.6	3.8
2024	34	build-out	growth	6.1	5.8	6.0	5.8	5.4	5.8	5.2	5.1	4.7	4.6	4.2	4.0	4.1	3.6	3.8
2025	35	build-out	growth	6.1	5.7	5.7	5.4	5.4	5.4	5.1	5.2	4.6	4.7	4.2	4.1	4.1	3.7	3.9
2025	36	build-out	growth	6.3	6.0	6.2	5.9	5.6	6.0	5.3	5.2	4.8	4.7	4.3	4.1	4.2	3.7	3.9
2026	37	build-out	growth	6.3	5.9	5.8	5.5	5.5	5.5	5.2	5.3	4.7	4.8	4.3	4.2	4.2	3.8	4.0
2026	38	build-out	growth	6.4	6.1	6.3	6.0	5.7	6.1	5.4	5.4	5.0	4.8	4.4	4.3	4.3	3.8	4.0
2027	39	build-out	growth	6.4	6.0	5.9	5.7	5.7	5.6	5.4	5.4	4.8	4.9	4.4	4.3	4.3	3.9	4.0
2027	40	build-out	build-out	6.6	6.2	6.4	6.2	5.8	6.2	5.5	5.5	5.1	4.9	4.5	4.4	4.4	3.9	4.1
2028	41	build-out	build-out	6.6	6.1	6.0	5.8	5.8	5.7	5.5	5.5	4.9	5.0	4.5	4.4	4.4	4.0	4.1
2028	42	build-out	build-out	6.7	6.4	6.5	6.3	6.0	6.3	5.6	5.6	5.2	5.0	4.6	4.5	4.5	4.0	4.1
2029	43	build-out	build-out	6.7	6.2	6.1	5.9	5.9	5.8	5.6	5.6	5.0	5.1	4.6	4.5	4.5	4.1	4.2
2029	44	build-out	build-out	6.8	6.5	6.6	6.4	6.1	6.4	5.7	5.6	5.2	5.1	4.7	4.5	4.6	4.1	4.2
2030	45	build-out	build-out	7.4	6.4	6.2	6.0	6.0	5.9	5.7	5.8	5.0	5.2	4.6	4.6	4.2	4.2	3.7
2030	46	build-out	build-out	8.7	6.8	6.8	6.5	6.3	6.5	5.9	6.0	5.2	5.4	4.6	4.6	3.8	4.2	3.0
2031	47	build-out	build-out	9.3	6.9	6.5	6.2	6.4	6.1	5.9	6.2	5.0	5.5	4.4	4.6	3.7	4.2	3.0
2031	48	build-out	build-out	9.9	7.3	7.1	6.8	6.7	6.7	6.2	6.3	5.2	5.6	4.5	4.6	3.6	4.2	2.7
2032	49	build-out	build-out	10.1	7.4	6.8	6.5	6.8	6.3	6.2	6.4	5.1	5.7	4.4	4.6	3.6	4.2	2.9
2032	50	build-out	build-out	10.4	7.7	7.3	7.0	7.1	6.9	6.4	6.5	5.3	5.7	4.5	4.7	3.6	4.2	2.7
2033	51	build-out	build-out	9.8	7.7	6.9	6.7	7.1	6.5	6.4	6.4	5.2	5.7	4.5	4.7	4.0	4.3	3.5
2033	52	build-out	build-out	8.8	7.8	7.3	7.1	7.1	7.0	6.5	6.2	5.5	5.5	4.8	4.8	4.5	4.3	4.0
2034	53	build-out	build-out	8.1	7.5	6.8	6.6	6.9	6.4	6.3	6.1	5.4	5.4	4.9	4.9	4.6	4.4	4.2
2034	54	build-out	build-out	7.7	7.5	7.1	7.0	6.9	6.9	6.4	6.0	5.6	5.4	5.0	4.9	4.7	4.5	4.3

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	UW13 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	2	I & II	growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0
2009	3	I & II	growth	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	-0.1
2009	4	II	growth	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	-0.1
2010	5	none	growth	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	-0.1
2010	6	III	growth	0.3	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
2011	7	III	growth	0.4	0.2	0.2	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
2011	8	III	growth	0.5	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
2012	9	III	growth	0.7	0.4	0.4	0.4	0.3	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.0	-0.1
2012	10	IV	growth	0.8	0.6	0.5	0.4	0.4	0.2	0.3	0.1	0.1	0.0	0.0	0.1	0.0	-0.1
2013	11	IV	growth	0.9	0.7	0.6	0.5	0.5	0.2	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.0
2013	12	IV	growth	1.1	0.8	0.8	0.6	0.6	0.3	0.5	0.2	0.3	0.1	0.1	0.2	0.1	0.0
2014	13	IV	growth	1.3	1.0	0.9	0.7	0.8	0.3	0.6	0.2	0.4	0.1	0.1	0.3	0.2	0.1
2014	14	build-out	growth	1.4	1.2	1.1	0.8	0.9	0.4	0.7	0.2	0.5	0.2	0.2	0.3	0.3	0.1
2015	15	build-out	growth	1.7	1.3	1.3	1.0	1.1	0.4	0.8	0.3	0.7	0.2	0.3	0.4	0.4	0.2
2015	16	build-out	growth	1.8	1.6	1.5	1.1	1.2	0.5	0.9	0.4	0.8	0.3	0.3	0.5	0.4	0.2
2016	17	build-out	growth	2.0	1.7	1.6	1.3	1.4	0.6	1.1	0.4	0.9	0.3	0.4	0.6	0.5	0.3
2016	18	build-out	growth	2.1	1.9	1.8	1.4	1.5	0.6	1.2	0.5	1.0	0.4	0.5	0.6	0.6	0.4
2017	19	build-out	growth	2.3	2.0	2.0	1.5	1.7	0.7	1.3	0.6	1.1	0.5	0.6	0.7	0.7	0.5
2017	20	build-out	growth	2.4	2.2	2.1	1.6	1.8	0.8	1.4	0.6	1.2	0.5	0.6	0.8	0.8	0.5
2018	21	build-out	growth	2.6	2.3	2.2	1.7	1.9	0.8	1.5	0.7	1.3	0.6	0.7	0.9	0.9	0.6
2018	22	build-out	growth	2.7	2.5	2.4	1.7	2.0	0.9	1.6	0.7	1.3	0.7	0.8	0.9	0.9	0.6
2019	23	build-out	growth	2.8	2.6	2.5	1.8	2.1	0.9	1.7	0.8	1.4	0.7	0.8	1.0	1.0	0.7
2019	24	build-out	growth	2.9	2.7	2.6	1.9	2.2	1.0	1.7	0.8	1.5	0.8	0.9	1.1	1.0	0.8
2020	25	build-out	growth	3.0	2.8	2.7	2.0	2.3	1.0	1.8	0.9	1.5	0.9	1.0	1.1	1.1	0.8
2020	26	build-out	growth	3.0	2.9	2.8	2.0	2.3	1.1	1.8	0.9	1.6	0.9	1.0	1.2	1.1	0.8
2021	27	build-out	growth	3.2	2.9	2.8	2.1	2.4	1.1	1.9	1.0	1.6	1.0	1.1	1.2	1.2	0.9
2021	28	build-out	growth	3.2	3.0	2.9	2.1	2.5	1.2	1.9	1.0	1.6	1.0	1.1	1.3	1.2	0.9
2022	29	build-out	growth	3.3	3.1	3.0	2.2	2.5	1.2	2.0	1.1	1.7	1.1	1.2	1.3	1.3	1.0
2022	30	build-out	growth	3.3	3.2	3.1	2.3	2.6	1.2	2.0	1.1	1.7	1.1	1.2	1.3	1.3	1.0
2023	31	build-out	growth	3.4	3.2	3.1	2.3	2.6	1.3	2.0	1.1	1.7	1.2	1.3	1.4	1.3	1.0
2023	32	build-out	growth	3.4	3.3	3.2	2.4	2.7	1.3	2.0	1.2	1.7	1.2	1.3	1.4	1.3	1.0
2024	33	build-out	growth	3.5	3.4	3.2	2.4	2.7	1.3	2.1	1.2	1.8	1.2	1.3	1.4	1.3	1.0
2024	34	build-out	growth	3.5	3.4	3.3	2.4	2.7	1.4	2.1	1.2	1.8	1.3	1.4	1.4	1.3	1.1
2025	35	build-out	growth	3.6	3.5	3.3	2.5	2.8	1.4	2.1	1.3	1.8	1.3	1.4	1.4	1.4	1.1
2025	36	build-out	growth	3.6	3.5	3.4	2.5	2.8	1.4	2.1	1.3	1.8	1.3	1.4	1.5	1.4	1.1
2026	37	build-out	growth	3.7	3.6	3.4	2.6	2.8	1.5	2.2	1.3	1.8	1.4	1.5	1.5	1.4	1.1
2026	38	build-out	growth	3.7	3.6	3.5	2.6	2.8	1.5	2.1	1.3	1.8	1.4	1.5	1.5	1.4	1.1
2027	39	build-out	growth	3.8	3.6	3.5	2.7	2.9	1.5	2.2	1.4	1.8	1.4	1.5	1.5	1.4	1.1
2027	40	build-out	build-out	3.8	3.7	3.5	2.7	2.9	1.5	2.1	1.4	1.8	1.5	1.5	1.5	1.4	1.1
2028	41	build-out	build-out	3.8	3.7	3.5	2.7	2.9	1.5	2.2	1.4	1.8	1.5	1.5	1.5	1.4	1.1

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16D1 Local Drawdown (feet)	UW16 Local Drawdown (feet)	UW17 Local Drawdown (feet)	25S/12E-6C1 Local Drawdown (feet)	UW13 Local Drawdown (feet)	Camp Roberts Well Local Drawdown (feet)	25S/12E-16E1 Local Drawdown (feet)	24S/11E-35J1 Local Drawdown (feet)	25S/12E-17J1 Local Drawdown (feet)	25S/12E-20Q2 Local Drawdown (feet)	25S/12E-20K3 Local Drawdown (feet)	25S/12E-16K6 Local Drawdown (feet)	25S/12E-17R1 Local Drawdown (feet)	25S/12E-20A2 Local Drawdown (feet)
2028	42	build-out	build-out	3.8	3.8	3.6	2.7	2.9	1.6	2.2	1.4	1.8	1.5	1.6	1.5	1.4	1.1
2029	43	build-out	build-out	3.9	3.8	3.6	2.8	3.0	1.6	2.2	1.5	1.9	1.5	1.6	1.6	1.4	1.2
2029	44	build-out	build-out	3.9	3.8	3.7	2.8	3.0	1.6	2.3	1.5	1.9	1.6	1.6	1.6	1.5	1.2
2030	45	build-out	build-out	3.6	3.7	3.4	2.9	2.1	1.6	0.7	1.5	-0.3	1.6	1.5	1.0	-0.2	0.2
2030	46	build-out	build-out	3.1	3.3	3.0	3.0	1.0	1.7	-1.0	1.5	-2.4	1.4	1.0	0.0	-2.0	-1.0
2031	47	build-out	build-out	3.1	3.1	2.7	3.3	0.9	1.8	-0.6	1.6	-1.8	1.2	0.7	-0.3	-1.8	-1.2
2031	48	build-out	build-out	2.9	3.0	2.6	3.4	0.4	1.8	-1.6	1.6	-3.1	1.1	0.4	-0.8	-2.9	-1.9
2032	49	build-out	build-out	3.0	2.9	2.5	3.7	0.7	1.9	-1.0	1.7	-2.2	0.9	0.2	-0.8	-2.3	-1.8
2032	50	build-out	build-out	2.8	2.9	2.5	3.8	0.2	2.0	-1.8	1.8	-3.4	0.8	0.0	-1.2	-3.2	-2.3
2033	51	build-out	build-out	3.3	3.1	2.7	3.9	1.5	2.1	0.5	1.8	-0.1	0.7	0.1	-0.4	-0.9	-1.1
2033	52	build-out	build-out	3.7	3.5	3.2	3.9	2.3	2.2	1.4	1.9	0.9	0.8	0.5	0.3	0.2	-0.3
2034	53	build-out	build-out	3.9	3.7	3.5	3.8	2.7	2.2	1.8	1.9	1.4	0.9	0.8	0.7	0.7	0.2
2034	54	build-out	build-out	3.9	3.9	3.7	3.6	2.9	2.1	2.0	1.9	1.6	1.1	1.0	1.0	1.0	0.5

Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2008	1	I	growth	0.0	0.0	0.0	-0.1
2008	2	I & II	growth	0.0	0.0	0.0	-0.2
2009	3	I & II	growth	0.0	0.0	0.0	-0.3
2009	4	II	growth	0.0	0.0	0.0	-0.4
2010	5	none	growth	0.0	0.0	0.0	-0.5
2010	6	III	growth	-0.1	-0.1	-0.1	-0.5
2011	7	III	growth	-0.1	-0.1	-0.1	-0.6
2011	8	III	growth	-0.1	-0.1	-0.1	-0.7
2012	9	III	growth	0.0	-0.1	-0.1	-0.8
2012	10	IV	growth	0.0	-0.1	-0.1	-0.8
2013	11	IV	growth	0.0	0.0	0.0	-0.8
2013	12	IV	growth	0.0	0.0	0.0	-0.8
2014	13	IV	growth	0.0	0.0	0.0	-0.9
2014	14	build-out	growth	0.1	0.0	0.0	-0.9
2015	15	build-out	growth	0.1	0.0	0.0	-0.9
2015	16	build-out	growth	0.2	0.1	0.1	-0.9
2016	17	build-out	growth	0.2	0.1	0.1	-0.9
2016	18	build-out	growth	0.3	0.2	0.2	-0.9
2017	19	build-out	growth	0.3	0.2	0.2	-0.9

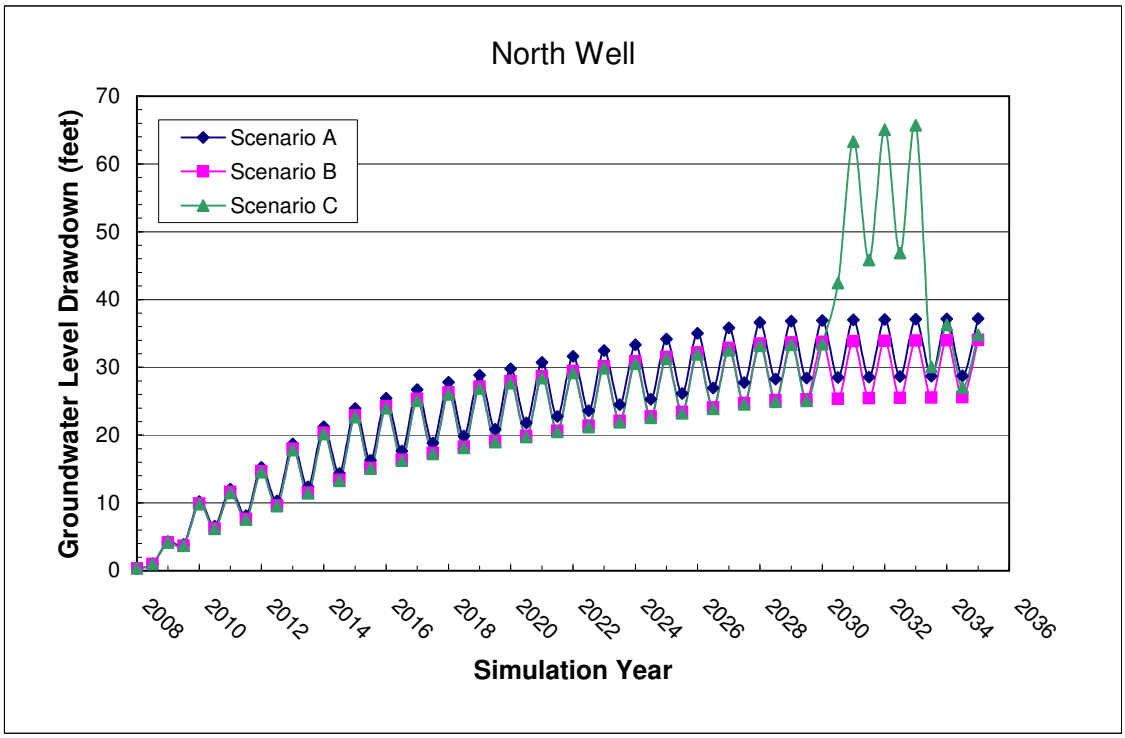
Table 11. Continued

Simulation Year	Model 6-month Stress Period	San Miguel Ranch Development Phase	San Miguel CSD Development Status	25S/12E-16P1 Local Drawdown (feet)	25S/12E-21F1 Local Drawdown (feet)	25S/12E-21G1 Local Drawdown (feet)	25S/12E-16N1 Local Drawdown (feet)
2017	20	build-out	growth	0.4	0.2	0.2	-0.9
2018	21	build-out	growth	0.4	0.3	0.3	-0.9
2018	22	build-out	growth	0.5	0.3	0.3	-0.9
2019	23	build-out	growth	0.5	0.4	0.4	-0.9
2019	24	build-out	growth	0.6	0.4	0.4	-1.0
2020	25	build-out	growth	0.6	0.5	0.5	-1.0
2020	26	build-out	growth	0.7	0.5	0.5	-1.0
2021	27	build-out	growth	0.7	0.5	0.5	-1.1
2021	28	build-out	growth	0.8	0.6	0.6	-1.1
2022	29	build-out	growth	0.8	0.6	0.6	-1.2
2022	30	build-out	growth	0.8	0.6	0.6	-1.2
2023	31	build-out	growth	0.9	0.7	0.6	-1.3
2023	32	build-out	growth	0.9	0.7	0.7	-1.4
2024	33	build-out	growth	0.9	0.7	0.7	-1.5
2024	34	build-out	growth	0.9	0.7	0.7	-1.5
2025	35	build-out	growth	1.0	0.8	0.7	-1.6
2025	36	build-out	growth	1.0	0.8	0.7	-1.7
2026	37	build-out	growth	1.0	0.8	0.8	-1.8
2026	38	build-out	growth	1.0	0.8	0.8	-1.8
2027	39	build-out	growth	1.0	0.8	0.8	-1.9
2027	40	build-out	build-out	1.0	0.8	0.8	-2.0
2028	41	build-out	build-out	1.1	0.8	0.8	-2.0
2028	42	build-out	build-out	1.1	0.8	0.8	-2.0
2029	43	build-out	build-out	1.1	0.9	0.8	-2.0
2029	44	build-out	build-out	1.1	0.9	0.9	-1.9
2030	45	build-out	build-out	0.9	0.7	0.6	-9.9
2030	46	build-out	build-out	0.3	0.2	0.1	-15.8
2031	47	build-out	build-out	-0.1	-0.2	-0.3	-11.7
2031	48	build-out	build-out	-0.4	-0.5	-0.6	-16.7
2032	49	build-out	build-out	-0.6	-0.7	-0.9	-12.3
2032	50	build-out	build-out	-0.8	-0.9	-1.1	-17.1
2033	51	build-out	build-out	-0.7	-0.9	-1.0	-4.5
2033	52	build-out	build-out	-0.2	-0.5	-0.5	-3.3
2034	53	build-out	build-out	0.1	-0.2	-0.2	-2.8
2034	54	build-out	build-out	0.4	0.1	0.0	-2.5

Table 12. Observed Water Quality Constituents in the San Miguel Ranch North Well

Tested Constituent	Concentration	Maximum Contaminant Level (MCL)	Units	Sampling Date
Total Alkalinity	220	none	mg/L	9/24/2004
Chloride	53	500	mg/L	9/24/2004
Electrical Conductance	720	1600	micromhos/cm	9/24/2004
Langlier Index	0.1	none	pH units	9/24/2004
Nitrate as N	4	10	mg/L	9/24/2004
Nitrate as NO3	18	45	mg/L	9/24/2004
pH	7.6	none	units	9/24/2004
Sulfate	54	500	mg/L	9/24/2004
Total Dissolved Solids	420	1000	mg/L	9/24/2004
Turbidity	0.1	5	NTU	9/24/2004
Calcium	37	none	mg/L	9/24/2004
Hardness	190	none	mg/L as CaCO3	9/24/2004
Potassium	1.9	none	mg/L	9/24/2004
Magnesium	23	none	mg/L	9/24/2004
Sodium	92	none	mg/L	9/24/2004
Arsenic	3.7	10	micrograms per liter	9/24/2004
Selenium	7.2	50	micrograms per liter	9/24/2004

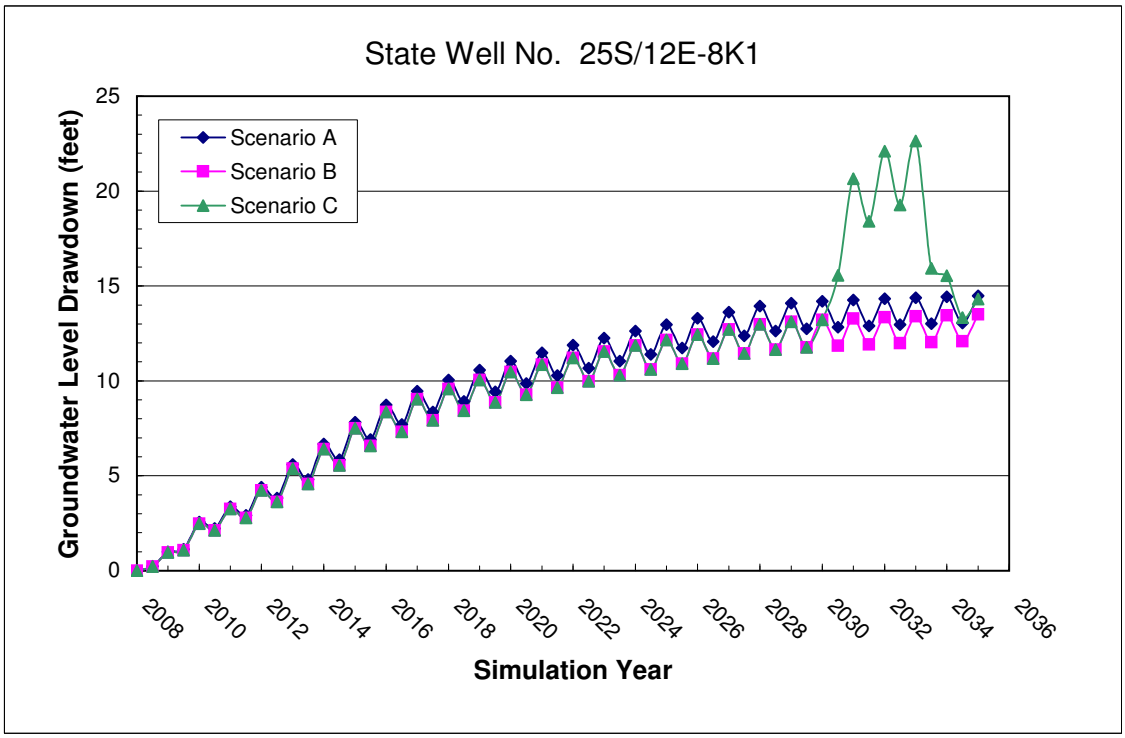
FIGURES



SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE NORTH WELL AREA FROM 2008 TO 2034 FOR SCENARIOS A, B, AND C

San MIguel Ranch

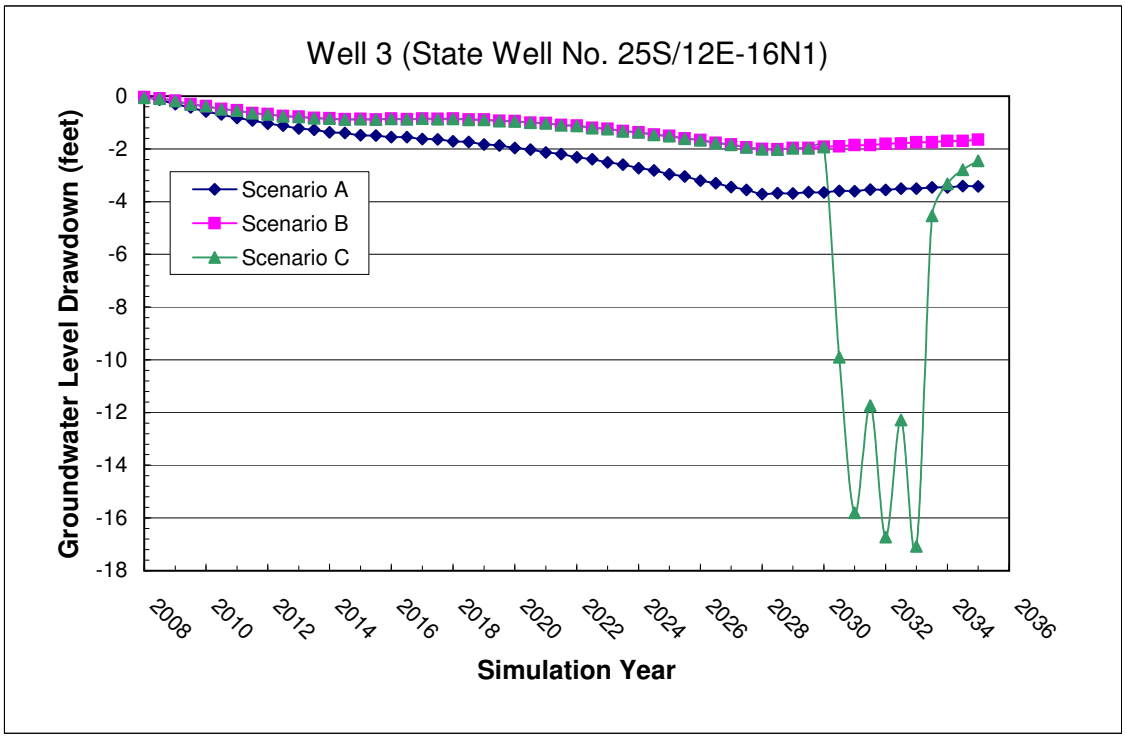
FIGURE 1



SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE AREA OF STATE WELL NUMBER 25S/12E-8K1 FROM 2008 TO 2034 FOR SCENARIOS A, B, AND C

