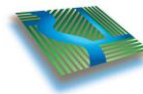




Monitoring Network Assessment Report

Prepared for
**County of Colusa and
County of Glenn**

May 2018



DAVIDS
ENGINEERING, INC

WEST YOST

ASSOCIATES
Consulting Engineers

277-16-16-06



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Monitoring Network Assessment Report

Prepared for

The County of Colusa and County of Glenn

Project No. 277-16-16-06



Prepared by:
Anna Reimer

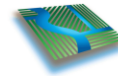
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Reviewed by:
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7/18/18

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List of Acronyms and Abbreviations

BMO	Basin Management Objective
BMP	Best Management Practices
Caltrans	California Department of Transportation
CASGEM	California's Statewide Groundwater Elevation Monitoring Program
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
DDW	Division of Drinking Water
DQO	Data Quality Objective
DTSC	Department of Toxic Substances Control
DTW	Depth to Water
DWR	Department of Water Resources
EC	Electrical Conductivity
GAMA	Groundwater Ambient Monitoring and Assessment
GAR	Groundwater Quality Assessment Report
GCID	Glenn-Colusa Irrigation District

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GMP	Groundwater Management Plan
GPS	Global Positioning System
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWE	Groundwater Elevation
ILRP	Irrigated Lands Regulatory Program
InSAR	Interferometric Synthetic Aperture Radar
maf	Million Acre-Feet
JPL	Jet Propulsion Laboratory
Monitoring Network BMP	Monitoring Network and Identification of Data Gaps Best Management Practices
Monitoring Protocols BMP	Monitoring Protocols, Standards, and Sites Best Management Practices
NAD 83	North American Datum of 1983
NASA	National Aeronautics and Space Administration
NAVD 88	North American Vertical Datum of 1988
NCWA	Northern California Water Association
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
NWIS	National Water Information System
PCE	Tetrachloroethylene
RD 108	Reclamation District No. 108
RPE	Reference Point Elevation
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
µg/L	Microgram per Liter
USBR	U.S. Bureau of Reclamation
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
WDL	Water Data Library

EXECUTIVE SUMMARY

The Sustainable Groundwater Management Act (SGMA) requires groundwater basins of medium or higher priority that are not designated to be in critical overdraft to reach sustainability by 2042. Establishing monitoring networks for data collection in support of the six indicators of sustainability is critical to understanding the current conditions of the groundwater basin and surrounding area and to monitor effects of implemented groundwater projects with regard to basin objectives. The six sustainability indicators are:

1. Chronic lowering of groundwater levels;
2. Reduction in groundwater storage;
3. Seawater intrusion;
4. Degradation of groundwater quality;
5. Land subsidence; and
6. Depletion of interconnected surface waters.

This report provides an evaluation of the existing monitoring networks and programs in the portions of the Sacramento Valley Groundwater Basin that are overlain by the Counties of Colusa and Glenn. The groundwater subbasins that comprise the Sacramento Valley Groundwater Basin within Colusa and Glenn Counties include the entirety of the Colusa Subbasin and portions of the Corning and West Butte Subbasins. Existing groundwater level, groundwater quality, land subsidence, and surface water monitoring programs were evaluated using criteria listed in the California Department of Water Resources (DWR) SGMA Groundwater Sustainability Plan (GSP) Regulations and DWR's Best Management Practices (BMPs) for the Sustainable Management of Groundwater documentation. The networks were evaluated based on the criteria to identify potential data gaps that would limit the sufficiency of the networks to provide representative data for assessing sustainability for five of the six sustainability indicators. The sixth sustainability indicator, seawater intrusion, is neither occurring nor anticipated to occur within the Colusa Subbasin or the portions of the Corning and West Butte Subbasins within the study area. The 2018 Draft Basin Prioritization study by DWR found that the Colusa, Corning, and West Butte Subbasins have not exhibited any impacts of saline intrusion within the past 20 years. Evaluation of seawater intrusion was, therefore, determined unnecessary for the purposes of this study.