San MIguel Ranch

FIGURE 2

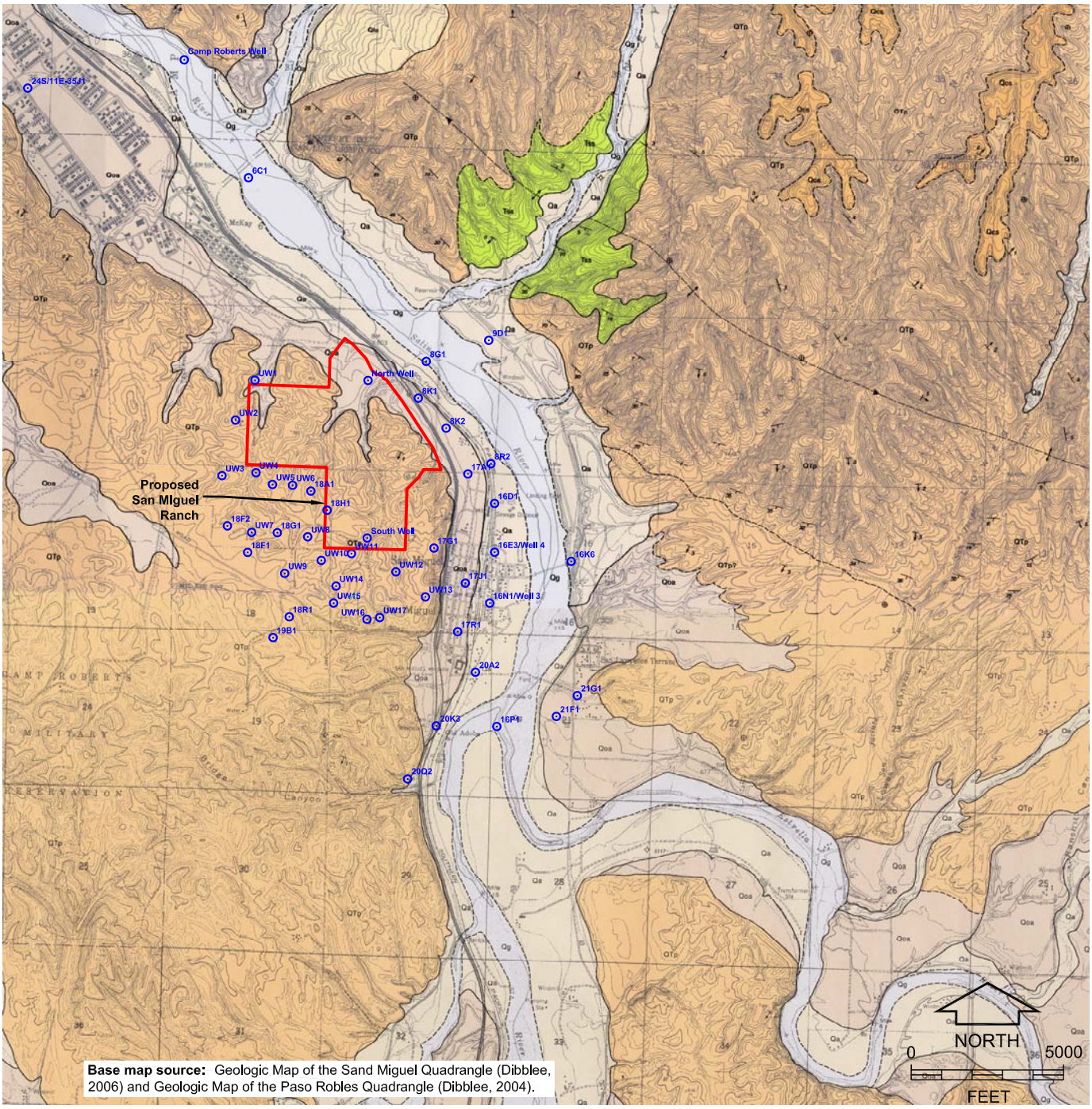


SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE AREA OF WELL 3 (STATE WELL NUMBER 25S/12E-16N1) FROM 2008 TO 2034 FOR SCENARIOS A, B, AND C

San MIguel Ranch

FIGURE 3

PLATES



Base map source: Geologic Map of the Sand Miguel Quadrangle (Dibblee, 2006) and Geologic Map of the Paso Robles Quadrangle (Dibblee, 2004).

LEGEND

Qg	Alluvial gravel and sand of stream channels
Qa	Alluvial clay and sand of valley areas
Qls	Landslide debris
Qoa	Terraces of dissected alluvial gravel and sand
Qcs	Paso Robles Formation - clay
QTp	Paso Robles Formation - pebble, gravel, sand and gravel pebbles
Tss	Sandstone of San Ardo

Formation contact

Member contact

Contact between surficial sediments

Anticline, arrow on axial trace of fold indicates direction of plunge

Strike and dip of sedimentary rocks:

5 inclined

2 inclined (approximate)

horizontal

Oil well

26K2 Well

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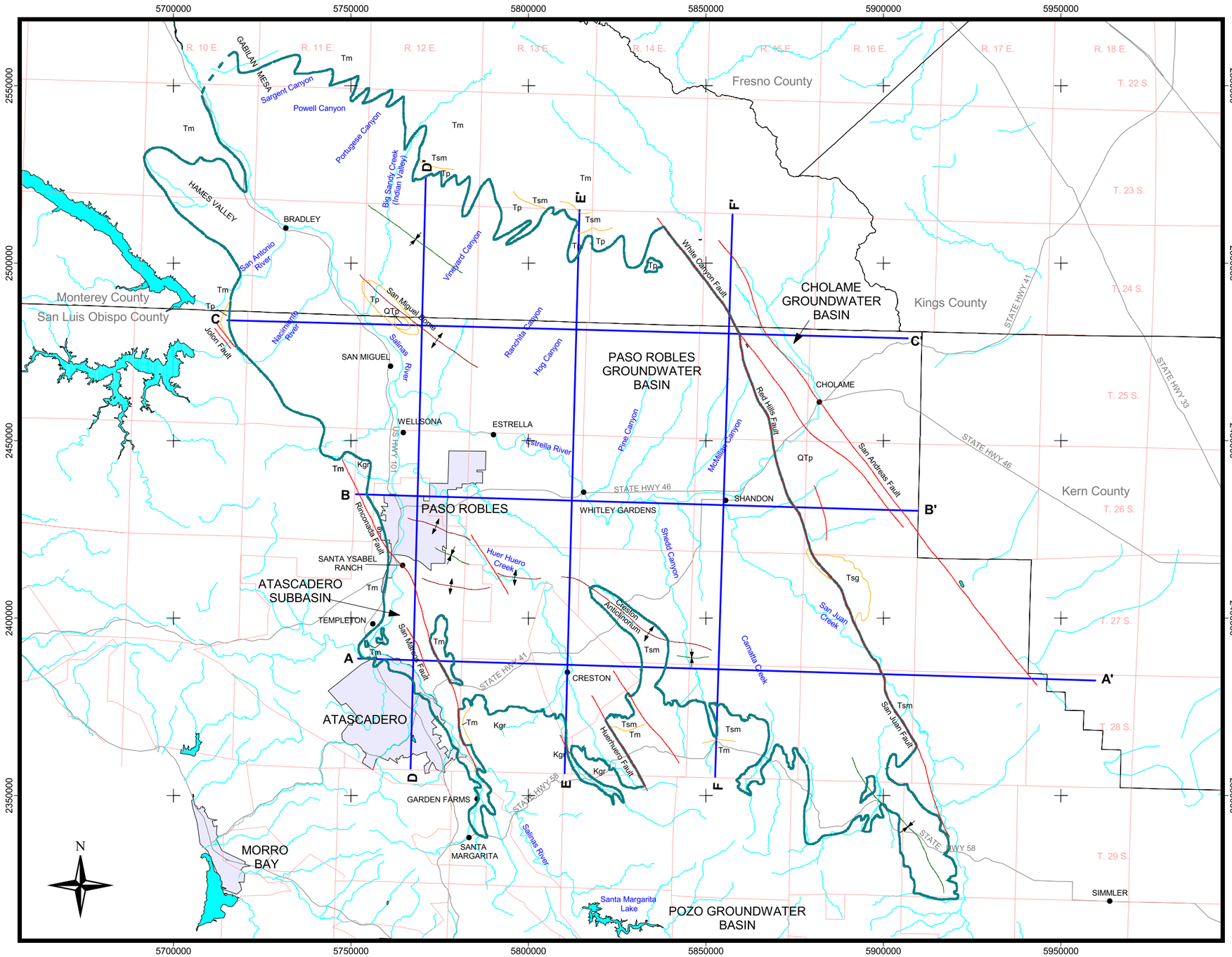
REGIONAL GEOLOGIC MAP
San Miguel Ranch

PLATE 1



Legend

- City
- Cross Section Line
- Basin Outline
- Fault
- Anticline
- Syncline
- Streams
- Highways
- County Line
- Township and Range Grid

Geologic Units

Paso Robles Groundwater Basin Sediments	Qa	Alluvium
	Qoa	Older Alluvium
	Qls	Landslide
	QTp	Paso Robles Formation
Other Geologic Units	Tp	Pancho Rico Formation
	Tsm	Santa Margarita Sandstone
	Tm	Monterey Shale
	Tv	Vaqueros Formation
	Ts	Simmler Formation
	Tsg	unnamed (maroon) conglomerate
	Kgr	granite rocks

Notes:
1. Geologic units shown on base map around basin boundary are for reference only. For a geologic map of the basin see Figure 5.
2. Township and Range grid reference: Federal Township and Range System, Mt. Diablo Baseline and Meridian

30000 0 30000 Feet

Locations of Geologic Cross Sections in the Paso Robles Groundwater Basin

Paso Robles Groundwater Basin Study

Fugro West, Inc. and Cleath and Associates

PLATE 2

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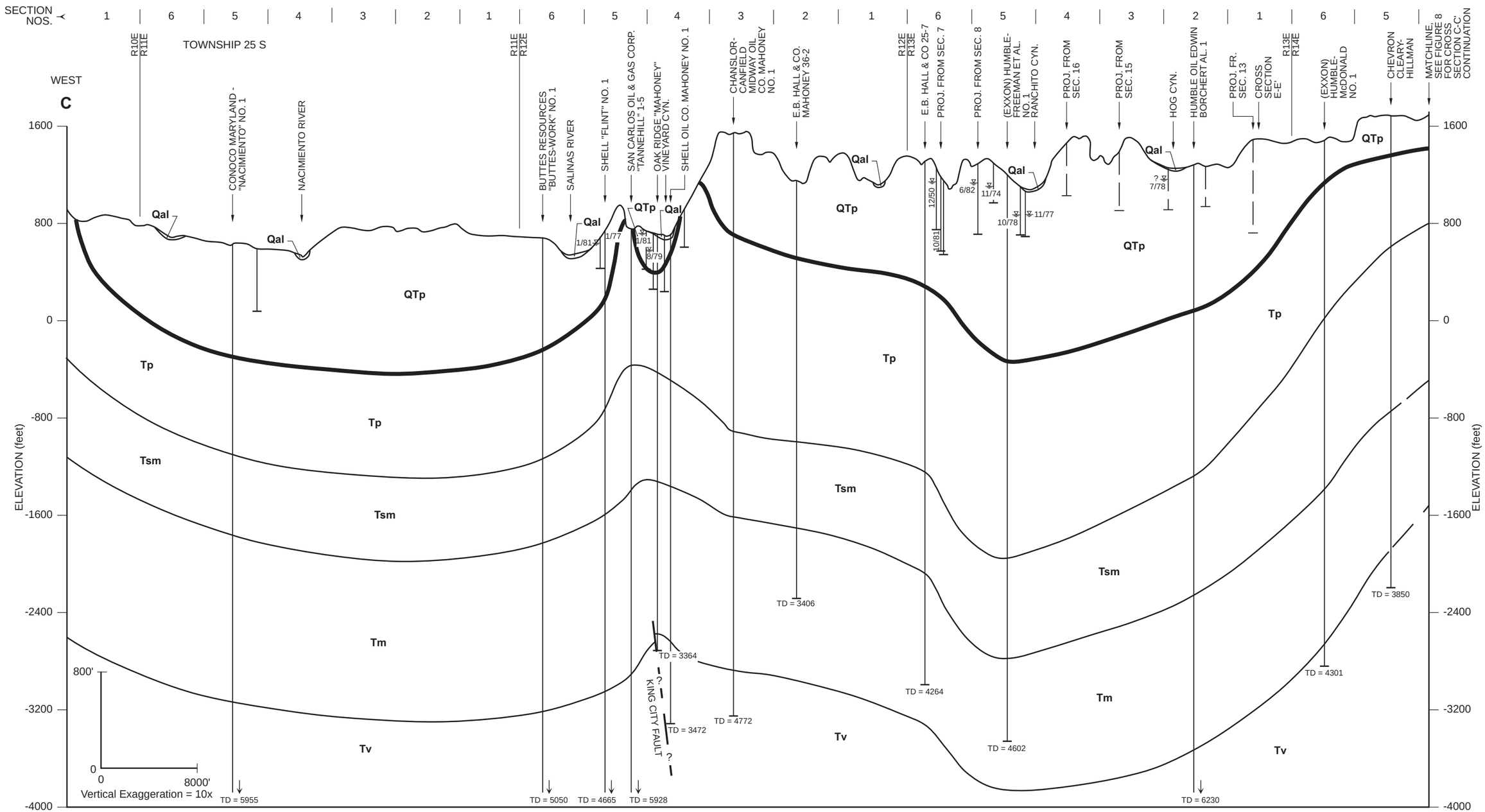

LEGEND

Qal	Alluvium	Tsm	Santa Margarita Formation	Kgr	Quartz Diorite or Granodiorite		Fault, arrows show relative movement
QTp	Paso Robles Formation	Tm	Monterey Formation	Ka	Atascadero Formation		Water level with date noted
Tp	Pancho Rico Formation	Tv	Vaqueros Formation				Base of permeable sediments

GEOLOGIC CROSS-SECTION C-C'
San Miguel Ranch

PLATE 3

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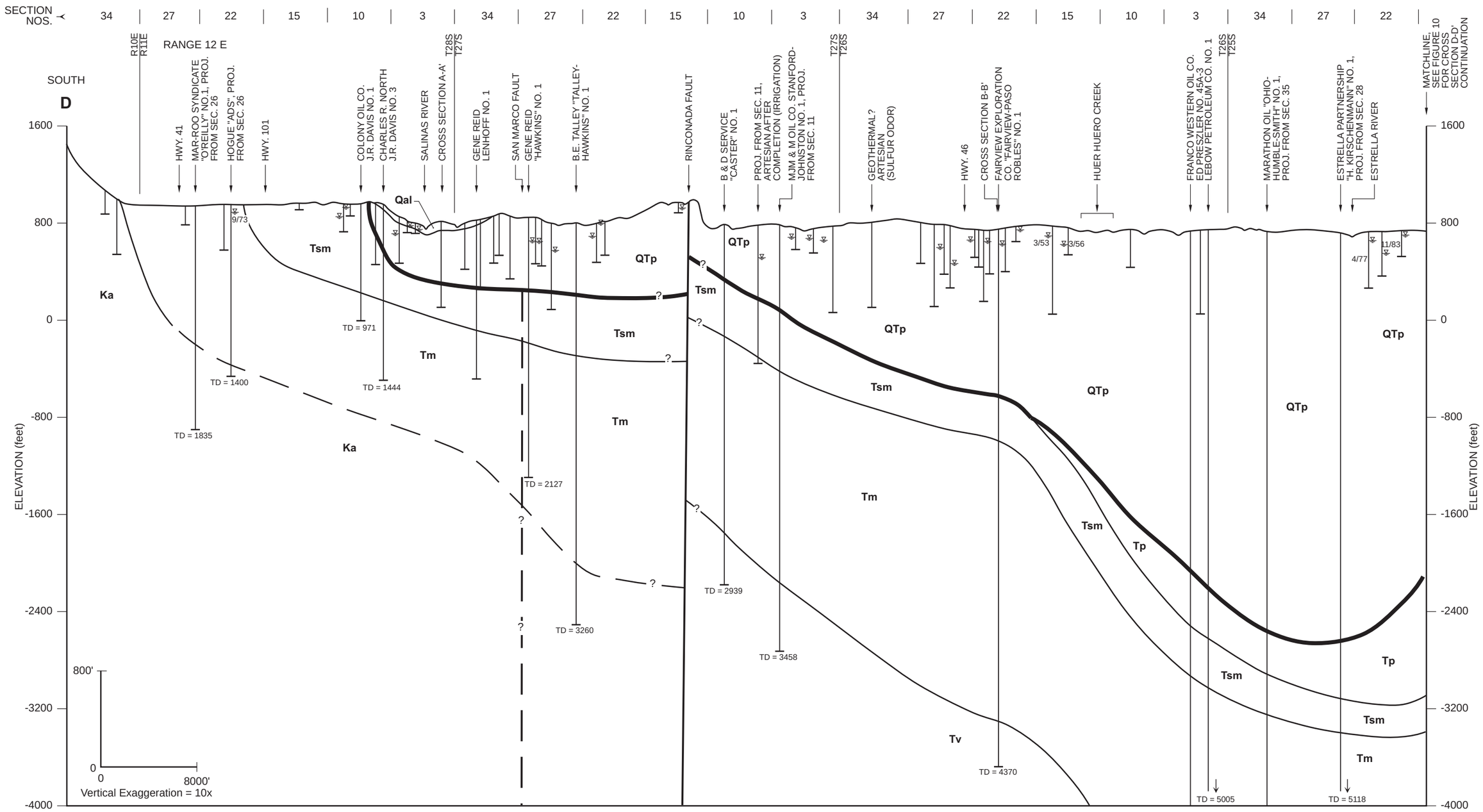

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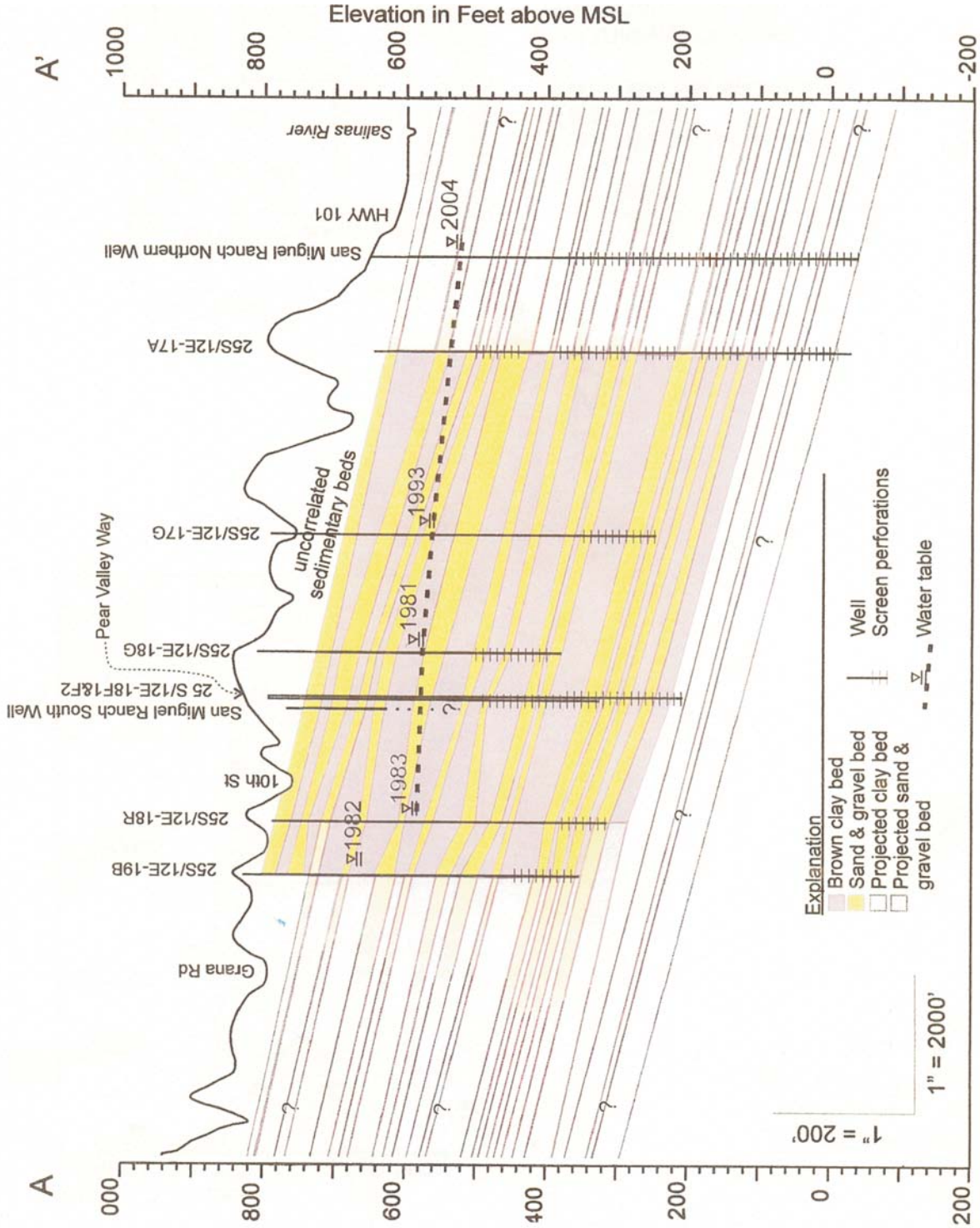
LEGEND

Qal	Alluvium	Tsm	Santa Margarita Formation	Kgr	Quartz Diorite or Granodiorite		Fault, arrows show relative movement
QTp	Paso Robles Formation	Tm	Monterey Formation	Ka	Atascadero Formation		Water level with date noted
Tp	Pancho Rico Formation	Tv	Vaqueros Formation				Base of permeable sediments

GEOLOGIC CROSS-SECTION D-D'
San Miguel Ranch



Map source: Cleath & Associates, 2005.

GEOLOGIC CROSS SECTION
San Miguel Ranch

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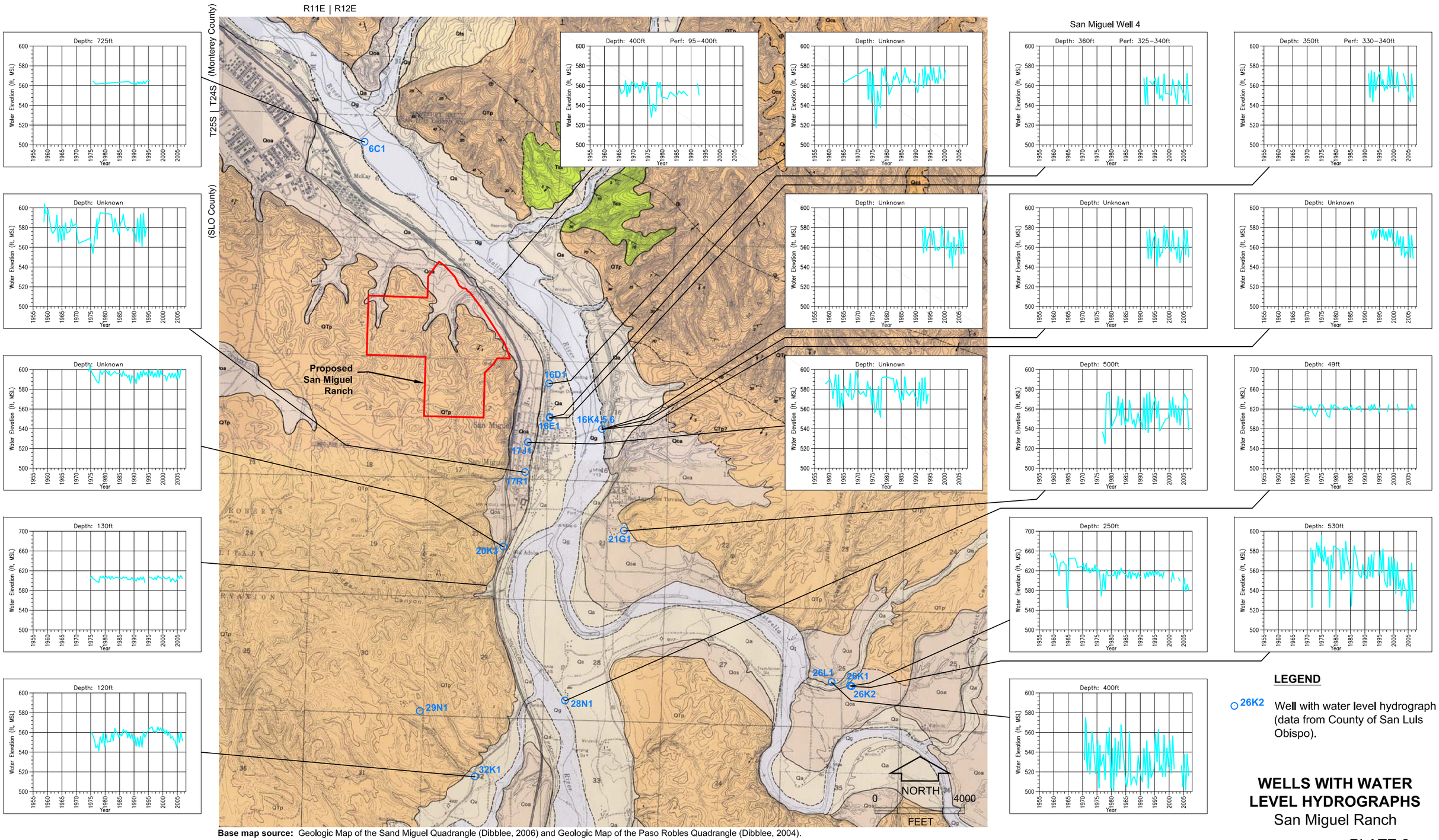

Base map source: Geologic Map of the Sand Miguel Quadrangle (Dibblee, 2006) and Geologic Map of the Paso Robles Quadrangle (Dibblee, 2004).

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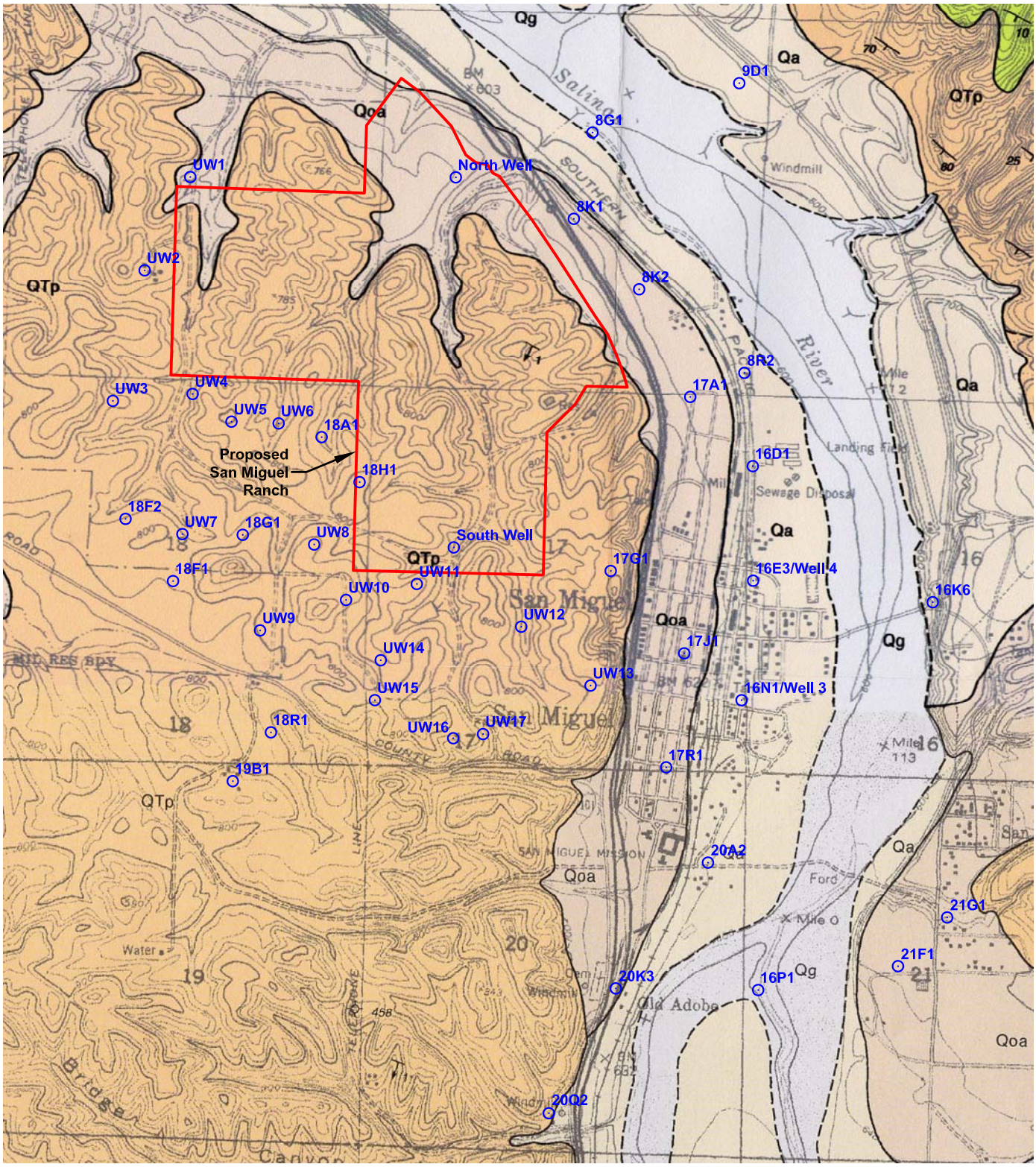
WELLS WITH WATER LEVEL HYDROGRAPHS
San Miguel Ranch

PLATE 6



Base map source: Geologic Map of the Sand Miguel Quadrangle (Dibblee, 2006) and Geologic Map of the Paso Robles Quadrangle (Dibblee, 2004).

LEGEND

- Approximate location of water well:
  - 26K2: Well with assigned State Well No.
  - UW6: Private Domestic or Agricultural Well

NORTH

0 2000

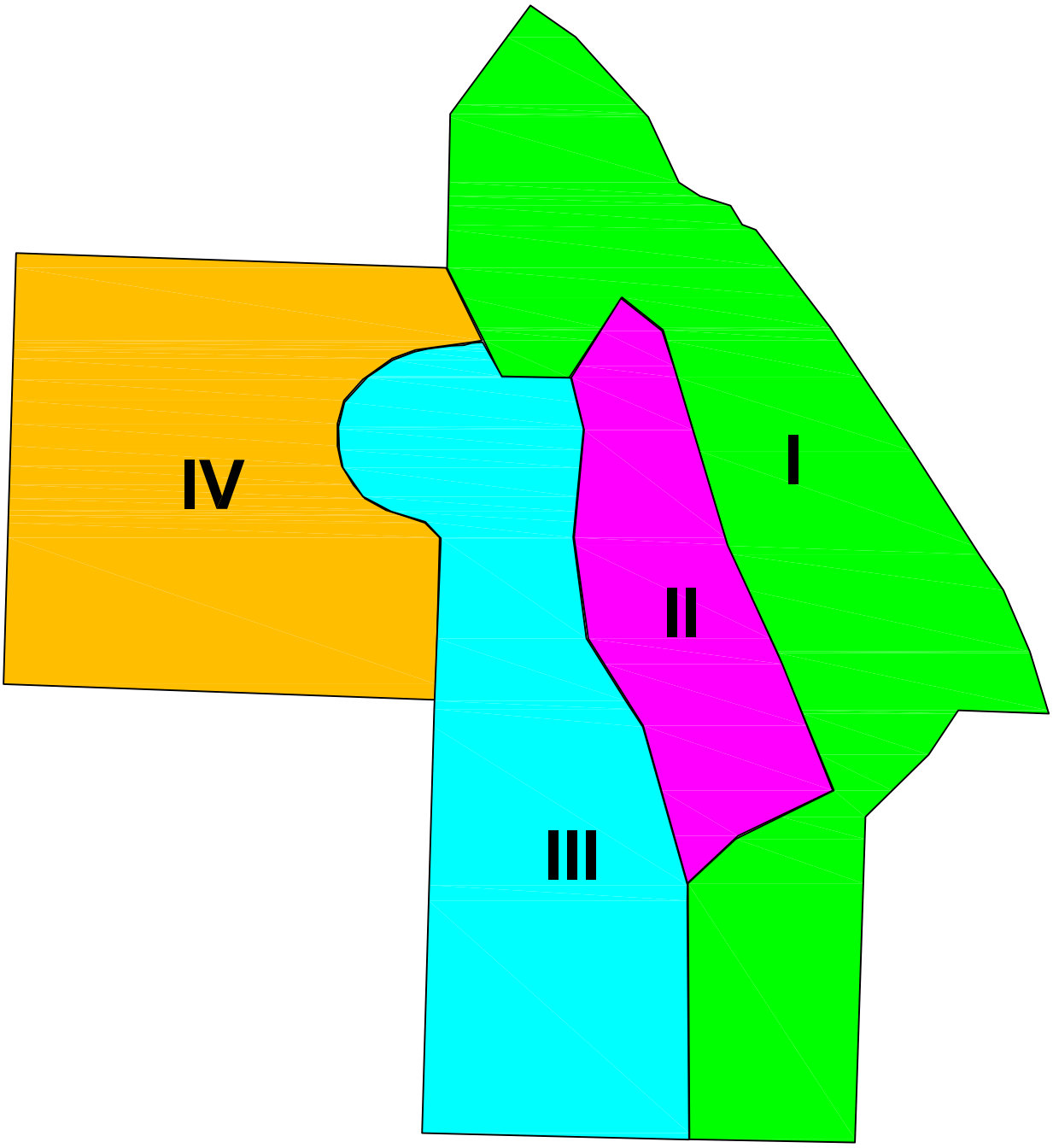
FEET

ACTIVE WELL LOCATION MAP

San Miguel Ranch

PLATE 7

M:\Drafting\JOBFILES\2008\1303\1303.003\Drawings\1303.003well_loc.dwg 04-24-2008 - 5:08pm



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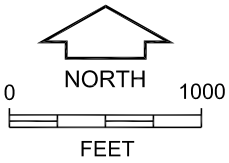
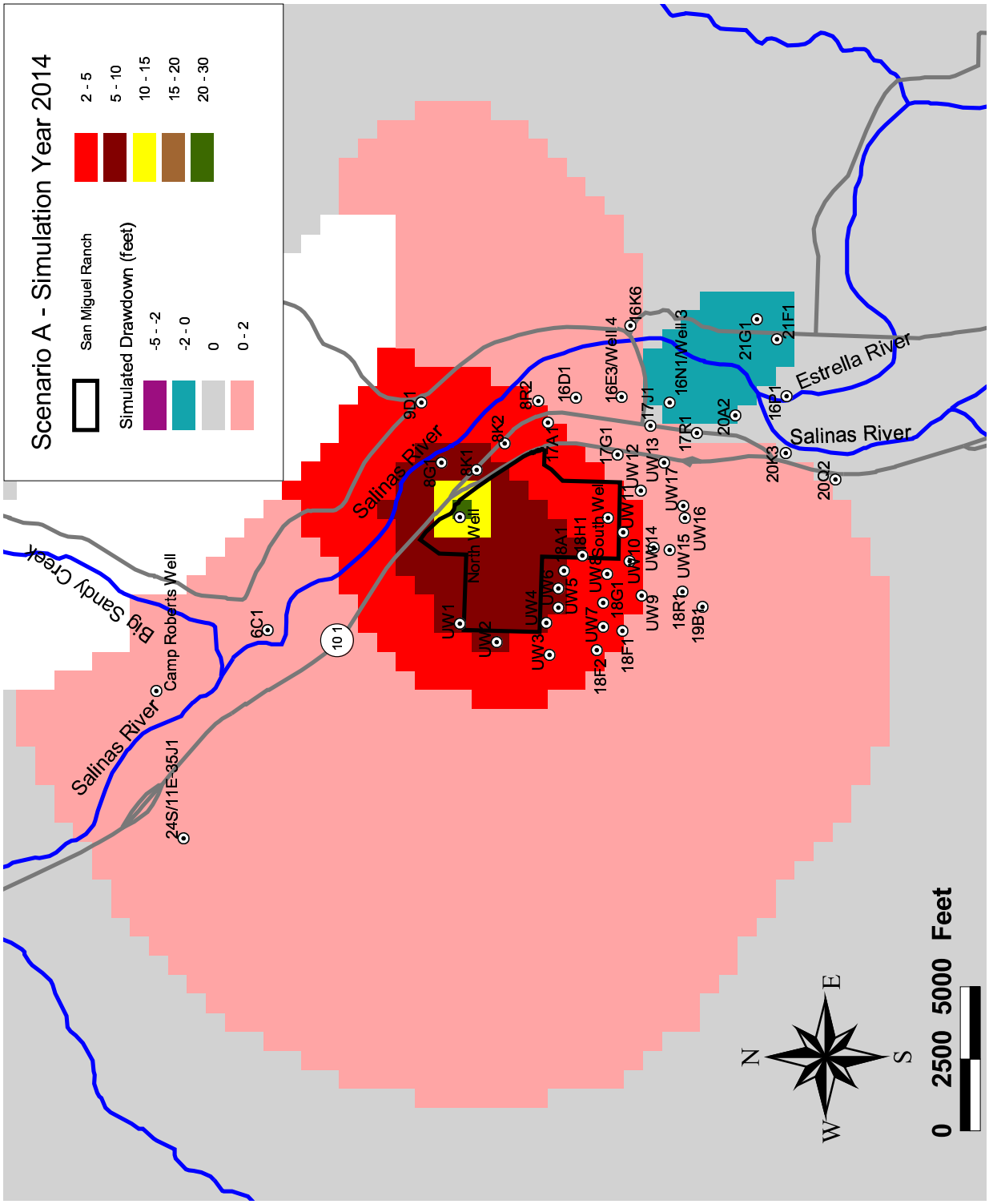


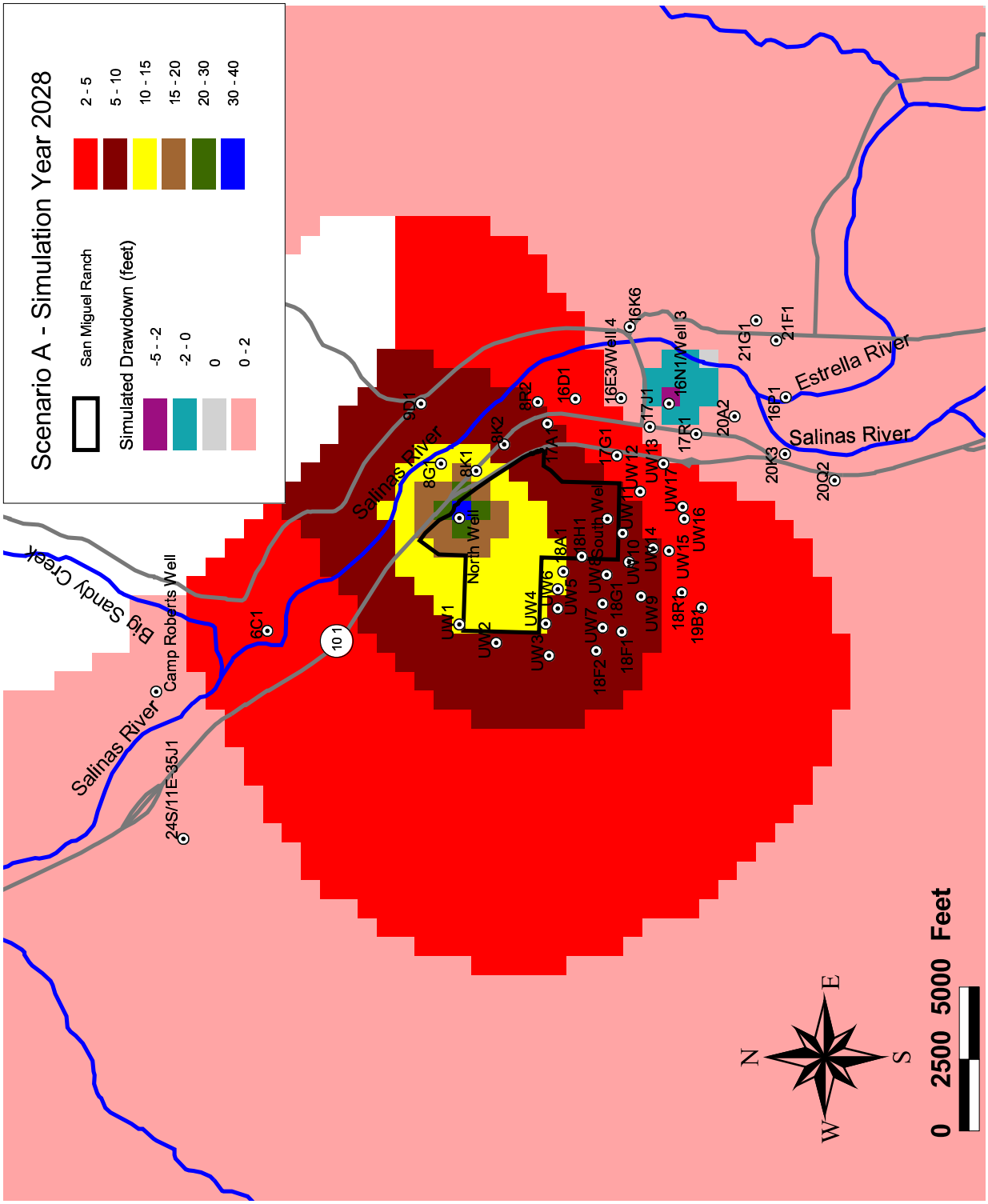
PHASED DEVELOPMENT AREAS
OF THE SAN MIGUEL RANCH
San Miguel Ranch

PLATE 8



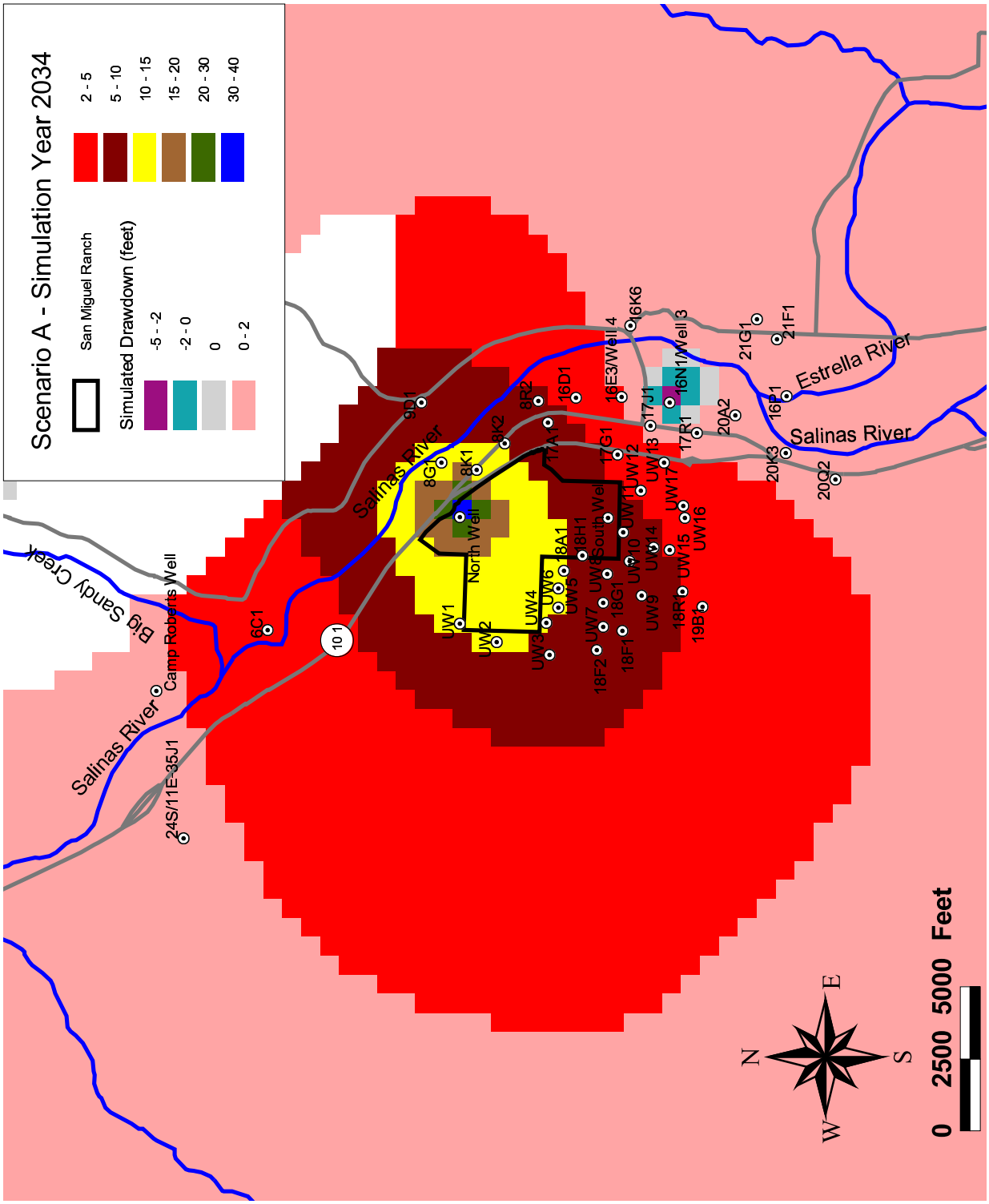
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA AT DEVELOPMENT BUILD-OUT IN THE YEAR 2014 UNDER SCENARIO A