In cases where data gaps were identified, existing monitoring locations not currently included in the evaluated monitoring networks were assessed to fill data gaps. If no suitable existing monitoring sites were available, new monitoring sites were recommended for construction.

ES-1 Basin Conditions

A summary of the current basin conditions with regard to groundwater levels, groundwater storage, groundwater quality, land subsidence, and surface waters connected to groundwater is presented in Chapter 2 of this report.

Groundwater Levels. Groundwater within the study area flows predominately eastward from the margins of the Sacramento Valley toward the Sacramento River and southward towards the Sacramento-San Joaquin Delta. Groundwater pumping has led to cones of depression that disrupt the regional groundwater flow trends. Recently, changes in land use and multiple-year droughts

(from 2007 to 2009 and 2012 to 2016) have led to increased groundwater pumping. These changes in groundwater pumping have created new cones of depression and enlarged existing cones of depression. Groundwater levels have recovered somewhat since the most recent multiple-year drought, but impacts from pumping are still evident near and west of the Glenn County communities of Orland and Artois, and in the southern part of the study area near the Colusa County communities of Williams, Arbuckle, and College City.

Groundwater Storage. The potential for groundwater storage to a depth of 200 feet is approximately 14.9 million acre-feet (maf) within the study area. Of this estimated amount, approximately 13 maf is within the Colusa Subbasin (DWR, 2006). Groundwater storage within the study area is probably greater than 14.9 maf, because potable storage extends to the base of freshwater, which is deeper than 200 feet throughout most of the study area.

Groundwater Quality. Groundwater quality concerns include locally elevated salinity, adjusted sodium absorption ratio, nitrate, manganese, and calcium. Salinity concentrations could potentially impact agricultural practices within both counties. Elevated boron within Colusa County has already impacted agricultural practices. Drinking water concerns within Glenn County include nitrate and hexavalent chromium. Drinking water concerns within Colusa County include salinity, iron, manganese, arsenic, and increasing concentrations of pesticides. An existing tetrachloroethylene (PCE) plume near Orland (referred to as the Orland Dry Cleaner site) extends approximately two miles from the source location in Glenn County.

Land Subsidence. Land subsidence has been observed and measured near Arbuckle in Colusa County, and Orland in Glenn County. Benchmark surveys conducted by DWR and county staff indicate a decline in land surface elevation of as much as two feet between 2008 and 2016 at one benchmark north of Arbuckle (Ehorn, 2016). Repeat surveys of benchmarks in Glenn County indicated small amounts of land subsidence southwest of Orland. DWR repeated the survey of all benchmarks in spring 2017, but data from the 2017 repeat survey are not yet available. Preliminary analysis of the repeat survey data suggests that the subsidence occurring near Arbuckle and Orland could be inelastic, or permanent.

Interconnected Surface Water. Connectivity between surface waters and groundwater has not been well established in the study area. Further study, which could include analysis using integrated surface water - groundwater models, and construction and monitoring of nested multiple completion monitoring wells near surface water gages, is needed to better understand the interaction between surface and groundwater.

ES-2 Groundwater Level Monitoring

Existing groundwater level monitoring programs within the study area include the U.S. Geological Survey (USGS) National Water Information System (NWIS) database, DWR Water Data Library (WDL) database, California's Statewide Groundwater Elevation Monitoring Program (CASGEM), and the current groundwater monitoring networks within Colusa and Glenn County. These County-specific networks were evaluated with regard to compliance with the SGMA regulations and BMPs and representativeness of the area in which the well is located. Specifically, the wells were evaluated for availability of well construction information, well type (dedicated for observation or used for water supply), number of completions (monitoring capability in single or multiple, discrete aquifer zones), proximity to surface waters, location, principal aquifers monitored and accessibility.

Data gaps within the county-specific groundwater monitoring well networks were identified using two criteria: reliability of the monitoring site for groundwater monitoring of principal aquifers and spatial distribution of the monitoring locations. The data gaps identified within the groundwater level monitoring network are:

- Four well sites are potentially unusable due to collapsed casing. Three of these four sites are in Colusa County, and one is in Glenn County. Construction information is not available for two of the wells with collapsed casing.
- Three additional wells are active pumping wells and are not screened in a single aquifer. All three of these wells are located in Colusa County.