San MIguel Ranch



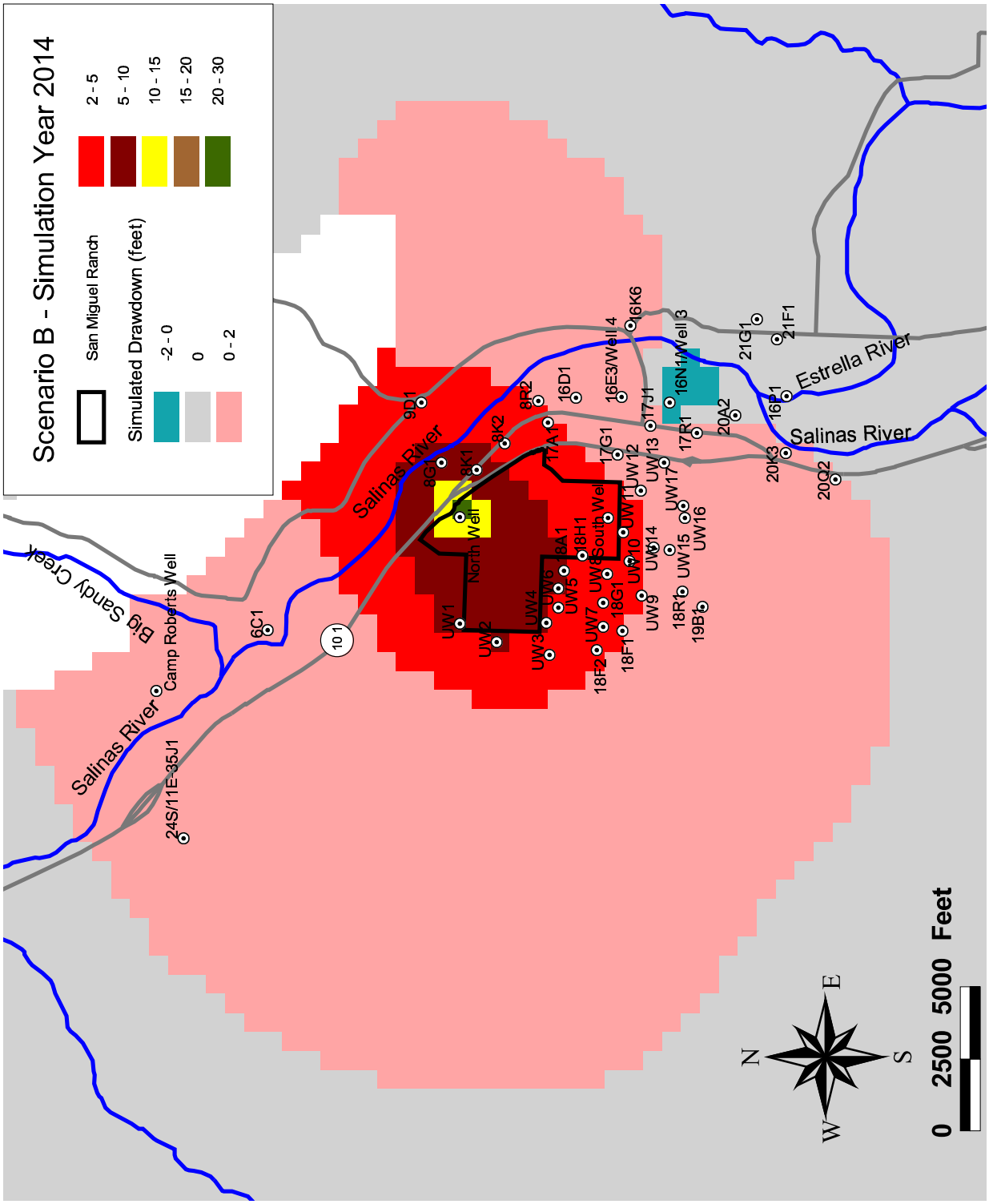
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA AT SAN MIGUEL CSD BUILD-OUT IN THE YEAR 2028 UNDER SCENARIO A

San MIguel Ranch



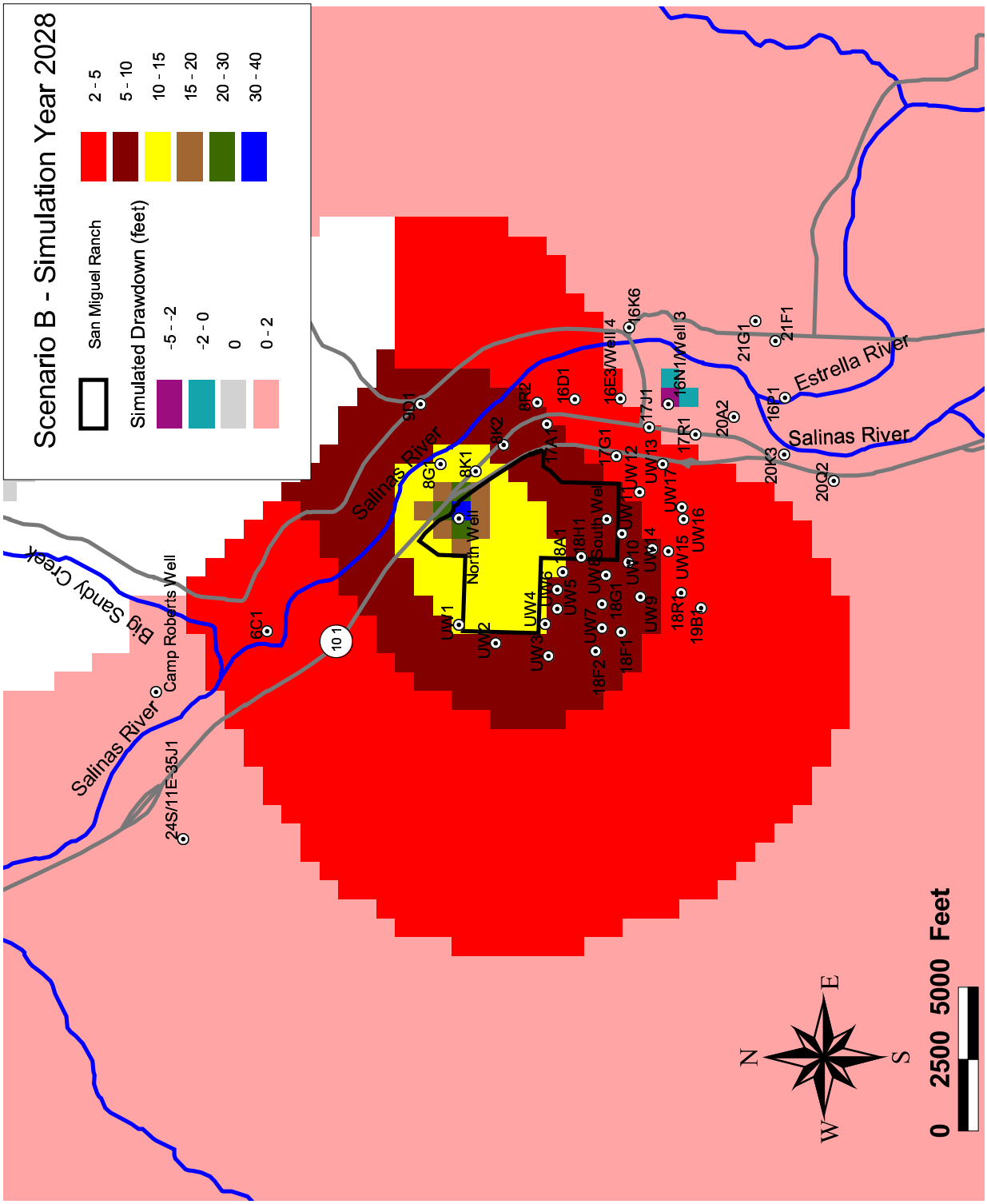
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA IN THE YEAR 2034 UNDER SCENARIO A

San MIguel Ranch



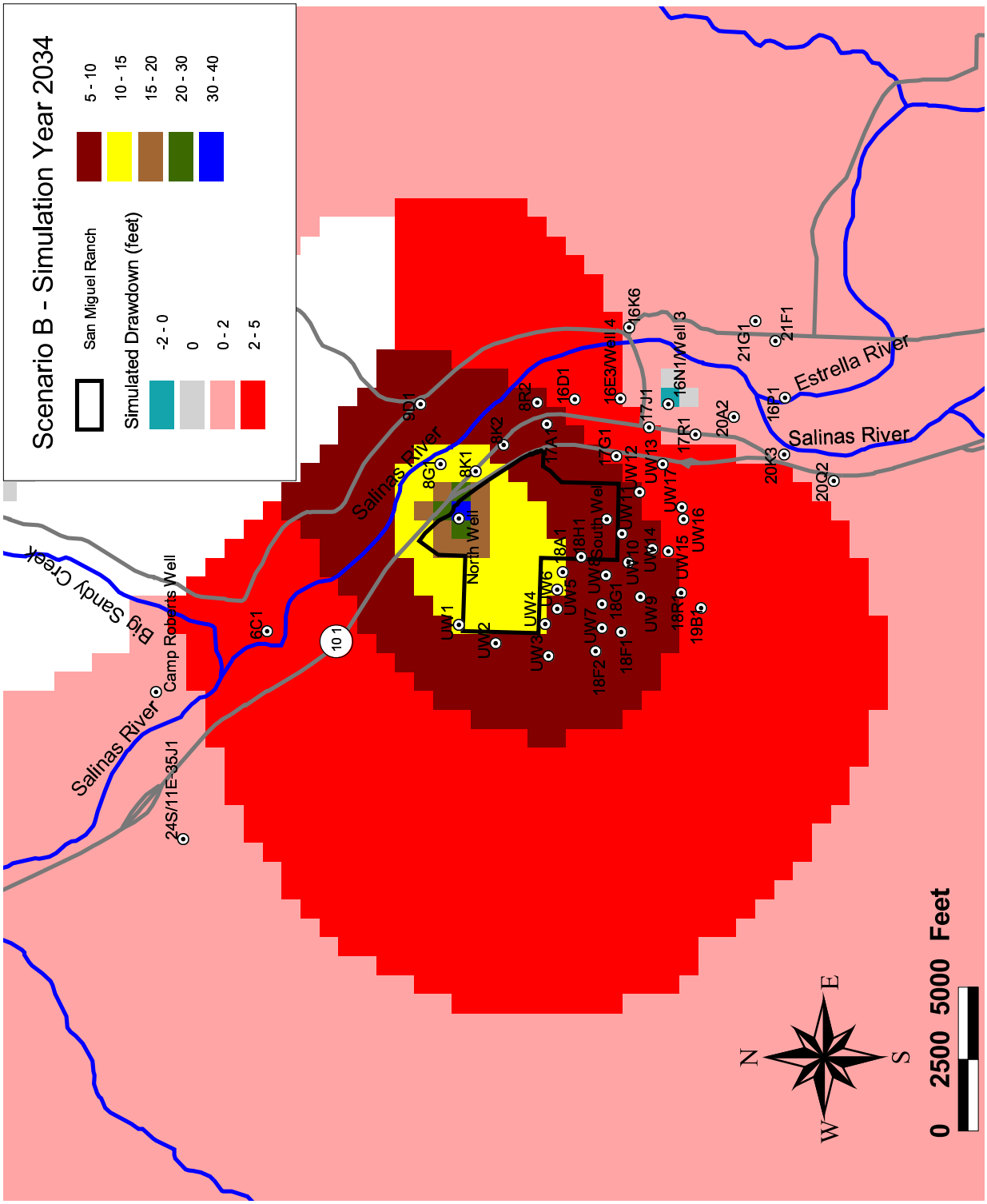
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA AT DEVELOPMENT BUILD-OUT IN THE YEAR 2014 UNDER SCENARIO B

San MIguel Ranch



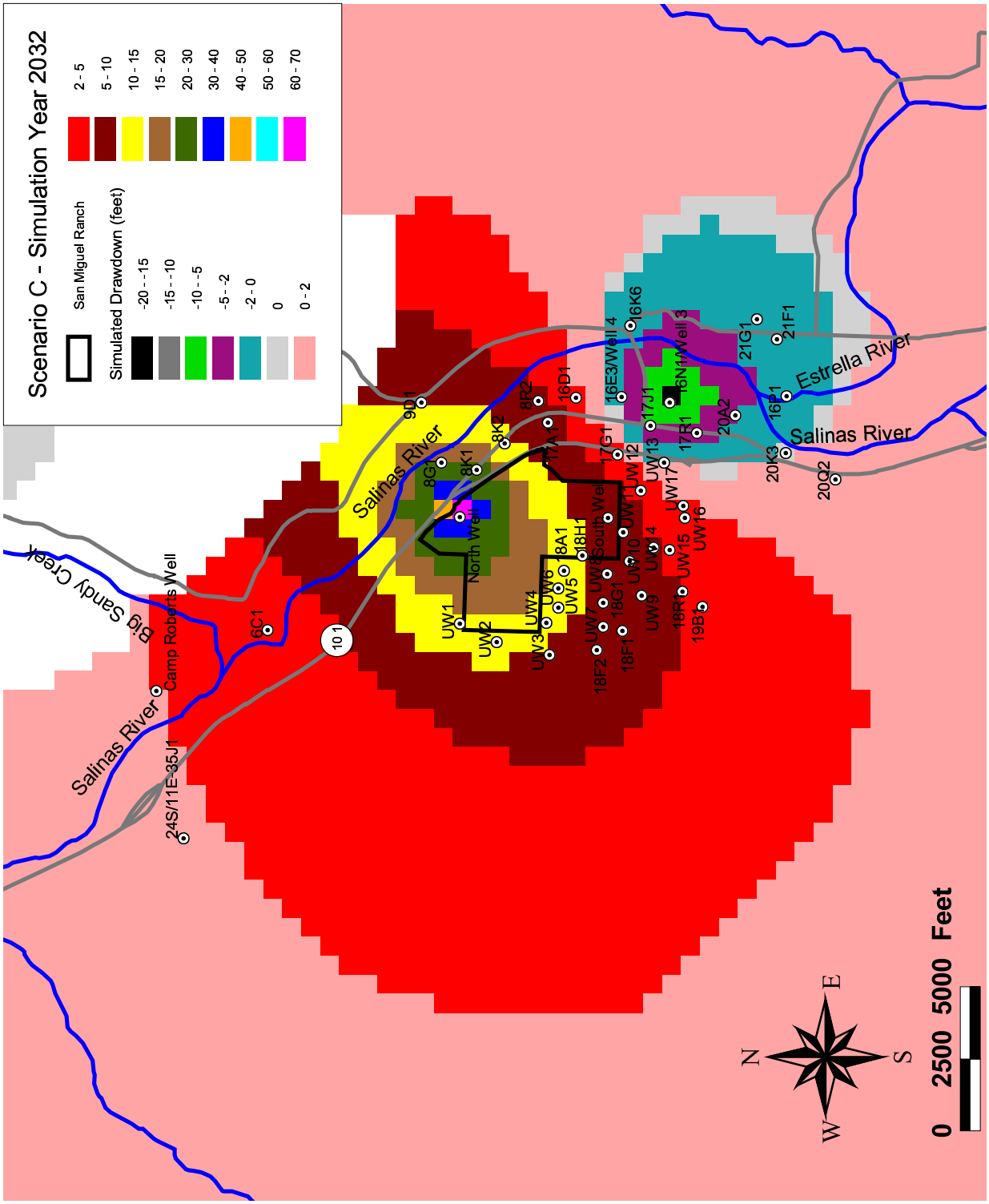
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA AT SAN MIGUEL CSD BUILD-OUT IN THE YEAR 2028 UNDER SCENARIO B

San MIguel Ranch



SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA IN THE YEAR 2034 UNDER SCENARIO B

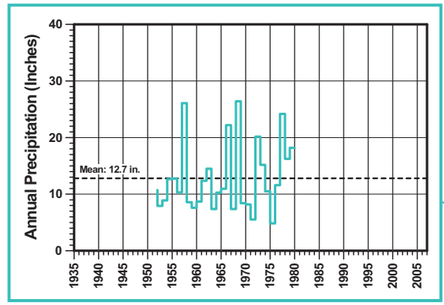
San MIguel Ranch

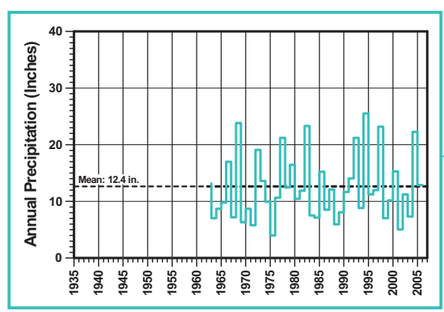


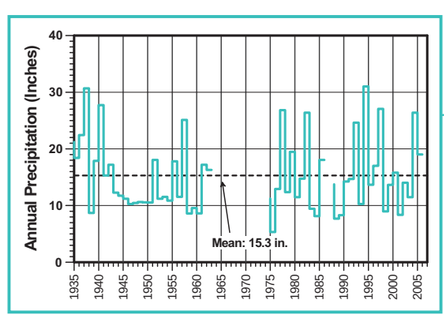
SIMULATED GROUNDWATER LEVEL DRAWDOWN IN THE SAN MIGUEL RANCH AREA IN THE YEAR 2032 UNDER SCENARIO C

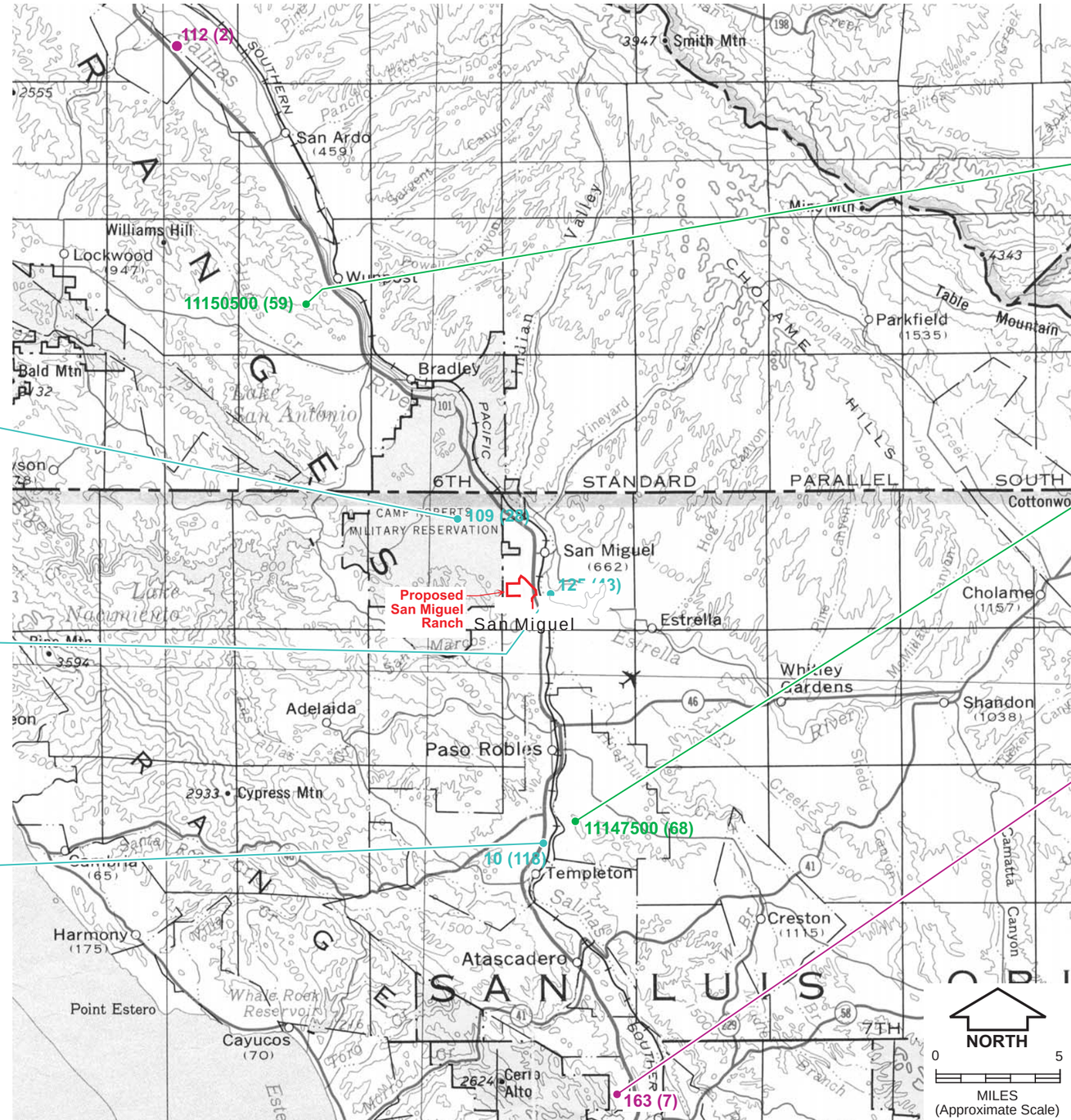
San MIguel Ranch

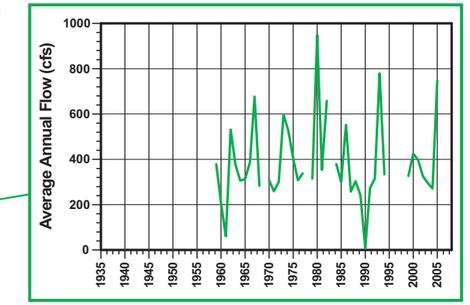
APPENDIX A
PRECIPITATION AND EVAPORATION DATA

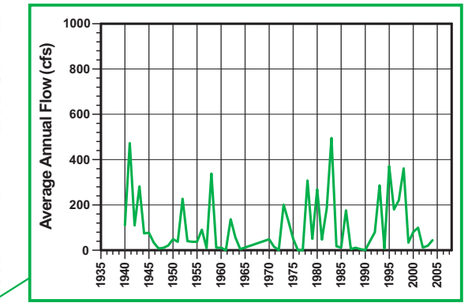


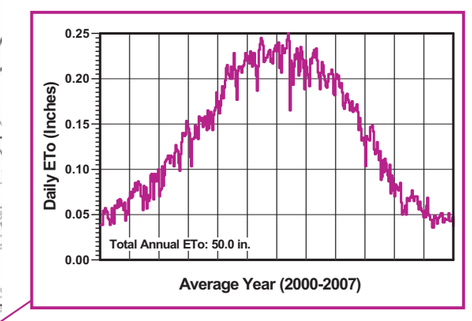












LEGEND

125 (43) — Precipitaion station number; Number of years of record

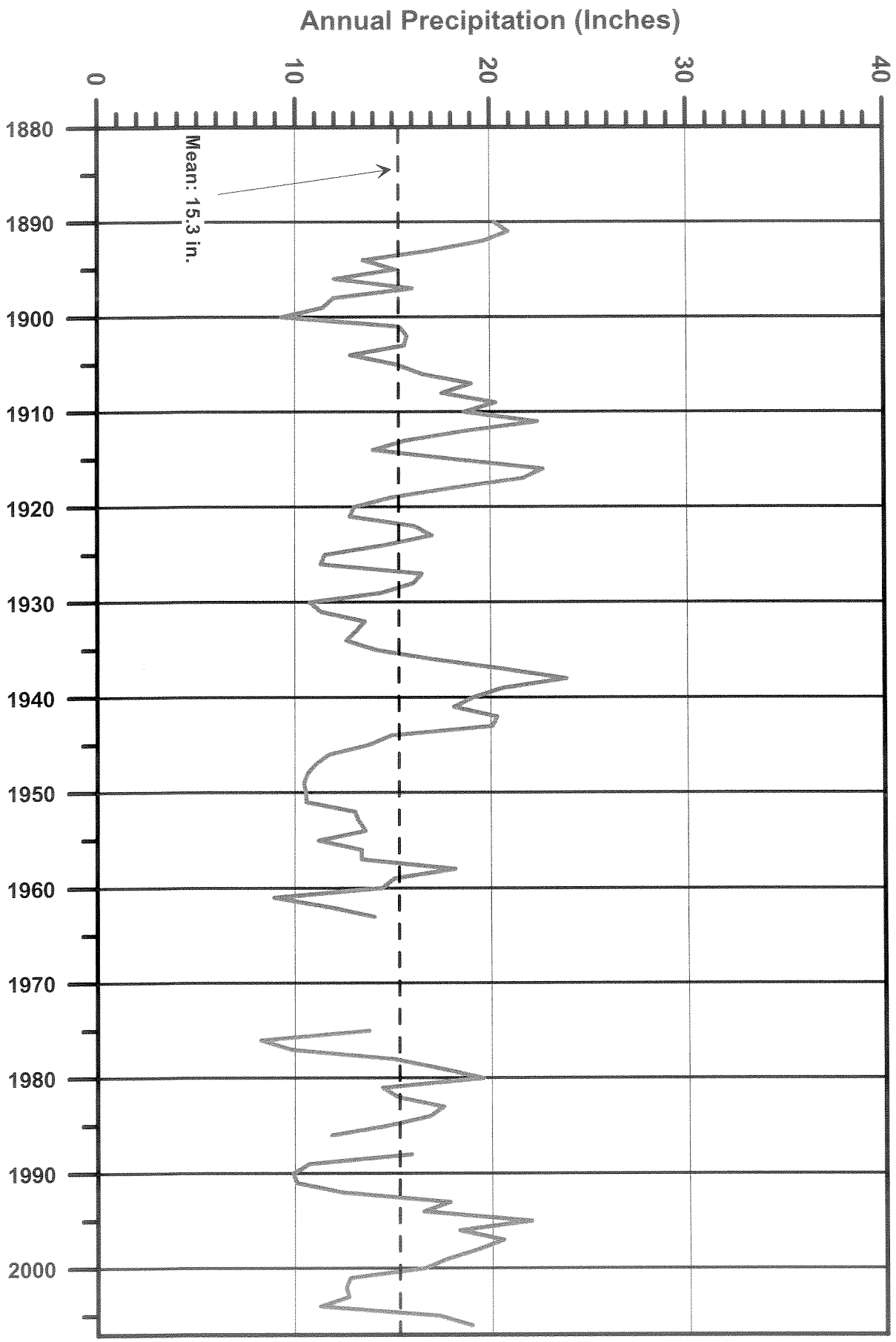
163 (7) — Evaporation station number; Number of years of record

11150500 (59) — Stream flow station number; Number of years of record

CLIMATOLOGICAL DATA
San Miguel Ranch

Base map source: State of California, South Half, Scale 1:500,000 (U.S. Dept. of the Interior Geological Survey, 1968, rev. 1981).

M:\drafting\jobfiles\2007\1303.003\1303.003climate.dsf(1-4),3-29-07


Annual Precipitation (Inches)
0
10
20
30
40
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
Mean: 15.3 in.

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name - Paso Robles # 10

Station Location -

Latitude - 35° 37'

Longitude - 120° 42'

Description - Paso Robles

Water Years -

Beginning - 1887-1888

Ending - 2005-2006

Station Statistics -

Month	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Average	0.02	0.04	0.21	0.58	1.22	2.48	3.36	3.17	2.80	0.94	0.40	0.07	15.29
Maximum	0.68	1.19	3.57	5.61	7.14	9.13	14.76	12.74	12.31	5.22	2.41	1.48	31.03
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.77

County of SLO
Precip. Data

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name and no. Paso Robles # 10

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2005-2006	0.00	0.08	0.00	0.02	0.46	2.54	5.78	1.23	4.50	2.92	1.48	0.00	19.01
2004-2005	0.00	0.00	0.00	4.68	1.33	2.86	7.05	5.11	3.56	0.70	1.10	0.00	26.39
2003-2004	0.35	0.00	0.00	0.00	0.02	0.44	4.00	1.60	4.52	0.56	0.00	0.00	11.49
2002-2003	0.00	0.00	0.00	0.00	2.54	4.52	0.13	2.10	1.86	1.70	1.18	0.00	14.03
2001-2002	0.04	0.00	0.00	0.24	2.81	2.19	0.87	0.33	1.40	0.23	0.25	0.00	8.36
2000-2001	0.00	0.00	0.03	1.34	0.05	0.16	4.43	5.14	3.58	1.08	0.00	0.00	15.81
1999-2000	0.00	0.00	0.47	0.00	0.71	0.22	3.16	5.89	1.55	1.56	0.05	0.04	13.65
1998-1999	0.00	0.00	0.08	0.21	0.99	0.73	1.84	1.21	2.71	1.19	0.00	0.00	8.96
1997-1998	0.01	0.05	0.10	0.07	4.05	3.93	2.99	9.04	2.71	1.96	2.05	0.11	27.07
1996-1997	0.00	0.00	0.00	1.78	1.52	5.78	7.93	0.00	0.00	0.00	0.00	0.00	17.01
1995-1996	0.00	0.00	0.00	0.00	0.12	1.92	1.74	6.52	2.03	0.78	0.55	0.00	13.66
1994-1995	0.00	0.00	1.17	0.70	2.32	0.93	11.51	1.42	12.31	0.09	0.44	0.14	31.03
1993-1994	0.00	0.00	0.00	0.17	0.86	1.28	1.90	3.37	1.16	0.49	1.05	0.00	10.28
1992-1993	0.03	0.00	0.01	0.77	0.00	3.59	9.63	6.96	3.43	0.06	0.01	0.14	24.63
1991-1992	0.00	0.10	0.10	0.50	0.16	3.21	1.44	6.06	2.99	0.10	0.00	0.03	14.69
1990-1991	0.00	0.00	0.51	0.00	0.14	0.20	0.63	2.17	10.23	0.08	0.03	0.26	14.25
1989-1990	0.00	0.00	1.59	0.97	0.22	0.00	3.02	1.48	0.24	0.12	0.66	0.00	8.30
1988-1989	0.00	0.00	0.00	0.00	1.16	2.87	0.92	1.59	0.71	0.37	0.07	0.00	7.69
1987-1988	0.00	0.00	0.00	1.50	2.63	2.70	1.94	2.54	0.00	2.02	0.21	0.20	13.74
1985-1986	0.02	0.00	0.04	0.40	2.62	0.97	2.11	6.93	4.64	0.32	0.00	0.00	18.05
1984-1985	0.00	0.00	0.00	0.38	2.10	3.01	0.52	0.92	1.03	0.19	0.00	0.00	8.15
1983-1984	0.00	0.52	0.37	1.34	2.07	3.68	0.20	0.24	0.66	0.35	0.00	0.00	9.43
1982-1983	0.00	0.00	1.04	0.90	3.98	1.98	5.86	4.53	4.69	3.35	0.05	0.00	26.38
1981-1982	0.00	0.00	0.00	1.01	1.44	0.62	2.62	0.88	5.10	3.05	0.00	0.02	14.74
1980-1981	0.35	0.00	0.00	0.00	0.02	0.44	4.00	1.60	4.52	0.56	0.00	0.00	11.49
1979-1980	0.00	0.00	0.06	0.93	0.85	2.32	4.47	8.05	1.91	0.65	0.24	0.00	19.48
1978-1979 (2)	0.00	0.00	0.97	0.00	2.28	0.87	4.37	3.79	2.24	0.02	0.00	0.00	14.54
1978-1979	0.00	0.00	0.97	0.00	2.28	0.87	4.37	3.79	0.10	0.00	0.00	0.00	12.38
1977-1978	0.00	0.00	0.00	0.08	0.25	5.25	5.77	7.31	5.41	2.77	0.00	0.00	26.84
1976-1977	0.00	1.10	2.90	0.58	1.40	1.69	2.10	0.04	1.41	0.00	1.71	0.00	12.93
1975-1976	0.00	0.01	0.00	0.76	0.03	0.10	0.00	2.61	1.09	0.66	0.00	0.08	5.34
1974-1975	0.00	0.00	0.00	0.64	0.43	2.33	0.01	4.12	2.81	0.89	0.00	0.00	11.23
1962-1963	0.00	0.00	0.00	0.71	0.01	2.20	3.30	3.52	3.18	3.16	0.22	0.00	16.30
1961-1962	0.00	0.00	0.00	0.00	1.98	2.59	2.05	8.49	1.98	0.00	0.12	0.00	17.21
1960-1961	0.00	0.00	0.00	0.06	3.63	1.17	1.72	0.20	0.88	0.22	0.74	0.00	8.62
1959-1960	0.00	0.00	0.52	0.00	0.00	0.31	2.42	4.20	0.70	1.40	0.03	0.00	9.58
1958-1959	0.00	0.38	1.20	0.00	0.13	0.48	1.69	4.21	0.03	0.44	0.05	0.00	8.61
1957-1958	0.00	0.00	0.02	0.60	0.30	3.30	2.93	6.02	6.35	5.22	0.37	0.00	25.11
1956-1957	0.00	0.00	0.00	1.07	0.00	0.17	4.77	2.40	0.31	1.63	0.70	0.47	11.52
1955-1956	0.00	0.13	0.00	0.00	1.36	8.14	3.82	0.99	0.05	1.87	1.45	0.00	17.81

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name and no. Paso Robles # 10

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
1954-1955	0.00	0.13	0.00	0.00	1.29	1.51	3.24	1.85	0.37	1.16	1.31	0.00	10.86
1953-1954	0.00	0.00	0.00	0.00	2.46	0.02	3.31	1.89	3.12	0.74	0.00	0.00	11.54
1952-1953 (2)	0.07	0.00	0.02	0.02	1.76	4.78	1.71	0.00	0.66	1.90	0.06	0.01	10.99
1952-1953	0.07	0.00	0.02	0.02	1.76	4.78	1.71	0.20	0.66	1.90	0.06	0.01	11.19
1951-1952	0.00	0.00	0.03	0.33	1.91	4.57	5.54	0.20	3.92	1.49	0.05	0.00	18.04
1950-1951	0.68	0.00	0.00	1.24	1.18	2.50	2.41	0.80	1.53	0.00	0.19	0.00	10.53
1949-1950	0.00	0.00	0.00	0.00	0.78	2.33	2.39	2.43	1.65	1.00	0.00	0.00	10.58
1948-1949	0.00	0.00	0.00	0.06	0.00	3.04	1.09	1.95	3.73	0.36	0.38	0.00	10.61
1947-1948	0.00	0.00	0.04	0.32	0.18	0.62	0.00	1.85	3.51	3.50	0.45	0.00	10.47
1946-1947	0.26	0.00	0.00	0.19	4.57	2.17	0.56	0.97	1.14	0.13	0.28	0.00	10.27
1945-1946	0.00	0.00	0.00	1.09	0.49	3.89	0.31	1.64	3.01	0.05	0.72	0.00	11.20
1944-1945	0.00	0.00	0.00	0.00	2.64	1.09	0.80	4.17	2.76	0.26	0.02	0.00	11.74
1943-1944	0.00	0.00	0.00	0.39	0.12	3.38	1.03	5.96	0.64	0.65	0.11	0.00	12.28
1942-1943	0.00	0.00	0.00	0.53	1.01	1.64	8.00	1.68	3.63	0.72	0.00	0.00	17.21
1941-1942	0.00	0.02	0.00	1.34	0.70	5.15	2.40	0.76	1.77	3.01	0.15	0.00	15.30
1940-1941	0.00	0.00	0.00	0.19	0.13	8.18	4.73	8.16	6.14	0.00	0.19	0.00	27.72
1939-1940	0.00	0.00	0.40	1.19	0.96	1.75	6.53	4.35	1.12	1.59	0.00	0.00	17.89
1938-1939	0.00	0.00	0.41	0.23	0.33	1.45	3.11	1.45	1.58	0.05	0.09	0.00	8.70
1937-1938	0.00	0.00	0.00	0.16	0.66	7.40	1.73	12.74	6.77	0.93	0.30	0.00	30.69
1936-1937	0.00	0.00	0.00	1.93	0.00	6.10	4.39	4.59	5.25	0.16	0.00	0.00	22.42
1935-1936	0.25	0.16	0.07	0.18	1.58	1.66	0.64	11.07	1.24	1.52	0.01	0.04	18.42
1934-1935	0.00	0.00	0.00	1.56	2.61	2.66	6.23	0.65	4.08	3.41	0.02	0.00	21.22
1933-1934	0.00	0.00	0.00	0.64	0.00	4.26	2.06	3.75	0.04	0.12	0.00	0.75	11.62
1932-1933	0.00	0.00	0.00	0.04	0.11	1.28	6.05	0.08	0.84	0.22	0.32	0.68	9.62
1931-1932	0.00	0.09	0.00	0.01	1.89	7.04	2.74	3.89	0.50	0.30	0.13	0.00	16.59
1930-1931	0.00	0.00	0.04	0.00	1.64	0.16	5.58	1.87	0.39	0.56	2.01	0.93	13.18
1929-1930	0.00	0.00	0.01	0.00	0.00	0.24	4.32	1.80	3.00	0.54	1.01	0.04	10.96
1928-1929	0.00	0.00	0.00	0.01	1.82	2.87	1.27	1.65	1.22	0.49	0.00	0.49	9.82
1927-1928	0.00	0.00	0.00	1.33	2.02	1.62	0.23	2.87	2.76	0.37	0.29	0.00	11.49
1926-1927	0.00	0.00	0.00	0.25	7.14	0.90	1.84	9.04	1.45	1.27	0.00	0.02	21.91
1925-1926	0.09	0.12	0.02	0.17	0.21	1.98	2.13	6.26	0.27	3.52	0.00	0.02	14.79
1924-1925	0.00	0.00	0.02	0.89	0.90	1.08	0.34	2.44	2.57	2.01	2.41	0.08	12.74
1923-1924	0.00	0.00	0.29	0.26	0.18	0.22	1.52	0.56	3.05	0.26	0.04	0.00	6.38
1922-1923	0.00	0.00	0.00	0.41	3.39	4.61	2.11	1.01	0.09	3.52	0.00	0.31	15.45
1921-1922	0.00	0.00	0.44	0.50	0.07	7.36	4.44	5.45	2.79	0.21	0.54	0.01	21.81
1920-1921	0.00	0.00	0.00	0.68	1.42	1.95	3.76	1.21	2.85	0.66	1.17	0.00	13.70
1919-1920	0.00	0.00	0.10	0.03	0.05	4.55	0.80	2.22	4.05	1.00	0.00	0.01	12.81
1918-1919	0.00	0.00	0.46	0.49	3.04	1.29	0.61	3.61	2.26	0.00	0.15	0.00	11.91
1917-1918	0.00	0.01	0.00	0.00	0.57	0.08	0.36	7.90	5.45	0.00	0.00	0.00	14.37
1916-1917	0.00	0.21	0.78	1.96	0.47	7.61	1.12	5.56	0.47	0.19	0.14	0.00	18.51

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name and no. Paso Robles # 10

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
1915-1916	0.00	0.00	0.00	0.00	0.24	2.46	14.76	2.01	1.82	0.14	0.11	0.00	21.54
1914-1915	0.00	0.00	0.00	0.00	0.40	0.11	5.52	6.36	8.15	1.09	1.85	1.48	24.96
1913-1914	0.00	0.00	0.70	0.00	3.02	1.99	12.13	2.53	0.72	0.06	0.28	0.14	21.57
1912-1913	0.00	0.00	0.04	0.00	0.35	0.12	4.37	1.88	0.68	0.31	0.16	0.15	8.06
1911-1912	0.00	0.00	0.04	0.13	0.12	1.74	1.40	0.00	5.14	2.89	0.91	0.00	12.37
1910-1911	0.00	0.00	0.63	0.27	0.17	0.62	11.20	2.39	9.95	1.41	0.00	0.00	26.64
1909-1910	0.00	0.00	0.00	0.72	1.94	6.30	3.81	0.28	3.82	0.22	0.00	0.00	17.09
1908-1909	0.00	0.00	0.00	0.25	0.90	1.77	12.05	4.99	3.58	0.00	0.00	0.00	23.54
1907-1908	0.00	0.00	0.00	2.92	0.00	3.01	5.40	3.28	0.40	0.25	0.05	0.00	15.31
1906-1907	0.00	0.00	0.00	0.00	1.23	5.28	7.51	1.24	6.54	0.20	0.00	0.00	22.00
1905-1906	0.00	0.00	0.00	0.00	0.99	0.29	2.55	2.92	6.12	0.27	2.09	0.00	15.23
1904-1905	0.00	0.00	3.57	0.86	0.16	1.29	1.79	5.64	3.95	0.47	2.16	0.00	19.89
1903-1904	0.00	0.00	0.00	0.00	0.48	0.33	0.44	4.86	6.45	1.95	0.00	0.00	14.51
1902-1903	0.00	0.00	0.00	1.08	0.71	0.96	2.19	1.35	4.16	0.79	0.00	0.00	11.24
1901-1902	0.00	0.00	0.04	1.57	1.04	0.00	1.05	5.32	2.50	1.23	0.00	0.00	12.75
1900-1901	0.00	0.00	0.00	1.54	6.10	0.25	6.11	5.37	0.63	1.37	1.43	0.00	22.80
1899-1900	0.00	0.00	0.00	2.55	1.40	2.53	2.11	0.08	1.90	0.42	0.67	0.00	11.66
1898-1899	0.00	0.00	0.10	0.13	0.30	0.27	4.16	0.08	4.99	1.37	0.00	0.13	11.53
1897-1898	0.00	0.02	0.03	0.56	0.05	0.23	0.82	1.55	0.83	0.00	0.68	0.00	4.77
1896-1897	0.00	1.19	0.00	1.66	1.92	2.48	3.65	4.18	2.88	0.00	0.00	0.00	17.96
1895-1896	0.00	0.00	0.00	0.61	1.53	0.55	4.64	0.02	3.77	1.25	0.77	0.00	13.14
1894-1895	0.00	0.50	1.13	0.33	0.09	6.14	6.43	0.47	1.28	0.48	0.08	0.00	16.93
1893-1894	0.00	0.00	0.00	0.24	0.00	2.38	1.06	0.59	0.22	0.24	1.09	0.12	5.94
1892-1893	0.00	0.00	0.00	0.46	2.06	5.02	3.28	4.09	6.28	1.09	0.27	0.00	22.55
1891-1892	0.00	0.00	0.41	0.00	0.00	4.09	0.63	1.39	3.09	0.11	1.88	0.38	11.98
1890-1891	0.00	0.00	0.65	0.00	0.30	3.34	0.52	7.27	2.51	1.72	0.06	0.05	16.42
1889-1890	0.00	0.00	0.00	5.61	1.69	9.13	6.75	5.40	1.74	0.03	0.22	0.00	30.57
1888-1889	0.00	0.00	0.01	0.00	4.02	2.80	0.78	0.98	5.55	0.45	1.25	0.00	15.84
1887-1888	0.00	0.00	0.00	0.21	0.60	2.61	5.60	0.30	4.50	0.20	0.28	0.00	14.30

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name - Sinclair # 125

Station Location -

Latitude - 35° 45' 32"

Longitude - 120° 41' 38"

Description - San Miguel

Water Years -

Beginning - 1962-1963

Ending - 2005-2006

Station Statistics -

Month	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Average	0.02	0.05	0.24	0.63	1.20	1.88	3.88	2.34	2.15	2.34	0.30	0.06	15.09
Maximum	0.20	1.35	3.22	3.92	5.62	5.27	67.09	8.41	9.98	64.00	2.26	0.93	74.45
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.99

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name and no. Sinclair # 125

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2005-2006	0.00	0.05	0.04	0.00	0.48	1.01	4.17	1.22	2.88	1.82	1.21	0.00	12.88
2004-2005	0.00	0.00	0.00	3.92	1.20	5.14	3.45	5.03	1.85	0.96	0.67	0.04	22.26
2003-2004	0.00	0.03	0.00	0.00	0.99	2.06	0.74	3.23	0.28	64.00	0.00	0.00	71.33
2002-2003	0.00	0.00	0.00	0.00	1.15	4.06	0.35	2.00	1.20	1.22	1.25	0.00	11.23
2001-2002	0.18	0.00	0.00	0.31	0.81	1.61	0.76	0.11	1.19	0.01	0.07	0.00	5.05
2000-2001	0.00	0.00	0.02	1.19	0.21	0.33	3.86	5.27	3.28	1.15	0.00	0.00	15.31
1999-2000	0.00	0.00	0.30	0.00	0.61	0.25	2.09	3.44	1.71	1.53	0.05	0.18	10.16
1998-1999	0.00	0.00	0.15	0.26	0.59	0.48	1.41	0.75	1.99	1.33	0.00	0.09	7.05
1997-1998	0.00	0.00	0.17	0.01	3.09	3.35	2.32	8.41	2.16	1.51	2.12	0.02	23.16
1996-1997	0.00	0.00	0.00	2.42	0.71	4.55	4.31	0.00	0.00	0.00	0.01	0.00	12.00
1995-1996	0.00	0.00	0.00	0.00	0.15	1.78	1.53	4.96	1.93	0.55	0.34	0.00	11.24
1994-1995	0.00	0.00	0.91	0.59	2.09	0.83	9.49	0.93	9.98	0.23	0.21	0.26	25.52
1993-1994	0.00	0.00	0.00	0.46	0.73	0.99	1.62	2.43	1.07	0.37	1.16	0.00	8.83
1992-1993	0.01	0.00	0.00	0.77	0.00	2.92	7.99	6.16	3.11	0.03	0.05	0.15	21.19
1991-1992	0.00	0.02	0.05	0.31	0.04	2.68	1.33	5.28	4.19	0.04	0.00	0.11	14.05
1990-1991	0.00	0.00	0.31	0.00	0.15	0.45	0.63	1.79	8.21	0.10	0.00	0.03	11.67
1989-1990	0.00	0.00	1.78	1.15	0.30	0.00	2.26	1.51	0.19	0.14	0.74	0.00	8.07
1988-1989	0.00	0.00	0.00	0.00	0.48	2.64	0.80	1.07	0.78	0.17	0.02	0.00	5.96
1987-1988	0.00	0.00	0.00	1.64	1.87	2.53	1.91	1.56	0.65	1.74	0.05	0.15	12.10
1986-1987	0.05	0.00	0.76	0.05	0.07	0.68	1.72	1.76	3.15	0.20	0.00	0.07	8.51
1985-1986	0.02	0.00	0.00	0.47	2.26	0.93	0.02	0.00	0.00	0.47	2.26	0.93	7.36
1984-1985	0.00	0.02	0.00	0.39	1.84	2.73	0.39	0.26	1.26	0.24	0.00	0.00	7.13
1983-1984	0.00	0.77	0.00	1.44	1.31	2.83	0.14	0.45	0.26	0.31	0.00	0.00	7.51
1982-1983	0.00	0.00	1.00	1.08	2.95	1.13	5.07	3.19	6.17	2.56	0.16	0.00	23.31
1981-1982	0.00	0.00	0.00	0.80	1.28	0.44	2.02	0.86	3.96	2.52	0.00	0.00	11.88
1980-1981	0.20	0.00	0.00	0.00	0.02	0.56	67.09	1.15	4.63	0.75	0.05	0.00	74.45
1979-1980	0.00	0.00	0.02	0.70	0.71	1.90	3.45	7.03	1.86	0.76	0.02	0.00	16.45
1978-1979	0.00	0.00	0.98	0.00	1.75	1.01	3.43	3.11	2.08	0.10	0.00	0.00	12.46
1977-1978	0.00	0.00	0.00	0.13	0.23	4.30	4.34	5.10	4.17	2.91	0.02	0.00	21.20
1976-1977	0.00	1.35	3.22	0.19	0.35	1.61	1.16	0.00	1.13	0.00	1.64	0.01	10.66
1975-1976	0.00	0.02	0.00	0.54	0.02	0.03	0.00	1.85	0.74	0.72	0.00	0.07	3.99
1974-1975	0.00	0.00	0.00	0.93	0.32	2.50	0.00	3.34	1.79	1.07	0.00	0.00	9.95
1973-1974	0.00	0.00	0.00	0.76	2.09	1.19	5.90	0.09	2.92	0.66	0.00	0.00	13.61
1972-1973	0.00	0.00	0.05	2.29	3.87	0.34	4.71	5.10	2.54	0.13	0.07	0.00	19.10
1971-1972	0.00	0.00	0.00	0.04	0.55	4.00	0.52	0.16	0.00	0.21	0.06	0.26	5.80
1970-1971	0.00	0.00	0.00	0.04	2.73	3.62	0.57	0.21	0.35	0.92	0.25	0.00	8.69
1969-1970	0.03	0.00	0.05	0.05	0.33	0.49	2.13	0.82	2.30	0.12	0.00	0.00	6.32
1968-1969	0.00	0.00	0.00	2.17	1.38	2.07	8.82	7.27	0.36	1.72	0.00	0.04	23.83
1967-1968	0.00	0.00	0.54	0.08	1.84	0.89	0.63	0.88	1.37	0.96	0.02	0.00	7.21
1966-1967	0.20	0.00	0.22	0.00	2.15	5.27	2.76	0.23	2.35	3.73	0.07	0.00	16.98
1965-1966	0.16	0.02	0.00	0.00	5.62	2.22	1.19	0.49	0.04	0.00	0.00	0.04	9.78
1964-1965	0.00	0.00	0.07	0.84	1.25	1.93	0.71	0.43	1.48	1.99	0.00	0.00	8.70
1963-1964	0.00	0.00	0.12	1.27	2.02	0.02	1.35	0.11	0.62	1.18	0.34	0.00	7.03
1962-1963	0.00	0.00	0.00	0.45	0.00	2.55	1.62	3.90	2.44	2.02	0.18	0.00	13.16

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

MONTHLY PRECIPITATION REPORT

Station Name - Camp Roberts # 109

Station Location -

Latitude - 35° 48' 04"

Longitude - 120° 45' 05"

Description - Camp Roberts

Water Years -

Beginning - 1951-1952

Ending - 1979-1980

Station Statistics -

Month	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Average	0.01	0.05	0.23	0.43	1.48	2.02	2.63	2.42	1.83	1.24	0.28	0.01	12.63
Maximum	0.32	1.42	2.99	2.16	6.73	8.00	9.32	8.33	6.89	5.23	2.36	0.18	26.41
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85