ES-3 Groundwater Quality Monitoring

Existing groundwater quality monitoring database systems and programs with coverage in the study area include the USGS NWIS database, DWR WDL database, State Water Resources Control Board (SWRCB) Division of Drinking Water public water system database, GeoTracker and the GeoTracker Groundwater Ambient Monitoring and Assessment Program (GAMA), Central Valley Salinity Alternatives for Long-Term Sustainability Program (CV-SALTS), Irrigated Lands Regulatory Program (ILRP), and the Glenn County water quality monitoring network.

The SGMA groundwater quality monitoring network has not yet been formally defined, however, groundwater quality data collected under existing regulatory programs may be sufficient for SGMA compliance. The Sacramento Valley Water Quality Coalition in coordination with Northern California Water Association (NCWA) is currently in the process of defining their groundwater quality trend monitoring network sites for compliance with ILRP requirements. The California Rice Commission, who also manages lands within the study area, has already defined their groundwater quality trend monitoring network for ILRP compliance. The Counties of Colusa and Glenn may consider coordinating with the Sacramento Valley Water Quality Coalition and NCWA during development of the ILRP groundwater quality monitoring network, with the goal of using data collected under the ILRP for SGMA compliance.

ES-4 Seawater Intrusion Monitoring

The study area is located approximately 30 miles from the legal Sacramento-San Joaquin River Delta boundary, and even farther from the brackish delta estuaries. Additionally, the 2018 Draft Basin Prioritization study by DWR found that the Colusa, Corning, and West Butte Subbasins have not exhibited any impacts of saline intrusion within the past 20 years. As such, seawater intrusion is neither occurring nor anticipated to occur within the Colusa Subbasin or the study area portions of the Corning and West Butte Subbasins. Evaluation of existing seawater intrusion programs was, therefore, determined unnecessary for the purposes of this study.

ES-5 Land Subsidence Monitoring

Existing land subsidence monitoring programs and datasets within the study area include satellite-based Interferometric Synthetic Aperture Radar (InSAR) surveys, continuous Global Positioning System (GPS) benchmarks, DWR extensometers, and the Sacramento Valley-Height Modernization Project benchmarks. InSAR survey data are available online, but require processing to be of use in

the study area. The National Aeronautics and Space Administration (NASA) and participating consulting firms have conducted land subsidence studies in the study area using the InSAR data. Data from the continuous GPS stations are available online, however there are only two stations within the study area, both in Colusa County. Neither of the continuous GPS stations are located where significant land subsidence has been historically observed. There are five DWR extensometers within the study area: two in Colusa County and three in Glenn County. The Sacramento Valley Height-Modernization Project benchmarks are located such that the entire study area is well represented, with the exception of the southwestern most portion of the Colusa Subbasin, near the northern extent of the Capay Hills. Repeat surveys of the benchmarks must be done periodically. The last repeat survey was conducted in spring 2017, but the results are not yet publicly available.

Land subsidence has been observed near Orland in Glenn County and Arbuckle in Colusa County. Up to approximately two feet of land subsidence has been measured near Arbuckle based on various studies using InSAR data and County-specific repeat surveys of existing Sacramento Valley benchmarks. There are no extensometers installed in the vicinity of Arbuckle, and the existing benchmarks have been surveyed too infrequently to adequately quantify land subsidence. The DWR report on the 2017 repeat survey is anticipated to provide more insight regarding the permanency of the land subsidence.

ES-6 Surface Water Monitoring

Existing surface water monitoring programs and datasets within the study area include the USGS NWIS database, the DWR WDL, and the California Data Exchange Center (CDEC). The NWIS and WDL contain information regarding stream flows and river stages. The CDEC database contains stream flows and/or river stage data and U.S. Bureau of Reclamation (USBR) reservoir records, including releases, flows, and stage. All of the USGS, DWR, and CDEC stations are included in the surface water monitoring network.