San Luis Obispo County Public Works

Volunteer Precipitation Gauge Station

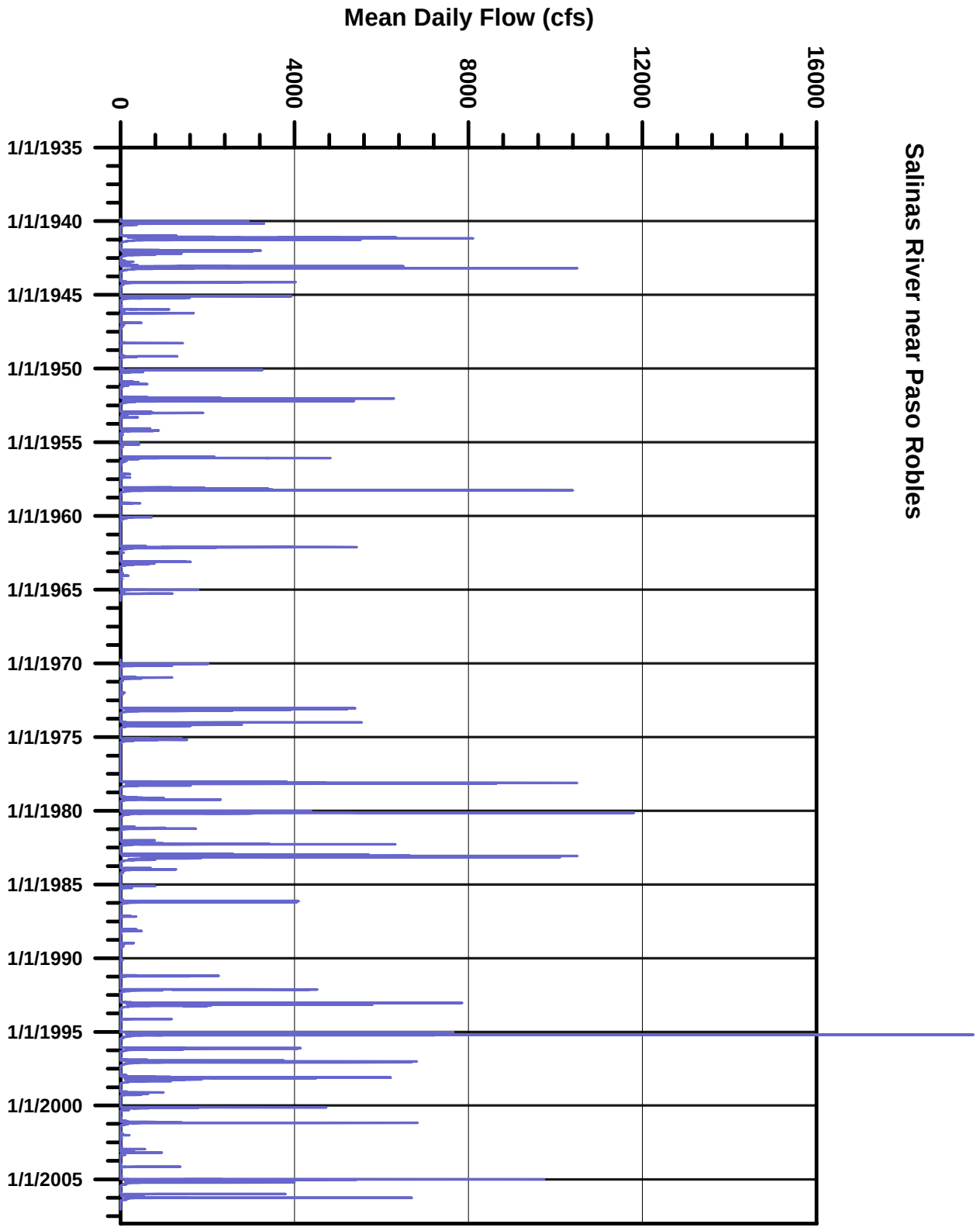
MONTHLY PRECIPITATION REPORT

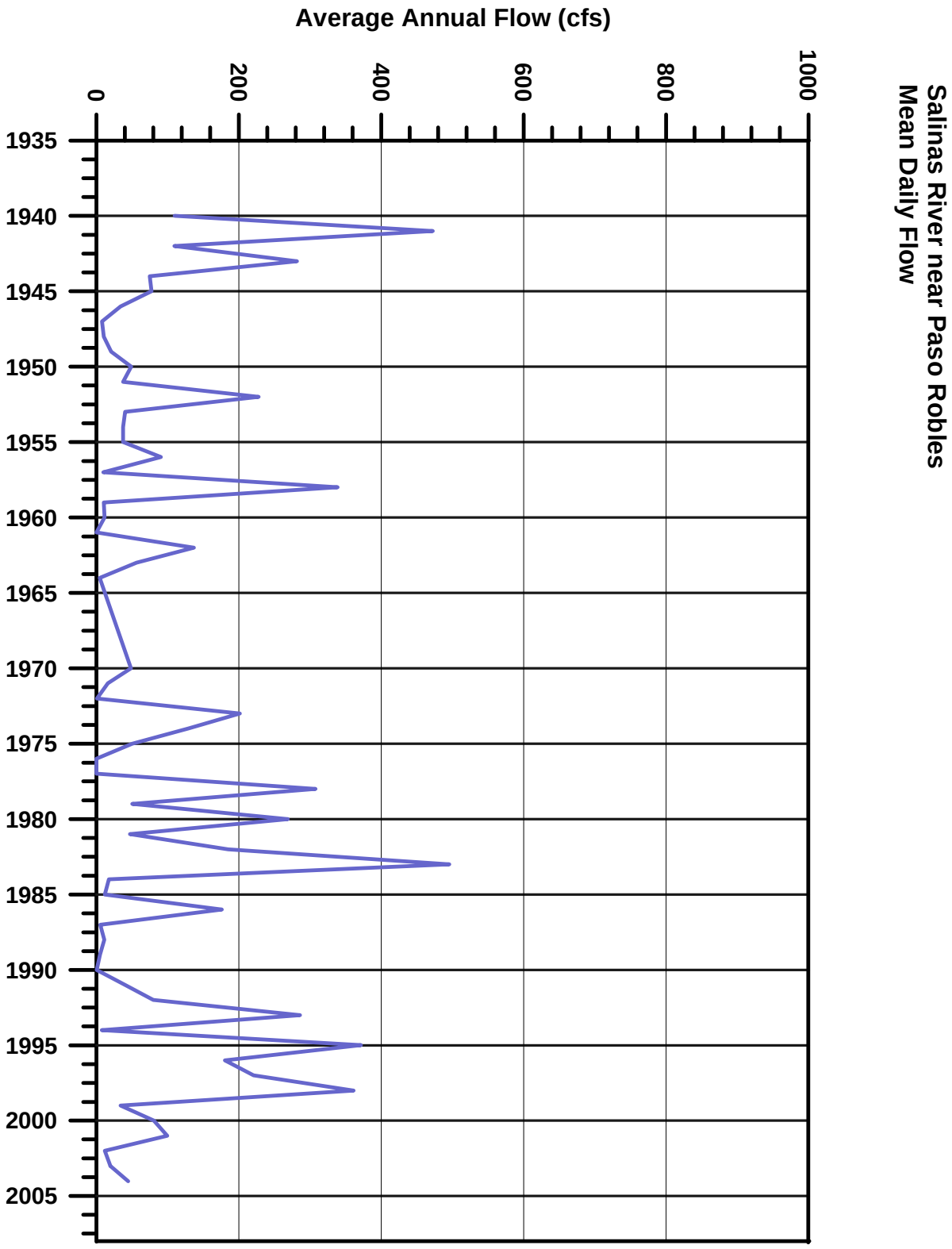
Station Name and no. Camp Roberts # 109

*** All units are in inches ***

Water Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
1979-1980	0.00	0.00	0.00	0.66	1.59	2.52	3.43	6.73	2.25	0.95	0.06	0.00	18.19
1978-1979	0.00	0.00	1.01	0.00	2.81	1.18	5.35	3.44	2.45	0.00	0.00	0.00	16.24
1977-1978	0.00	0.00	0.00	0.13	0.28	5.25	5.08	6.38	4.30	2.77	0.00	0.00	24.19
1976-1977	0.00	1.42	2.99	0.17	1.26	1.42	1.27	0.00	1.07	0.10	1.89	0.00	11.59
1975-1976	0.00	0.01	0.00	0.63	0.06	0.04	0.00	2.04	0.93	1.02	0.00	0.12	4.85
1974-1975	0.00	0.00	0.00	0.84	0.11	2.20	0.00	3.92	2.34	1.09	0.00	0.00	10.50
1973-1974	0.00	0.00	0.00	0.66	2.32	1.38	6.94	0.05	3.27	0.57	0.00	0.00	15.19
1972-1973	0.00	0.00	0.01	1.68	4.04	0.67	4.85	6.09	2.54	0.10	0.19	0.00	20.17
1971-1972	0.00	0.00	0.00	0.22	0.58	3.75	0.38	0.14	0.00	0.29	0.18	0.00	5.54
1970-1971	0.00	0.00	0.00	0.00	3.17	3.91	0.65	0.10	0.37	0.00	0.00	0.00	8.20
1969-1970	0.00	0.00	0.00	0.03	0.37	0.47	2.68	1.09	3.60	0.18	0.00	0.00	8.42
1968-1969	0.00	0.00	0.00	2.16	1.77	2.68	9.32	8.19	0.30	1.99	0.00	0.00	26.41
1967-1968	0.00	0.00	0.55	0.10	1.79	0.70	1.05	0.54	1.47	1.10	0.07	0.00	7.37
1966-1967	0.32	0.00	0.38	0.00	2.54	8.00	2.32	0.30	3.43	4.89	0.00	0.00	22.18
1965-1966	0.04	0.00	0.00	0.00	6.73	2.18	1.40	0.56	0.06	0.00	0.00	0.00	10.97
1964-1965 (2)	0.00	0.00	0.05	1.09	1.58	2.15	0.89	0.27	1.60	2.52	0.00	0.00	10.15
1964-1965	0.00	0.00	0.05	1.09	1.58	2.15	1.01	0.27	1.60	2.52	0.00	0.00	10.27
1963-1964	0.00	0.00	0.11	1.48	2.58	0.00	1.41	0.08	0.83	0.75	0.13	0.00	7.37
1962-1963	0.00	0.00	0.00	0.27	0.00	2.85	2.08	4.26	2.87	1.93	0.23	0.00	14.49
1961-1962	0.00	0.00	0.00	0.00	1.87	1.82	1.12	6.02	1.55	0.00	0.00	0.00	12.38
1960-1961	0.00	0.00	0.00	0.09	3.70	0.84	1.90	0.35	0.86	0.10	0.86	0.00	8.70
1959-1960	0.00	0.00	0.18	0.00	0.00	0.28	2.16	2.94	0.75	1.19	0.09	0.00	7.59
1958-1959	0.00	0.17	1.46	0.00	0.10	0.48	2.05	4.17	0.04	0.09	0.02	0.00	8.58
1957-1958	0.00	0.00	0.00	0.93	0.53	1.95	1.92	8.33	6.89	5.23	0.29	0.00	26.07
1956-1957	0.00	0.00	0.00	0.73	0.00	0.08	4.55	1.47	0.78	1.79	0.74	0.18	10.32
1955-1956	0.00	0.00	0.00	0.05	0.86	5.71	2.72	0.62	0.11	1.55	1.16	0.00	12.78
1954-1955	0.00	0.00	0.00	0.00	0.70	1.89	3.90	2.03	0.81	0.98	2.36	0.00	12.67
1953-1954	0.00	0.00	0.00	0.02	0.00	0.00	3.03	2.14	3.21	0.46	0.04	0.00	8.90
1952-1953	0.08	0.00	0.00	0.00	1.58	3.95	0.51	0.01	0.50	1.26	0.04	0.00	7.93
1951-1952	0.00	0.00	0.00	0.00	0.00	0.00	4.82	0.08	4.13	1.71	0.00	0.00	10.74

APPENDIX B
STREAMFLOW DATA


Salinas River near Paso Robles
16000
12000
8000
4000
0
Mean Daily Flow (cfs)
1/1/1935
1/1/1940
1/1/1945
1/1/1950
1/1/1955
1/1/1960
1/1/1965
1/1/1970
1/1/1975
1/1/1980
1/1/1985
1/1/1990
1/1/1995
1/1/2000
1/1/2005


Salinas River near Paso Robles
Mean Daily Flow
1000
800
600
400
200
0
Average Annual Flow (cfs)
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005

APPENDIX C
NORTH WELL PUMPING TEST DATA

Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

Well 18H1					Well 18A1				
Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation	Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation
15:10	-1100	252.60	807	554.40	15:15	-1095	140.05	738	597.95
8:43	-47	252.58	807	554.42	8:55	-35	140.13	738	597.87
11:25	115	252.6	807	554.40	10:25	55	140.1	738	597.90
12:25	175	252.59	807	554.41	11:34	124	140.09	738	597.91
13:45	255	252.56	807	554.44	12:34	184	140.12	738	597.88
15:00	330	252.55	807	554.45	13:51	261	140.08	738	597.92
16:05	395	252.6	807	554.40	15:06	336	140.02	738	597.98
17:09	459	252.63	807	554.37	16:13	403	139.98	738	598.02
19:04	574	252.58	807	554.42	17:15	465	140	738	598.00
20:00	630	252.68	807	554.32	19:08	578	140.01	738	597.99
21:05	695	252.62	807	554.38	20:10	640	140.02	738	597.98
23:00	810	252.71	807	554.29	21:10	700	140.05	738	597.95
1:05	935	252.74	807	554.26	23:05	815	139.93	738	598.07
3:05	1055	252.83	807	554.17	1:10	940	140.03	738	597.97
5:05	1175	252.8	807	554.20	3:10	1060	140.05	738	597.95
7:07	1297	252.73	807	554.27	5:10	1180	140.02	738	597.98
8:55	1405	252.72	807	554.28	7:14	1304	140.03	738	597.97
12:10	1600	252.69	807	554.31	8:50	1400	140.01	738	597.99
					12:16	1606	139.98	738	598.02

Pump on at North Well **9:30 AM, 4/29/06** Pump Off at North Well **9:40 AM, 4/30/06**

All depths are in feet.

Data? real time or hand measured?

Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

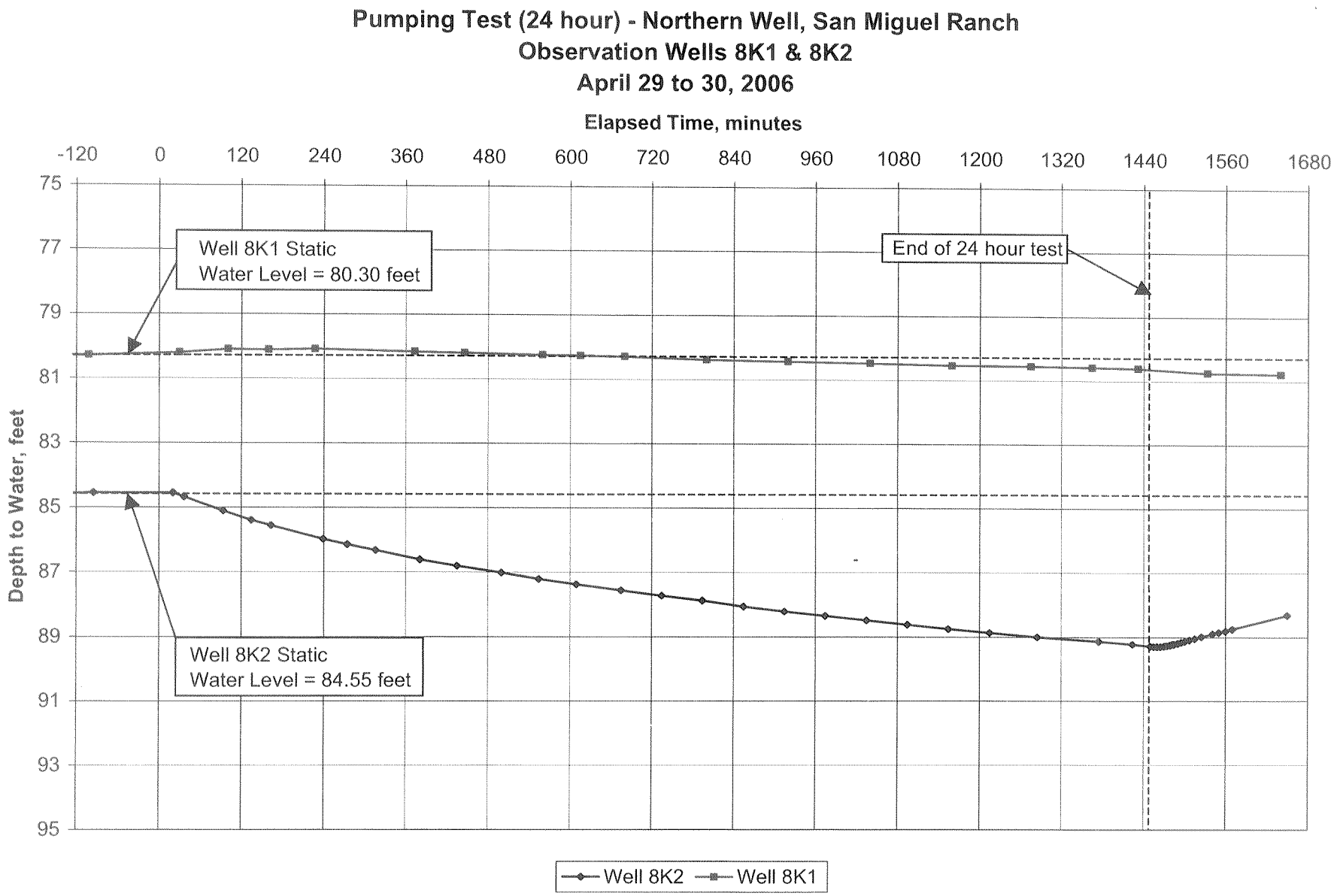
Well 8K2					Well 8K1				
Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation	Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation
14:30	-1140	85.26	635	549.74	14:35	-1135	80.35	655	574.65
7:55	-95	84.55	635	550.45	7:48	-102	80.3	655	574.70
9:51	21	84.55	635	550.45	10:00	30	80.21	655	574.79
10:07	37	84.67	635	550.33	11:11	101	80.1	655	574.90
11:04	94	85.11	635	549.89	12:10	160	80.11	655	574.89
11:45	135	85.39	635	549.61	13:18	228	80.08	655	574.92
12:14	164	85.56	635	549.44	15:43	373	80.16	655	574.84
13:30	240	85.98	635	549.02	16:56	446	80.19	655	574.81
14:05	275	86.15	635	548.85	18:50	560	80.25	655	574.75
14:46	316	86.33	635	548.67	19:45	615	80.27	655	574.73
15:51	381	86.61	635	548.39	20:50	680	80.3	655	574.70
16:45	435	86.81	635	548.19	22:50	800	80.38	655	574.62
17:50	500	87.02	635	547.98	0:50	920	80.43	655	574.57
18:45	555	87.21	635	547.79	2:50	1040	80.48	655	574.52
19:40	610	87.37	635	547.63	4:50	1160	80.53	655	574.47
20:45	675	87.55	635	547.45	6:45	1275	80.55	655	574.45
21:45	735	87.72	635	547.28	8:15	1365	80.58	655	574.42
22:45	795	87.87	635	547.13	9:22	1432	80.61	655	574.39
23:45	855	88.05	635	546.95	11:03	1533	80.75	655	574.25
0:45	915	88.2	635	546.80	12:50	1640	80.78	655	574.22
1:45	975	88.34	635	546.66					
2:45	1035	88.48	635	546.52					
3:45	1095	88.61	635	546.39					
4:45	1155	88.74	635	546.26					
5:45	1215	88.86	635	546.14					
6:55	1285	89.00	635	546.00					
8:25	1375	89.13	635	545.87					
9:14	1424	89.23	635	545.77					
9:40	1450	89.28	635	545.72					
9:45	1455	89.30	635	545.70					
9:50	1460	89.30	635	545.70					
9:55	1465	89.30	635	545.70					
10:00	1470	89.29	635	545.71					
10:03	1473	89.27	635	545.73					
10:05	1475	89.27	635	545.73					
10:09	1479	89.25	635	545.75					
10:12	1482	89.23	635	545.77					
10:15	1485	89.22	635	545.78					
10:20	1490	89.19	635	545.81					
10:25	1495	89.17	635	545.83					
10:30	1500	89.14	635	545.86					
10:37	1507	89.09	635	545.91					
10:45	1515	89.05	635	545.95					
10:55	1525	88.99	635	546.01					
11:11	1541	88.89	635	546.11					
11:20	1550	88.85	635	546.15					

Table 1
San Miguel Ranch

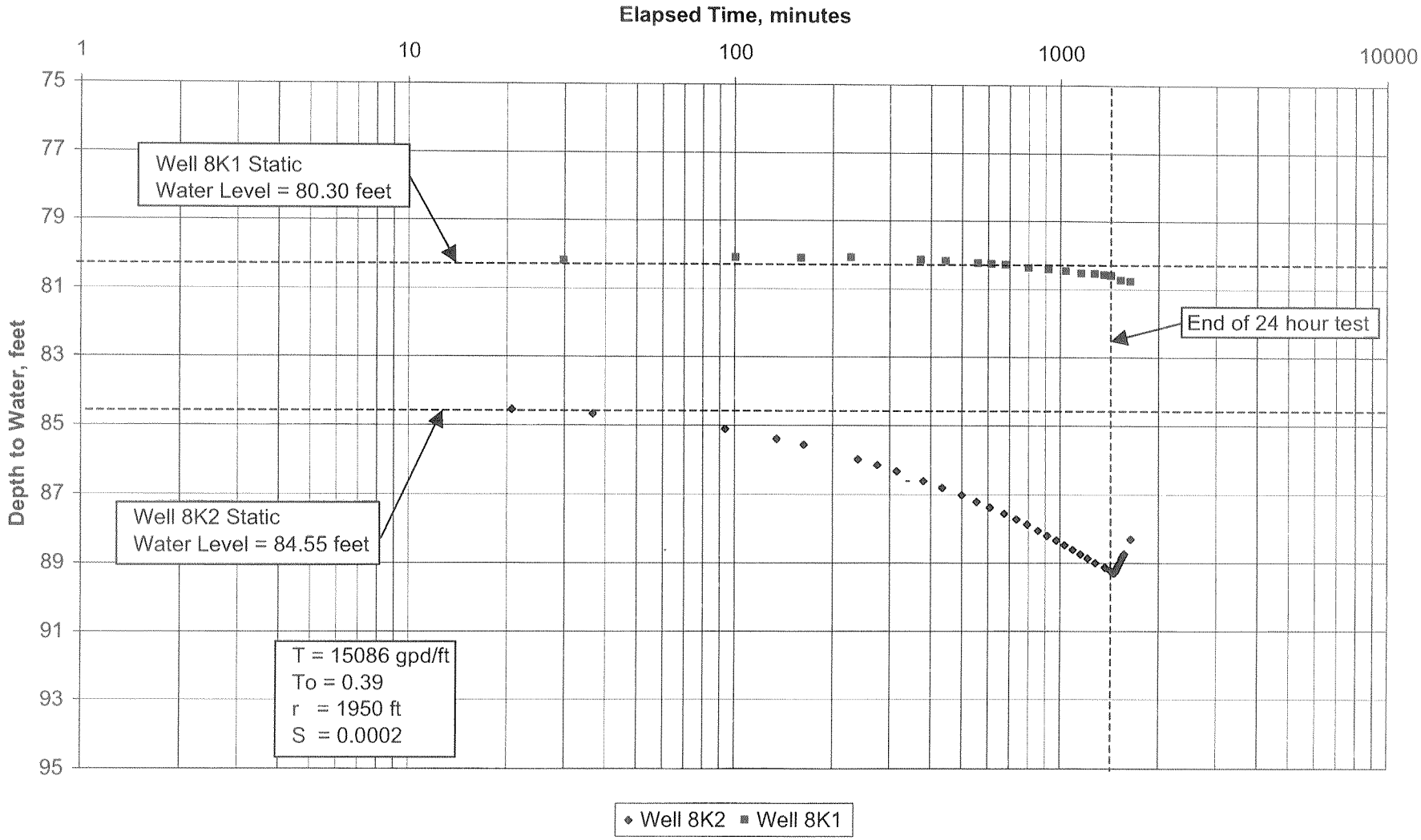
Well Name		Latitude	Longitude	Reference Point Elevation	Total Depth of Well	Top of Screen Depth	Bottom of Well Elevation	Top of Screen Elevation
18H1	Payeur	35.7576	120.7131	807	525	475	282	332
18A1	Jimenez	35.7598	120.7147	738	425	375	313	363
8K2	Winery	35.7664	120.7010	635	525	145	110	490
8K1	Allen	35.7682	120.7030	655	--	--	--	--
North Well		35.7688	120.7068	685	460	300	225	385

Depths in feet below reference point

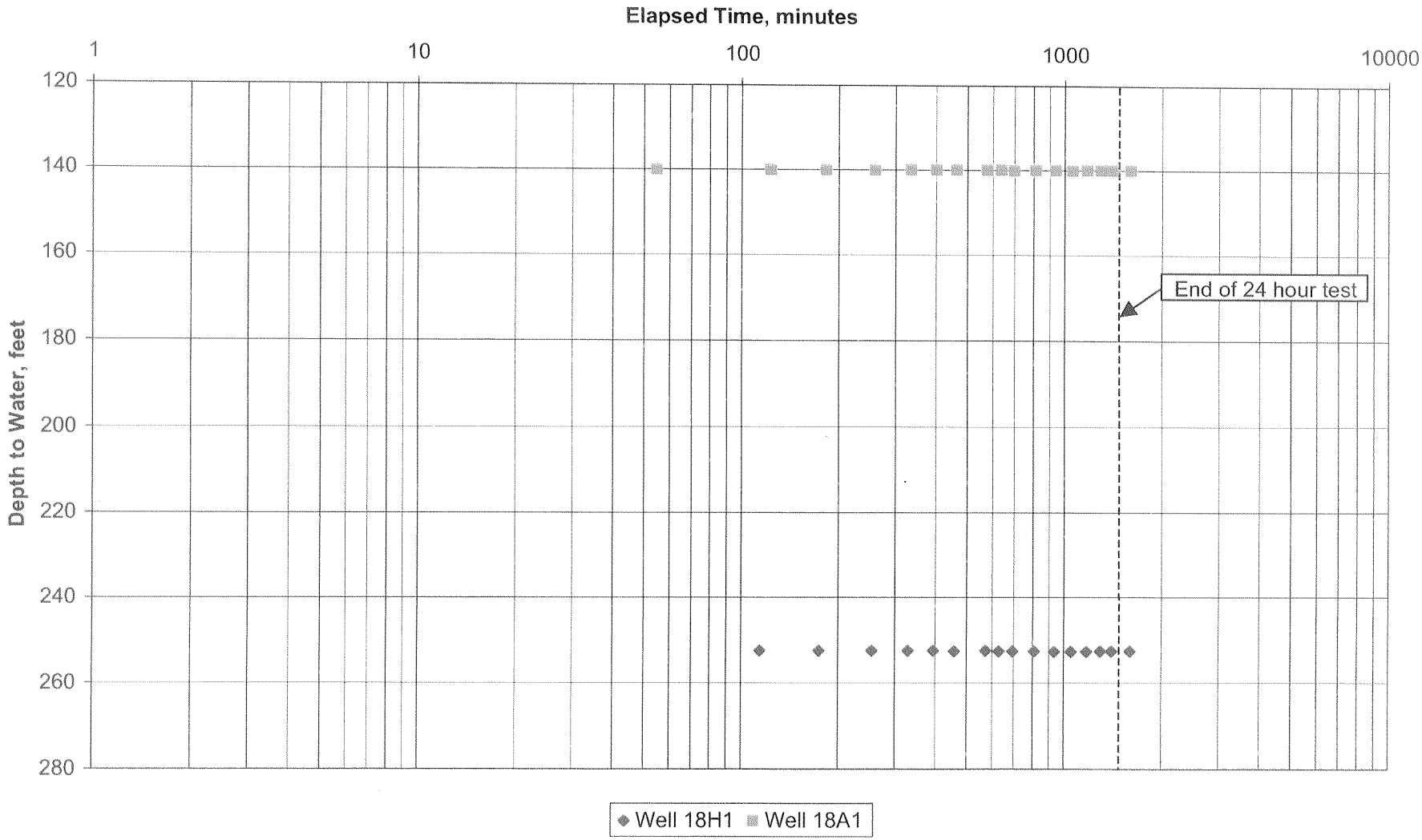
Elevations in feet above sea level, estimated from topography in Map Tech "Terrain Navigator"


Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells 8K1 & 8K2
April 29 to 30, 2006
Elapsed Time, minutes
-120
0
120
240
360
480
600
720
840
960
1080
1200
1320
1440
1560
1680
Depth to Water, feet
75
77
79
81
83
85
87
89
91
93
95
Well 8K1 Static
Water Level = 80.30 feet
End of 24 hour test
Well 8K2 Static
Water Level = 84.55 feet
Well 8K2
Well 8K1

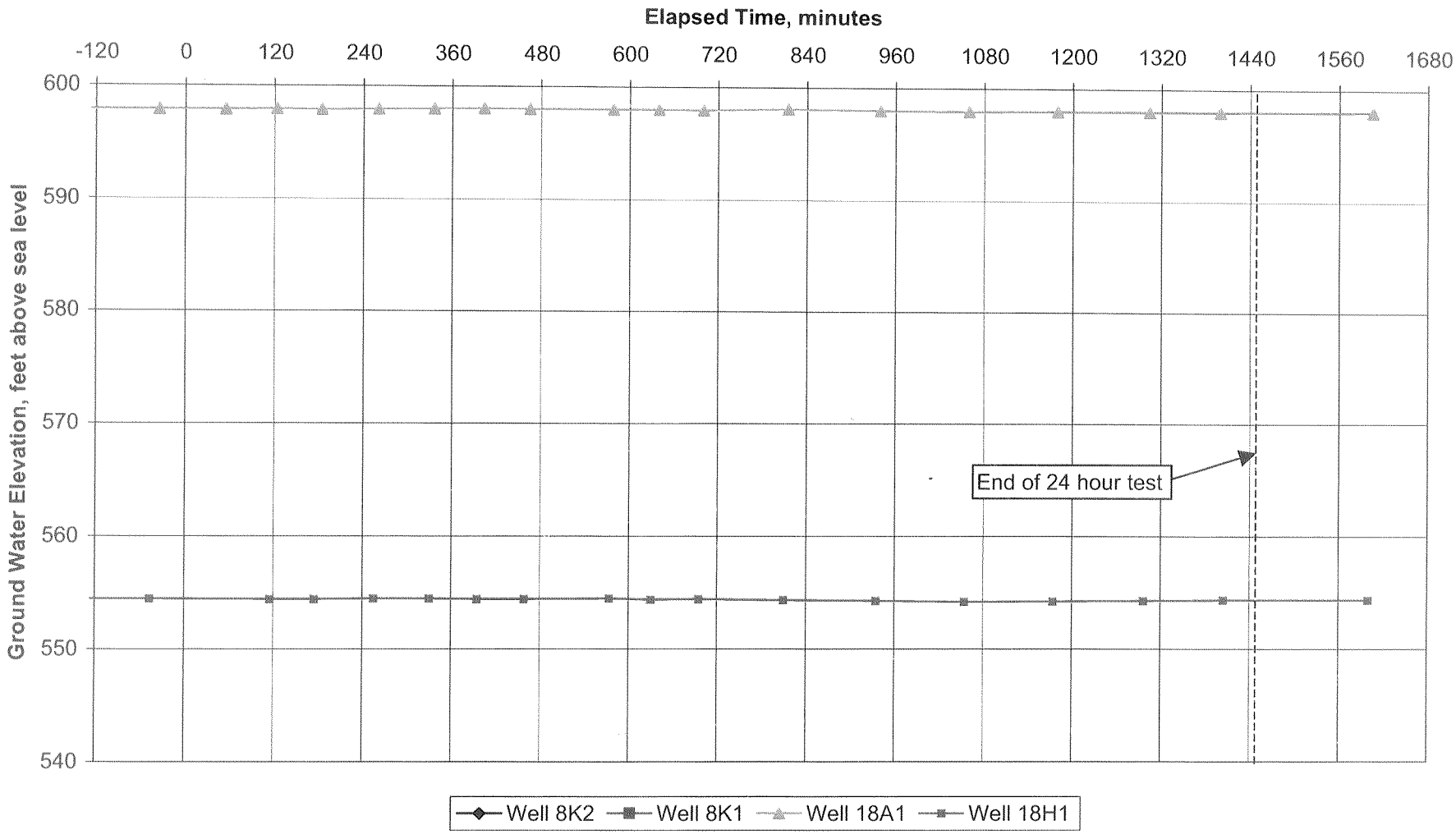
Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells 8K1 & 8K2
April 29 to 30, 2006



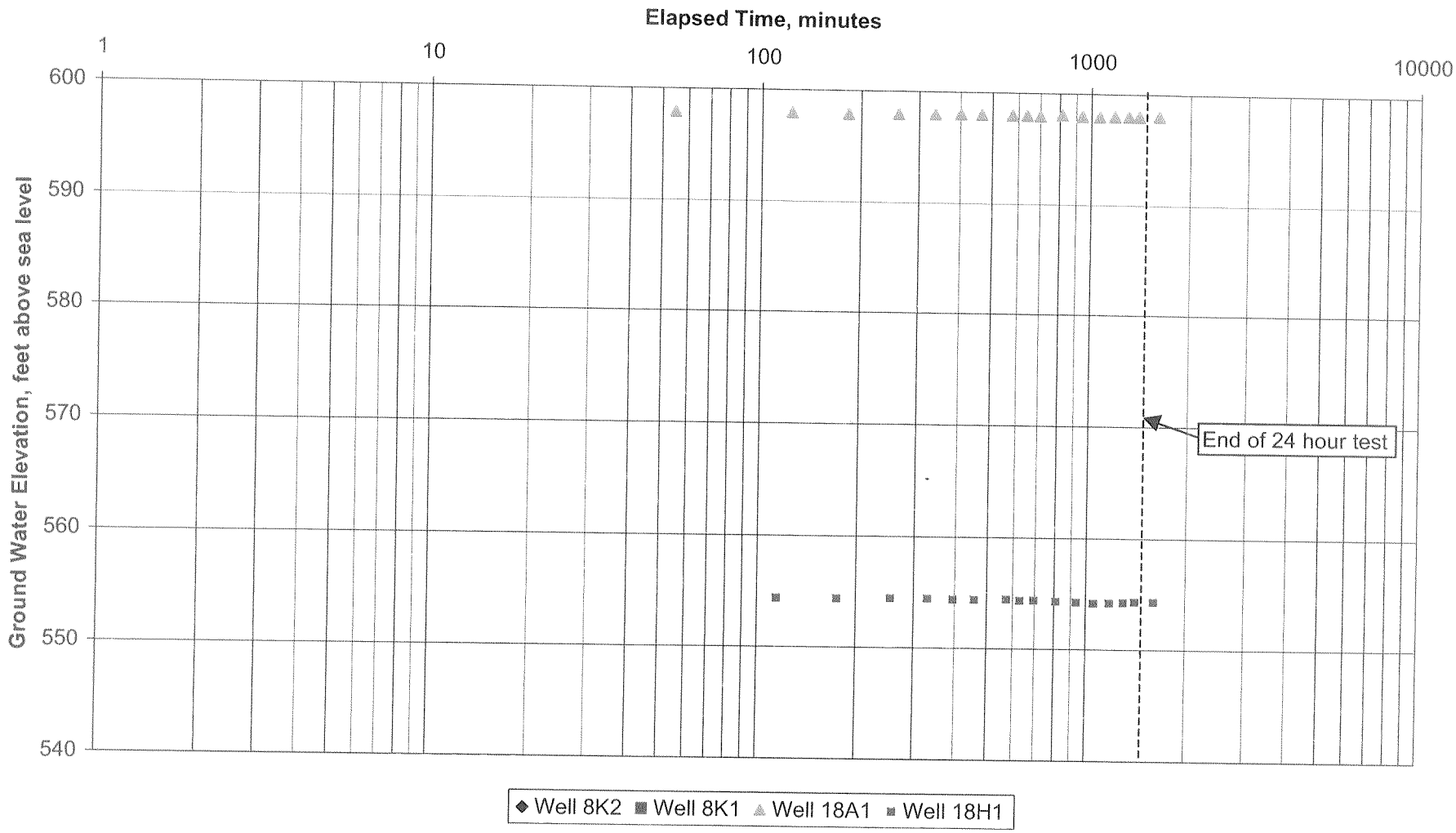
Pumping Test (24 hour) - Northern Well, San Miguel Ranch
April 29 to 30, 2006
Observation Wells 18A1 & 18H1



Pumping Test (24 hour) - Northern Well, San Miguel Ranch
April 29 to 30, 2006
Observation Wells



Pumping Test (24 hour) - Northern Well, San Miguel Ranch
April 29 to 30, 2006
Observation Wells



Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

18H1			18A1			8K2			8K1		
Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water
15:10	-1100	252.60	15:15	-1095	140.05	14:30	-1140	85.26	14:35	-1135	80.35
8:43	-47	252.58	8:55	-35	140.13	7:55	-95	84.55	7:48	-102	80.3
11:25	115	252.6	10:25	55	140.1	9:51	21	84.55	10:00	30	80.21
12:25	175	252.59	11:34	124	140.09	10:07	37	84.67	11:11	101	80.1
13:45	255	252.56	12:34	184	140.12	11:04	94	85.11	12:10	160	80.11
15:00	330	252.55	13:51	261	140.08	11:45	135	85.39	13:18	228	80.08
16:05	395	252.6	15:06	336	140.02	12:14	164	85.56	15:43	373	80.16
17:09	459	252.63	16:13	403	139.98	13:30	240	85.98	16:56	446	80.19
19:04	574	252.58	17:15	465	140	14:05	275	86.15	18:50	560	80.25
20:00	630	252.68	19:08	578	140.01	14:46	316	86.33	19:45	615	80.27
21:05	695	252.62	20:10	640	140.02	15:51	381	86.61	20:50	680	80.3
23:00	810	252.71	21:10	700	140.05	16:45	435	86.81	22:50	800	80.38
1:05	935	252.74	23:05	815	139.93	17:50	500	87.02	0:50	920	80.43
3:05	1055	252.83	1:10	940	140.03	18:45	555	87.21	2:50	1040	80.48
5:05	1175	252.8	3:10	1060	140.05	19:40	610	87.37	4:50	1160	80.53
7:07	1297	252.73	5:10	1180	140.02	20:45	675	87.55	6:45	1275	80.55
8:55	1405	252.72	7:14	1304	140.03	21:45	735	87.72	8:15	1365	80.58
12:10	1600	252.69	8:50	1400	140.01	22:45	795	87.87	9:22	1432	80.61
			12:16	1606	139.98	23:45	855	88.05	11:03	1533	80.75
						0:45	915	88.2	12:50	1640	80.78
						1:45	975	88.34			
						2:45	1035	88.48			
						3:45	1095	88.61			
						4:45	1155	88.74			
						5:45	1215	88.86			
						6:55	1285	89.00			
						8:25	1375	89.13			
						9:14	1424	89.23			
						9:40	1450	89.28			
						9:45	1455	89.30			
						9:50	1460	89.30			
						9:55	1465	89.30			
						10:00	1470	89.29			
						10:03	1473	89.27			
						10:05	1475	89.27			
						10:09	1479	89.25			
						10:12	1482	89.23			
						10:15	1485	89.22			
						10:20	1490	89.19			
						10:25	1495	89.17			
						10:30	1500	89.14			
						10:37	1507	89.09			
						10:45	1515	89.05			
						10:55	1525	88.99			
						11:11	1541	88.89			
						11:20	1550	88.85			

Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

18H1			18A1			8K2			8K1		
Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water	Time	Elapsed Time (minutes)	Depth to Water
15:10	-1100	252.60	15:15	-1095	140.05	14:30	-1140	85.26	14:35	-1135	80.35
8:43	-47	252.58	8:55	-35	140.13	7:55	-95	84.55	7:48	-102	80.3
11:25	115	252.6	10:25	55	140.1	9:51	21	84.55	10:00	30	80.21
12:25	175	252.59	11:34	124	140.09	10:07	37	84.67	11:11	101	80.1
13:45	255	252.56	12:34	184	140.12	11:04	94	85.11	12:10	160	80.11
15:00	330	252.55	13:51	261	140.08	11:45	135	85.39	13:18	228	80.08
16:05	395	252.6	15:06	336	140.02	12:14	164	85.56	15:43	373	80.16
17:09	459	252.63	16:13	403	139.98	13:30	240	85.98	16:56	446	80.19
19:04	574	252.58	17:15	465	140	14:05	275	86.15	18:50	560	80.25
20:00	630	252.68	19:08	578	140.01	14:46	316	86.33	19:45	615	80.27
21:05	695	252.62	20:10	640	140.02	15:51	381	86.61	20:50	680	80.3
23:00	810	252.71	21:10	700	140.05	16:45	435	86.81	22:50	800	80.38
1:05	935	252.74	23:05	815	139.93	17:50	500	87.02	0:50	920	80.43
3:05	1055	252.83	1:10	940	140.03	18:45	555	87.21	2:50	1040	80.48
5:05	1175	252.8	3:10	1060	140.05	19:40	610	87.37	4:50	1160	80.53
7:07	1297	252.73	5:10	1180	140.02	20:45	675	87.55	6:45	1275	80.55
8:55	1405	252.72	7:14	1304	140.03	21:45	735	87.72	8:15	1365	80.58
12:10	1600	252.69	8:50	1400	140.01	22:45	795	87.87	9:22	1432	80.61
			12:16	1606	139.98	23:45	855	88.05	11:03	1533	80.75
						0:45	915	88.2	12:50	1640	80.78
						1:45	975	88.34			
						2:45	1035	88.48			
						3:45	1095	88.61			
						4:45	1155	88.74			
						5:45	1215	88.86			
						6:55	1285	89.00			
						8:25	1375	89.13			
						9:14	1424	89.23			
						9:40	1450	89.28			
						9:45	1455	89.30			
						9:50	1460	89.30			
						9:55	1465	89.30			
						10:00	1470	89.29			
						10:03	1473	89.27			
						10:05	1475	89.27			
						10:09	1479	89.25			
						10:12	1482	89.23			
						10:15	1485	89.22			
						10:20	1490	89.19			
						10:25	1495	89.17			
						10:30	1500	89.14			
						10:37	1507	89.09			
						10:45	1515	89.05			
						10:55	1525	88.99			
						11:11	1541	88.89			
						11:20	1550	88.85			

Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

Well 18H1					Well 18A1				
Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation	Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation
15:10	-1100	252.60	807	554.40	15:15	-1095	140.05	738	597.95
8:43	-47	252.58	807	554.42	8:55	-35	140.13	738	597.87
11:25	115	252.6	807	554.40	10:25	55	140.1	738	597.90
12:25	175	252.59	807	554.41	11:34	124	140.09	738	597.91
13:45	255	252.56	807	554.44	12:34	184	140.12	738	597.88
15:00	330	252.55	807	554.45	13:51	261	140.08	738	597.92
16:05	395	252.6	807	554.40	15:06	336	140.02	738	597.98
17:09	459	252.63	807	554.37	16:13	403	139.98	738	598.02
19:04	574	252.58	807	554.42	17:15	465	140	738	598.00
20:00	630	252.68	807	554.32	19:08	578	140.01	738	597.99
21:05	695	252.62	807	554.38	20:10	640	140.02	738	597.98
23:00	810	252.71	807	554.29	21:10	700	140.05	738	597.95
1:05	935	252.74	807	554.26	23:05	815	139.93	738	598.07
3:05	1055	252.83	807	554.17	1:10	940	140.03	738	597.97
5:05	1175	252.8	807	554.20	3:10	1060	140.05	738	597.95
7:07	1297	252.73	807	554.27	5:10	1180	140.02	738	597.98
8:55	1405	252.72	807	554.28	7:14	1304	140.03	738	597.97
12:10	1600	252.69	807	554.31	8:50	1400	140.01	738	597.99
					12:16	1606	139.98	738	598.02

Pump on at North Well **9:30 AM, 4/29/06** Pump Off at North Well **9:40 AM, 4/30/06**

All depths are in feet.

Pumping Test (24 hour) - Northern Well, San Miguel Ranch
Observation Wells

Well 8K2					Well 8K1				
Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation	Time	Elapsed Time (minutes)	Depth to Water	Reference point elevation	Ground water elevation
14:30	-1140	85.26	635	549.74	14:35	-1135	80.35	655	574.65
7:55	-95	84.55	635	550.45	7:48	-102	80.3	655	574.70
9:51	21	84.55	635	550.45	10:00	30	80.21	655	574.79
10:07	37	84.67	635	550.33	11:11	101	80.1	655	574.90
11:04	94	85.11	635	549.89	12:10	160	80.11	655	574.89
11:45	135	85.39	635	549.61	13:18	228	80.08	655	574.92
12:14	164	85.56	635	549.44	15:43	373	80.16	655	574.84
13:30	240	85.98	635	549.02	16:56	446	80.19	655	574.81
14:05	275	86.15	635	548.85	18:50	560	80.25	655	574.75
14:46	316	86.33	635	548.67	19:45	615	80.27	655	574.73
15:51	381	86.61	635	548.39	20:50	680	80.3	655	574.70
16:45	435	86.81	635	548.19	22:50	800	80.38	655	574.62
17:50	500	87.02	635	547.98	0:50	920	80.43	655	574.57
18:45	555	87.21	635	547.79	2:50	1040	80.48	655	574.52
19:40	610	87.37	635	547.63	4:50	1160	80.53	655	574.47
20:45	675	87.55	635	547.45	6:45	1275	80.55	655	574.45
21:45	735	87.72	635	547.28	8:15	1365	80.58	655	574.42
22:45	795	87.87	635	547.13	9:22	1432	80.61	655	574.39
23:45	855	88.05	635	546.95	11:03	1533	80.75	655	574.25
0:45	915	88.2	635	546.80	12:50	1640	80.78	655	574.22
1:45	975	88.34	635	546.66					
2:45	1035	88.48	635	546.52					
3:45	1095	88.61	635	546.39					
4:45	1155	88.74	635	546.26					
5:45	1215	88.86	635	546.14					
6:55	1285	89.00	635	546.00					
8:25	1375	89.13	635	545.87					
9:14	1424	89.23	635	545.77					
9:40	1450	89.28	635	545.72					
9:45	1455	89.30	635	545.70					
9:50	1460	89.30	635	545.70					
9:55	1465	89.30	635	545.70					
10:00	1470	89.29	635	545.71					
10:03	1473	89.27	635	545.73					
10:05	1475	89.27	635	545.73					
10:09	1479	89.25	635	545.75					
10:12	1482	89.23	635	545.77					
10:15	1485	89.22	635	545.78					
10:20	1490	89.19	635	545.81					
10:25	1495	89.17	635	545.83					
10:30	1500	89.14	635	545.86					
10:37	1507	89.09	635	545.91					
10:45	1515	89.05	635	545.95					
10:55	1525	88.99	635	546.01					
11:11	1541	88.89	635	546.11					
11:20	1550	88.85	635	546.15					

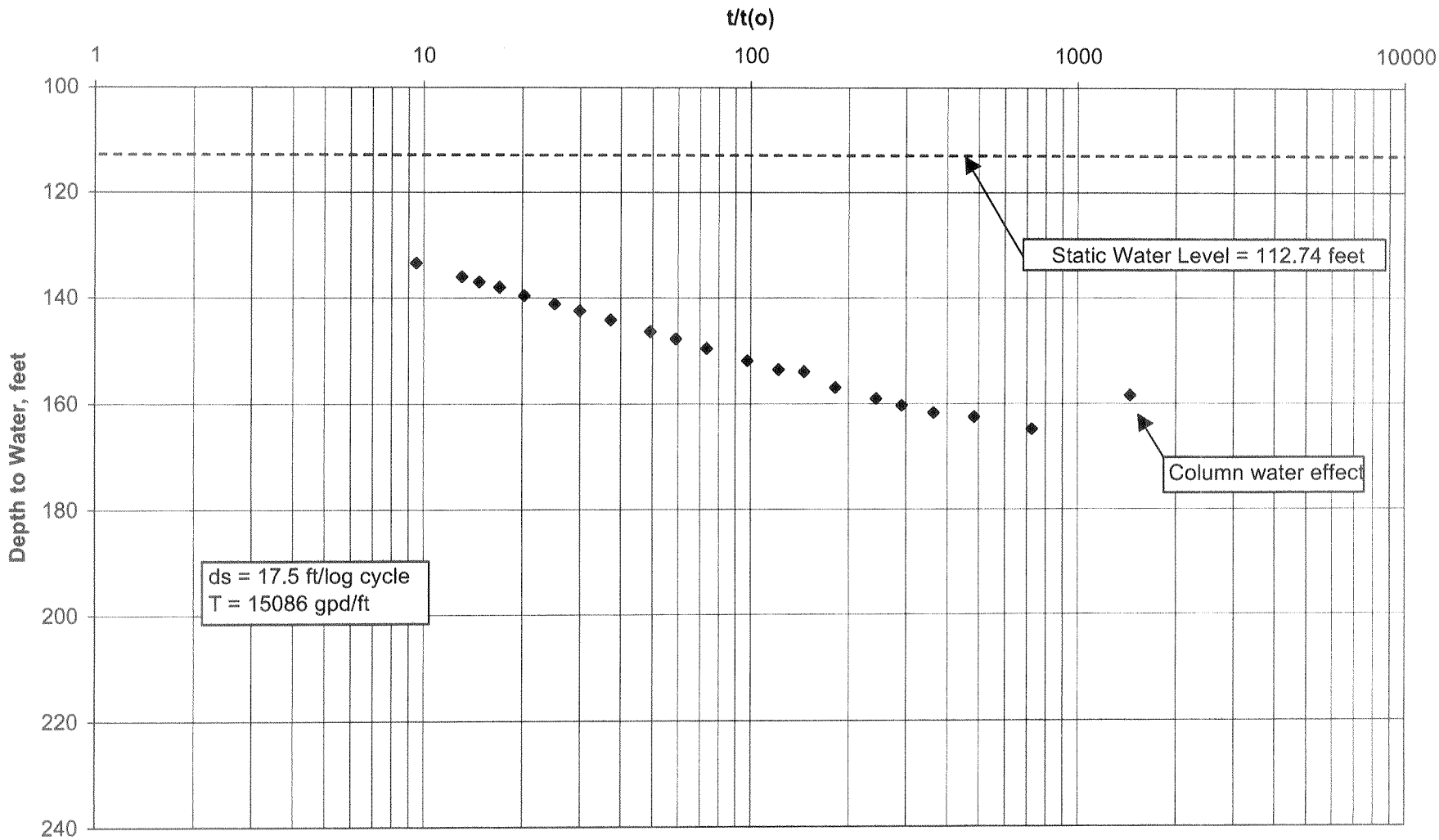
Pumping Test (24 hour), Northern Well, San Miguel Ranch, April 29 to 30, 2006