ES-7 Conclusions and Recommendations

Conclusions and recommendations for each of the networks are provided below. These conclusions and recommendations are preliminary and should be reevaluated and updated as the applicable Groundwater Sustainability Agencies (GSAs) progress with preparation and implementation of GSPs for the Sacramento Valley groundwater subbasins underlying Colusa and Glenn Counties, and as new information becomes available.

Groundwater Level Monitoring Network. The current groundwater level monitoring networks were judged to be sufficient for SGMA compliance with several recommended improvements and modifications:

1. Four existing monitoring wells with potentially collapsed casing should be inspected and repaired or properly destroyed, depending on the results of the inspection. No data gaps were identified as a result of the potential loss of one of these wells (Glenn County). Two of the potentially damaged wells could be replaced with a single new recommended multiple completion well near Arbuckle. This new well should be collocated with an extensometer and should be constructed regardless of the status of the two potentially collapsed wells. The fourth well, located north of Williams, should be replaced with an existing groundwater monitoring well, if the collapse is confirmed.

2. Two existing monitoring wells should be added to the Colusa and Glenn County monitoring networks to improve monitoring capability north of Stony Creek within the Corning Subbasin, and west of Williams near the western margin of the Colusa Subbasin.
3. Additional monitoring wells may be needed to provide improved spatial coverage in areas of localized groundwater decline to the west of the Glenn County communities of Orland and Artois, and in the southern part of the study area near the Colusa County communities of Arbuckle and College City.

Groundwater Quality Monitoring Network. Groundwater quality data collected under existing regulatory programs may be sufficient for SGMA compliance. The Sacramento Valley Water Quality Coalition in coordination with NCWA is currently in the process of defining its groundwater quality trend monitoring network sites. The California Rice Commission has already defined their groundwater quality trend monitoring network for ILRP compliance. The Counties of Colusa and Glenn should consider coordinating with the Sacramento Valley Water Quality Coalition, NCWA, and the California Rice Commission in the establishment and ongoing evaluation of these groundwater quality monitoring network sites with the goal of using data collected under the ILRP for SGMA compliance. The Counties of Colusa and Glenn should also consider using groundwater quality data collected through other ongoing regulatory programs, such as the State Water Resources Division of Drinking Water regulation of municipal supplies and County regulation of small public supply systems, for SGMA compliance.

Subsidence Monitoring Network. Land subsidence has been observed in the area around Arbuckle in Colusa County, and additional small amounts of land subsidence have been reported southwest of Orland in Glenn County. A new extensometer should be constructed at the same location as the proposed new multiple completion monitoring well near Arbuckle. Both counties should participate in ongoing subsidence programs such as the Sacramento Valley Height-Modernization Project.

Surface Water Monitoring Network. Both counties should use existing surface water monitoring programs and data to the extent possible for SGMA compliance. The need for additional monitoring should be reevaluated as needed during preparation of GSPs, to support preparation of water budgets and development of numerical flow models. This should be done at a regional scale in cooperation with neighboring subbasins.

1.0 INTRODUCTION

The Sustainable Groundwater Management Act (SGMA) requires groundwater basins of medium or higher priority that are not designated to be in critical overdraft to reach sustainability by 2042. Establishing monitoring networks for data collection in support of the six sustainability indicators is critical to understanding the current conditions of the groundwater basin and surrounding area and to monitor effects of implemented groundwater projects with regard to basin objectives. The six sustainability indicators are:

1. Chronic lowering of groundwater levels;
2. Reduction in groundwater storage;
3. Seawater intrusion;
4. Degradation of groundwater quality;
5. Land subsidence; and
6. Depletion of interconnected surface waters.

This report assesses the adequacy of existing county groundwater monitoring networks to sufficiently support SGMA compliance within the Counties of Colusa and Glenn, identifies potential data gaps in the existing monitoring networks, and makes preliminary recommendations to remedy the data gaps.