Day Mo./Day/Yr	Time hr:min	Elapsed Time minutes	Depth to Water feet	Drawdown feet	Recorded Pumping Rate gallons per minute	Meter Reading gallons
4/29/2006	9:30	0	112.74	0	Start	12205800
	9:31	1	164.83	52.09	971	--
	9:32	2	172.14	59.40	971	--
	9:33	3	179.26	66.52	971	--
	9:34	4	181.83	69.09	971	--
	9:35	5	183.57	70.83	971	--
	9:36	6	185.02	72.28	971	12212600
	9:38	8	187.22	74.48	1000	12213600
	9:40	10	188.98	76.24	1000	12216600
	9:42	12	190.34	77.60	1050	12218700
	9:45	15	195.07	82.33	1033	12221800
	9:50	20	200.13	87.39	1060	12227100
	9:55	25	202.11	89.37	1060	12232400
	10:00	30	203.57	90.83	1060	12237700
	10:10	40	206.79	94.05	1060	12248300
	10:20	50	207.79	95.05	1060	12258900
	10:30	60	208.58	95.84	1040	12269300
	10:45	75	208.91	96.17	1007	12284400
	11:00	90	209.76	97.02	1040	12300000
	11:15	105	210.79	98.05	1020	12315300
	11:30	120	211.67	98.93	1013	12330500
	12:00	150	212.89	100.15	1010	12360800
	12:30	180	214.21	101.47	1007	12391000
	13:30	240	216.01	103.27	1003	12451200
	14:30	300	217.65	104.91	995	12511900
	15:30	360	219.71	106.97	998	12571800
	16:30	420	221.02	108.28	999	12631750
	17:30	480	221.50	108.76	993	12691300
	18:30	540	222.18	109.44	984	12750350
	19:30	600	223.31	110.57	984	12809400
	20:30	660	223.74	111.00	983	12868350
	21:30	720	223.91	111.17	979	12927100
	22:30	780	225.19	112.45	981	12985950
	23:30	840	225.74	113.00	980	13044750
4/30/2006	0:30	900	226.32	113.58	978	13103400
	1:30	960	230.64	117.90	1011	13164050
	2:30	1020	231.18	118.44	1012	13224750
	3:30	1080	232.07	119.33	1011	13285400
	4:30	1140	232.21	119.47	1007	13345800
	5:30	1200	232.79	120.05	1003	13405950
	6:30	1260	233.92	121.18	1008	13467450
	7:30	1320	234.32	121.58	1009	13528000
	8:30	1380	234.74	122.00	1009	13587530
	9:30	1440	235.21	122.47	--	--
	9:40	1450	235.41	122.67	1006	13655950
	STOP					1000 gpm average

Day Mo./Day/Yr	Time hr:min	Elapsed Time minutes	Depth to Water feet	Elapsed Time minutes	Recovery Time Ratio t/t(0)
Recovery		t	s	t(0)	t/t(0)
4/30/2006	9:41	1451	158.42	1	1451
	9:42	1452	164.75	2	726
	9:43	1453	162.52	3	484
	9:44	1454	161.73	4	364
	9:45	1455	160.34	5	291
	9:46	1456	159.07	6	243
	9:48	1458	156.89	8	182
	9:50	1460	154.00	10	146
	9:52	1462	153.55	12	122
	9:55	1465	151.87	15	98
	10:00	1470	149.62	20	74
	10:05	1475	147.76	25	59
	10:10	1480	146.41	30	49
	10:20	1490	144.23	40	37
	10:30	1500	142.55	50	30
	10:40	1510	141.27	60	25
	10:55	1525	139.61	75	20
	11:10	1540	138.09	90	17
	11:25	1555	137.08	105	15
	11:40	1570	136.02	120	13
	12:30	1620	133.46	170	10

minutes	meter	flow rate	
0	12205800		
7	12212600	971	
8	12213600	1000	
11	12216600	1000	
13	12218700	1050	
16	12221800	1033	
21	12227100	1060	
26	12232400	1060	
31	12237700	1060	
41	12248300	1060	
51	12258900	1060	
61	12269300	1040	
76	12284400	1007	
91	12300000	1040	
106	12315300	1020	
121	12330500	1013	
151	12360800	1010	
181	12391000	1007	
241	12451200	1003	
302	12511900	995	
362	12571800	998	
422	12631750	999	
482	12691300	993	
542	12750350	984	
602	12809400	984	
662	12868350	983	
722	12927100	979	
782	12985950	981	
842	13044750	980	
902	13103400	978	
962	13164050	1011	incrs 50 rpm
1022	13224750	1012	
1082	13285400	1011	
1142	13345800	1007	
1202	13405950	1003	
1263	13467450	1008	
1323	13528000	1009	
1382	13587530	1009	
1450	13655950	1006	

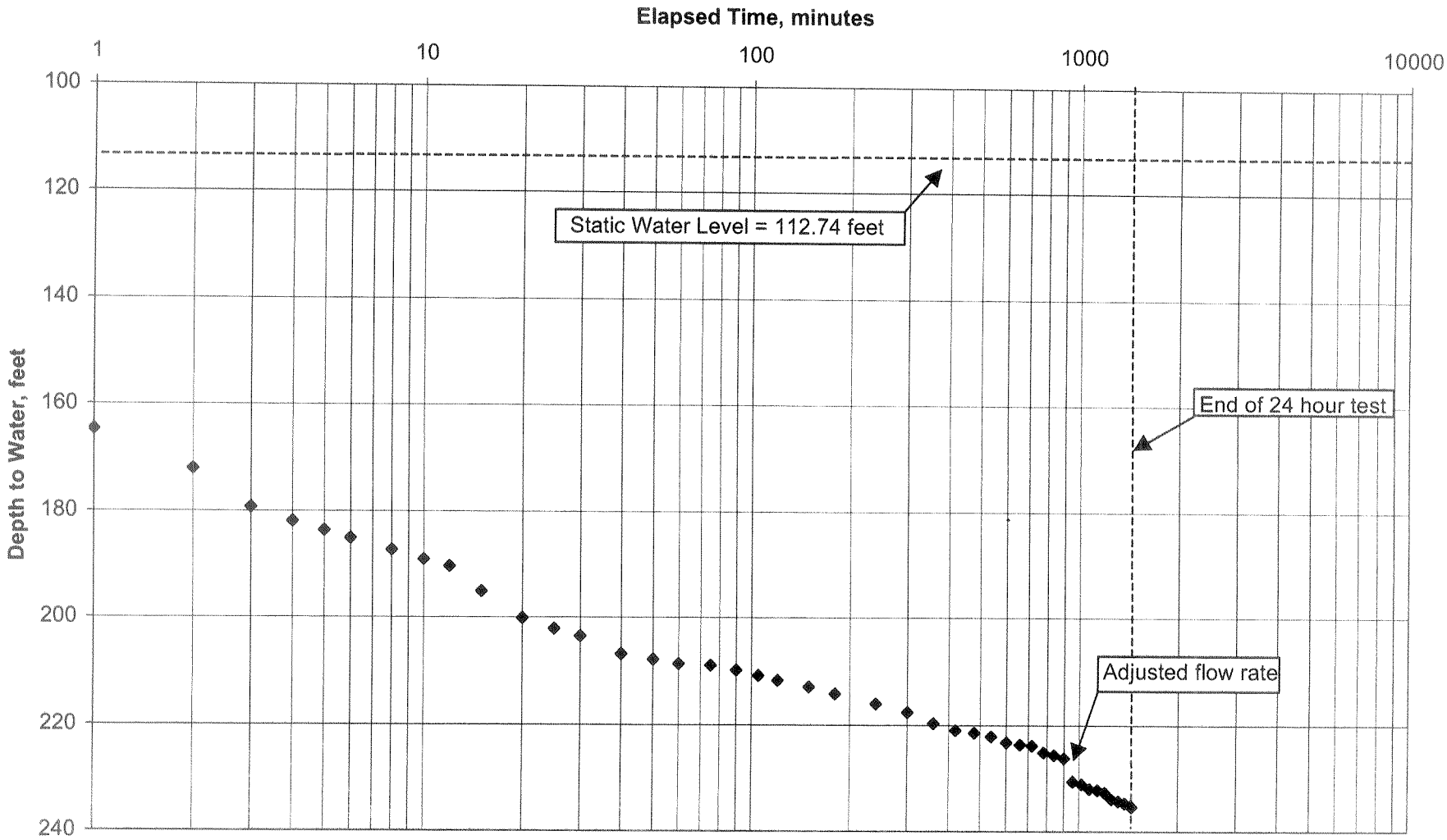
Recovery Test - Northern Well, San Miguel Ranch
April 30, 2006
Depth to Static Water Level: 112.74 feet



Pumping Test (24 hour) - Northern Well, San Miguel Ranch
March 29 to 30, 2006

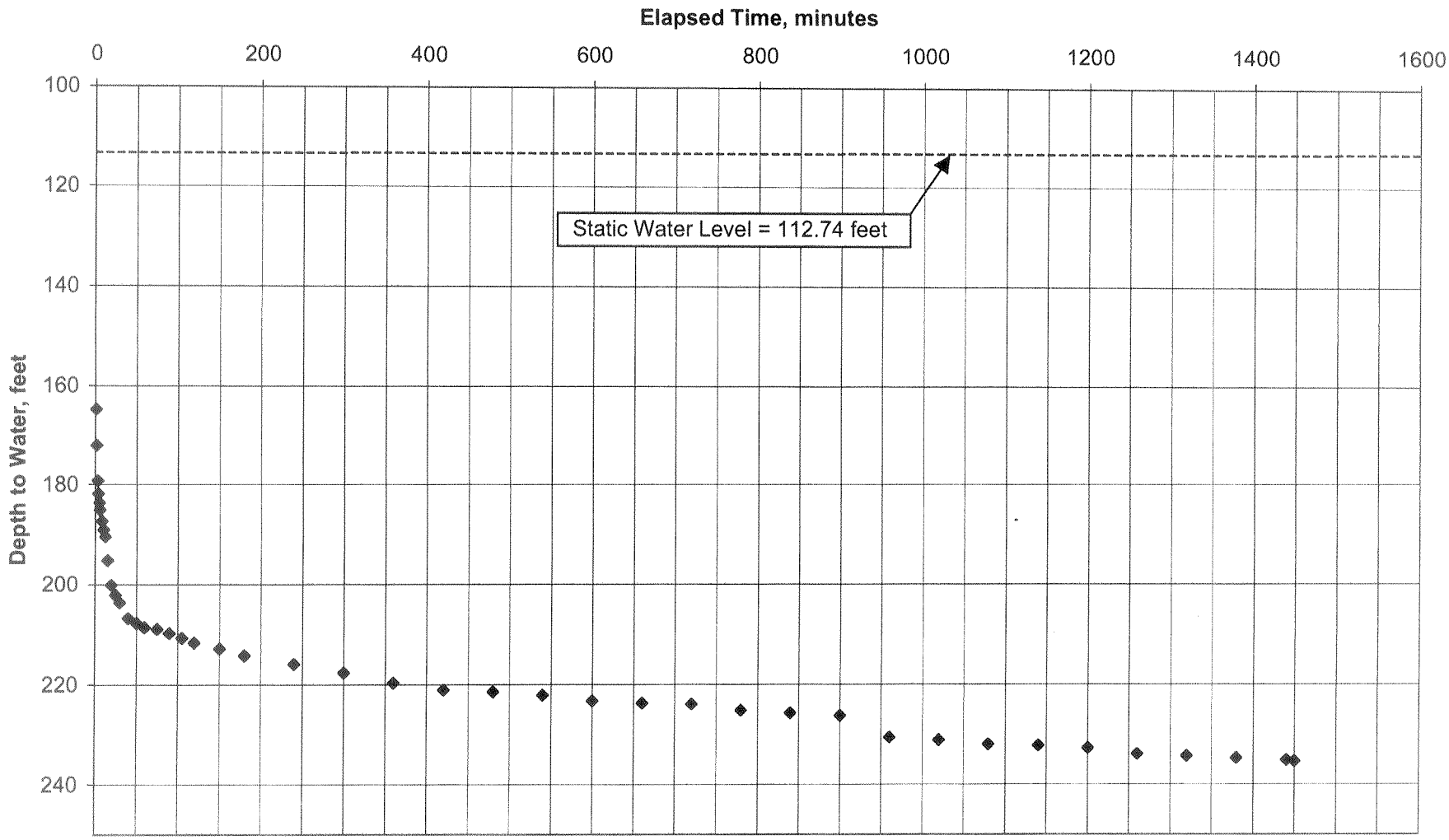
Depth to Static Water Level: 112.74 feet

Ave Pumping Rate: 1,000 gpm

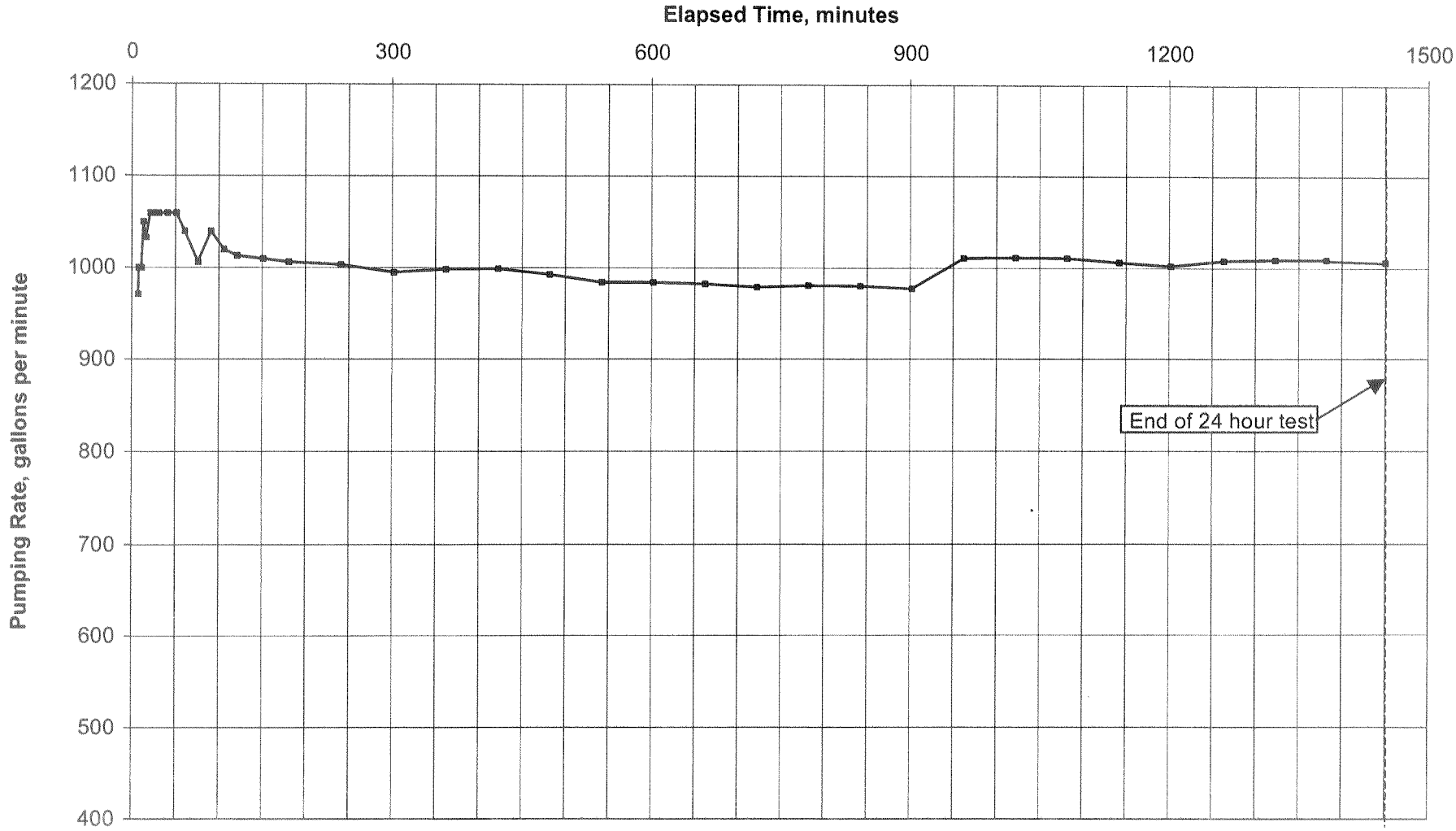


Pumping Test (24 hour) - Northern Well
April 29 to 30, 2006

Depth to Static Water Level: 112.74 feet **Ave Pumping Rate: 1,000 gpm**



Pumping Test (24 hour) - Northern Well, San Miguel Ranch
April 29 to 30, 2006
Average Pumping Rate: 1,000 gpm



APPENDIX D
SAN MIGUEL CSD PRODUCTION DATA

WW1 San Miguel
Production vs. Consumption
Table

Date	Well 3 Production	Well 4 Production	Total Production	Consumption	% of Production
Oct-98	3,222,000	2,513,900	5,735,900		
Nov-98	2,489,000	2,256,300	4,745,300	11,359,876	108%
Dec-98	2,162,000	1,963,300	4,125,300		
Jan-99	2,068,000	2,299,600	4,367,600	7,091,040	83%
Feb-99	1,614,000	1,424,600	3,038,600		
Mar-99	3,178,000	740,520	3,918,520	6,168,008	89%
Apr-99	2,381,000	2,575,900	4,956,900		
May-99	2,433,000	6,063,000	8,496,000	8,657,352	64%
Jun-99	3,510,000	5,555,600	9,065,600		
Jul-99	4,795,000	5,287,500	10,082,500	16,729,768	87%
Aug-99	5,151,000	4,915,700	10,066,700		
Sep-99	3,343,000	4,782,000	8,125,000	18,188,368	100%
Oct-99	3,629,000	3,518,700	7,147,700		
Nov-99	2,171,000	2,645,600	4,816,600	13,701,116	115%
Dec-99	1,476,000	2,890,800	4,366,800		
Jan-00	941,000	3,191,700	4,132,700	7,353,588	87%
Feb-00			0		
Mar-00			0		#DIV/0!
Totals					
1-99 to 1-00	**38,852,000**	**47,854,520**	**86,706,520**	**77,889,240**	**90%**

Return To: San Luis Obispo County
Flood Control & Water Conservation District
County Government Center, San Luis Obispo, 93408

San Miguel
Agency

COPY

WATER USAGE FOR 2000-01 SEASON

Note: Shaded areas are for county use. For "units", please indicate whether AF, CCF, MG, CUFT, GAL, etc.

Record for Month of	Gross Production (Total to System)	Units		Net Production (Passing Meter Service)	Units HCF	
Jul 2000	24,953.	HCF		21,324		
Aug 2000						
Sep 2000	22,855.	HCF		22,739		
Oct 2000						
Nov 2000	15,170.	HCF		15,553		
Dec 2000						
Jan 2001	11,741.	HCF		10,768		
Feb 2001						
Mar 2001	11,208	HCF		9,064		
Apr 2001						
May 2001	20,017.	HCF		13,035		
Jun 2001						
TOTAL	105,944			92,483		

Number of Service Connections as of June 30, 2001	Residential		Non-Residential	
	Metered	Flat Rate	Metered	Flat Rate
	399		28	

Contributions to Gross Production from All Sources of Supply		
	Reservoir	AF
	Groundwater Basin	AF
	Appropriated/Riparian Underflow	AF
	Reclaimed Water	AF
	Other:	

Number and Capacity of Production Wells	Wells in Groundwater Basin		Wells in Riparian Underflow	
	Nmbr of Wells	Capacity (GPM)	Nmbr of Wells	Capacity (GPM)

Planned Additions to Supply: Project Description	Estimated Added Capacity	Estimated Year of Completion

X
Name of person completing form

Phone

no longer a county system

San Miguel CSD

Water Usage For 02/03 Season.

Month	Gross Production	Units	Net Production	Units
Jul. 02	26,786.	HCF	21,622.	HCF
Aug. 02				
Sep. 02	24744.	HCF	24939.	HCF
Oct. 02				
Nov. 02	15332.89	HCF		
Dec. 02				
Jan. 03	10,818.97	HCF		
Feb. 03				
Mar. 03	10,861.49	HCF		
Apr. 03				
May. 03	16,741.17	HCF		
Jun. 03				

Number of Service Connections as of June / 2003.	Residential	Non-Residential
	433	38

San Miguel CSD

Water Usage For 03/04 Season.

Month	Gross Production	Units	Net Production	Units
Jul. 03	31,280.47	HCF		
Aug. ____				
Sep. 03	27,795.99	HCF		
Oct. ____				
Nov. 03	16,329.27	HCF		
Dec. ____				
Jan. 04	12,129.67	HCF		
Feb. ____				
Mar. 04	12,677.13	HCF		
Apr. ____				
May. 04	21,047.85	HCF		
Jun. ____				

Number of Service Connections as of June 1 2004.	Residential	Non-Residential

San Miguel CSD

Water Usage For 03/04 Season.

Month	Gross Production	Units	Net Production	Units
Jul. 03	31,280.47	HCF		
Aug. 03				
Sep. 03				
Oct. 03				
Nov. 03				
Dec. 03				
Jan. 04				
Feb. 04				
Mar. 04				
Apr. 04				
May. 04				
Jun. 04				

Number of Service Connections as of June 1 2004.	Residential	Non-Residential

San Miguel CSD

Water Usage For 04/05 Season.

Month	Gross Production	Units	Net Production	Units
Jul. 04	25,878.33	HCF		
Aug. ____				
Sep. 04	28,200.12	HCF		
Oct. ____				
Nov. 04	14,515.77	HCF		
Dec. ____				
Jan. 05	11,549.86	HCF		
Feb. ____				
Mar. 05	12,191.04	HCF		
Apr. ____				
May. 05	22,253.73	HCF		
Jun. ____				

Number of Service Connections as of _____/_____.	Residential	Non-Residential

San Miguel CSD

Water Usage For _____ Season.

Month	Gross Production	Units	Net Production	Units
Jul. 05	34,218.85	HCF		
Aug. ____				
Sep. 05	32,541.31	HCF		
Oct. ____				
Nov. 05	22,529.40	HCF		
Dec. ____				
Jan. 06	15,329.13	HCF		
Feb. ____				
Mar. 06	15,098.92	HCF		
Apr. ____				
May. 06	23,411.91	HCF		
Jun. ____				

Number of Service Connections as of _____/_____.	Residential	Non-Residential

San Miguel CSD

Water Usage For 2006/2007 Season.

Month	Gross Production	Units	Net Production	Units
Jul. 2006	26,166.32	HCF		
Aug. ____				
Sep. 2006	35,951.88	HCF		
Oct. ____				
Nov. 2006	22,929.15	HCF		
Dec. ____				
Jan. 2007	16,977.68	HCF		
Feb. ____				
Mar. ____				
Apr. ____				
May. ____				
Jun. ____				

Number of Service Connections as of _____/_____.	Residential	Non-Residential

APPENDIX E
SITE PHOTOGRAPHS

PHOTO 1: NORTH WELL

PHOTO 2: SITE OVERVIEW

SITE PHOTOGRAPHS
Proposed San Miguel Ranch Development
San Luis Obispo County, California

PHOTO 3: SITE OVERVIEW

PHOTO 4: SITE OVERVIEW

SITE PHOTOGRAPHS
Proposed San Miguel Ranch Development
San Luis Obispo County, California

PHOTO 5: SITE OVERVIEW

PHOTO 6: SOUTH WELL

SITE PHOTOGRAPHS
Proposed San Miguel Ranch Development
San Luis Obispo County, California