Groundwater Sustainability Agencies (GSAs) were established within the Counties of Colusa and Glenn after the grant agreements were executed. The Counties are committed to working with the GSAs to develop Groundwater Sustainability Plans (GSPs) for the subbasins. The GSAs within the Counties are the Colusa Groundwater Authority, the Glenn Groundwater Authority, the Glenn County GSA, Reclamation District 1004, Reclamation District 2106, Western Canal Water District, and the Corning Sub-Basin GSA. The monitoring networks are a compilation of monitoring stations that are located within the regulatory boundaries of these GSAs.

1.1 Authority & Scope

This report was prepared primarily as part of the scope of work defined in the County of Colusa's Proposition 1 Stressed Basins Grant administered by the California Department of Water Resources (DWR) under Grant Agreement #4600011469. Some of the tasks scoped under the County of Colusa grant agreement overlapped with tasks included in the scope of work defined for the County of Glenn's Proposition 1 Stressed Basin Grant (Grant Agreement #4600011470). The Counties of Colusa and Glenn have agreed to conduct cooperative basin-wide SGMA planning. The monitoring network assessment and recommendations listed in this report therefore include coverage of the Sacramento Valley groundwater subbasins within both counties. Costs associated with the work benefitting both counties were divided between the individual grants, while costs directly attributable to a specific county were allocated to the county receiving the benefit of the work.

The scope of work for the County of Colusa grant agreement included three tasks:

1. Assessment of the reliability and representativeness of the current Colusa County groundwater level monitoring network, including identification of data gaps within the network;

2. Assessment of other existing monitoring sites for potential inclusion in the Colusa County groundwater level monitoring network to supplement or replace current network wells; and
3. Assessment of the need for additional groundwater level monitoring wells.

The work included in this report was expanded to include the groundwater level monitoring network within Glenn County and the evaluation of existing groundwater quality, land subsidence, and surface water monitoring networks within both counties.

Tasks defined in the County of Glenn grant agreement that are addressed in this report include the compilation, review, and analysis of data gaps for the existing groundwater and surface water monitoring sites as needed to support development of a water budget and hydrogeologic conceptual model for Glenn County. The Glenn County Preliminary Water Budget Development report was written by Davids Engineering in cooperation with West Yost Associates (Davids Engineering, 2018) and the Hydrogeologic Conceptual Model Report was written by West Yost Associates in cooperation with Davids Engineering (West Yost, 2018).

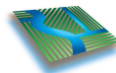
1.2 Report Organization

This report is organized as follows:

- Summary of Current Basin Conditions – Provides a summary description of groundwater levels, groundwater storage, groundwater quality, land subsidence, and interconnected surface waters
- Monitoring Networks – Provides an assessment of the current monitoring networks with regard to requirements defined in Title 23 of the California Code of Regulations (CCR) and DWR's Best Management Practices (BMPs) for the Sustainable Management of Groundwater documentation for each monitoring network, current monitoring protocols and frequencies, and existing available networks, including identification of data gaps
- Conclusions and Recommendations
- References

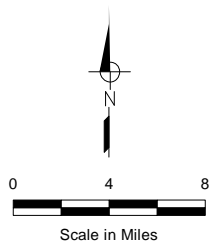
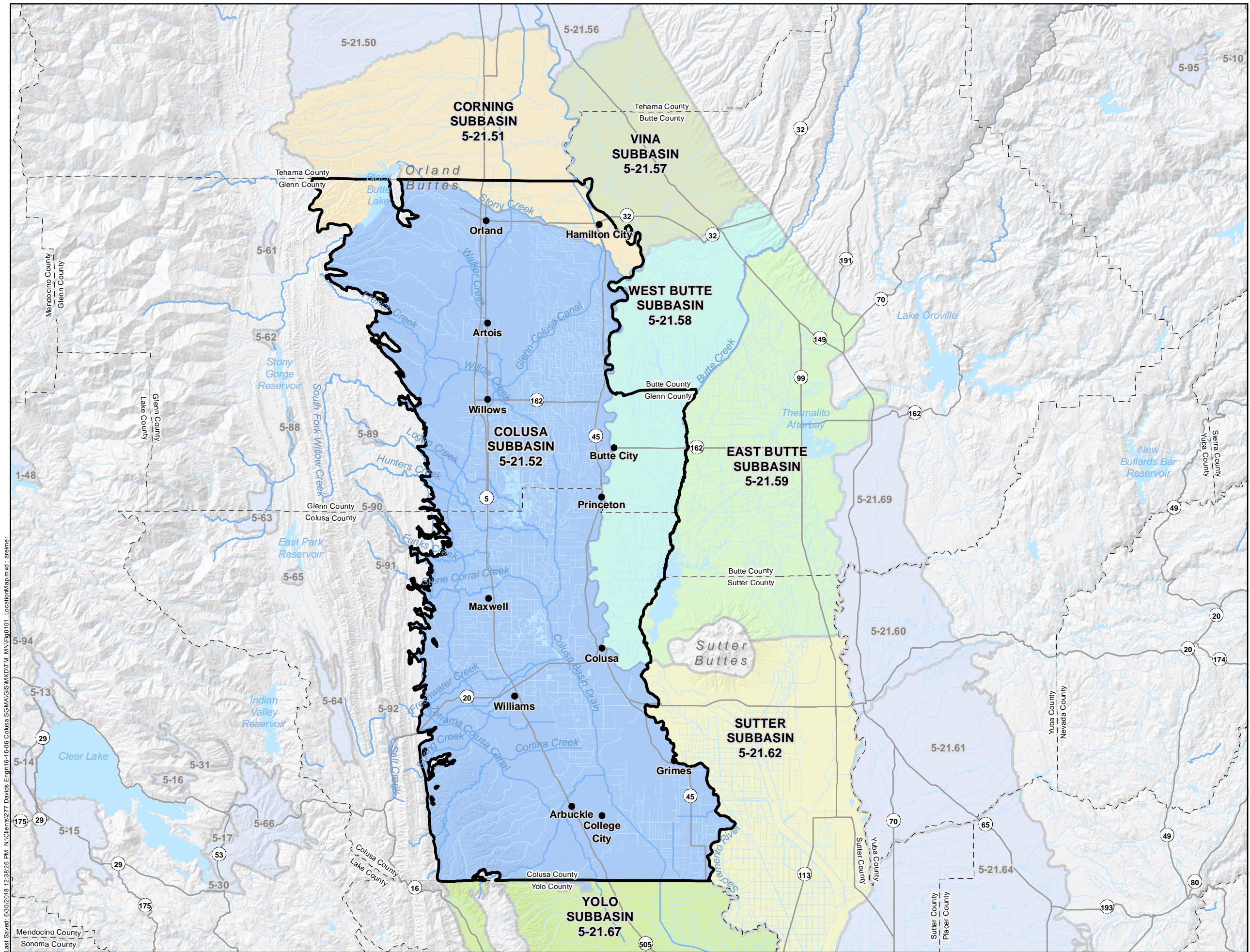
1.3 Study Area

Figure 1-1 shows the study area, which is comprised of the high and medium priority groundwater basins, as defined by DWR within Colusa and Glenn Counties, northern Sacramento Valley, California. The groundwater basins underlying the study area include the entirety of the Colusa Subbasin (5-21.52), the southernmost portions of the Corning Subbasin (5-21.51), and the southern portion of the West Butte Subbasin (5-21.58). Groundwater subbasins adjacent to, but not overlain by the study area, include the Vina Subbasin (5-21.57), East Butte Subbasin (5-21.59), Sutter Subbasin (5-21.62), and Yolo Subbasin (5-21.67). These subbasins are all part of the Sacramento Valley Groundwater Basin (DWR, 2006).



The Counties of Colusa and Glenn encompass approximately 2,500 square miles in north central California, 1,300 square miles of which are within the study area. The Sacramento River bounds the eastern edge of the Colusa Subbasin, and Butte Creek bounds the eastern edge of the West Butte Subbasin. The northern boundary of the West Butte Subbasin within the study area is the Glenn-Butte County line. The western extent of the study area is bounded by the Klamath/North Coast Range, where additional small, low priority groundwater basins are located. The Colusa-Corning Subbasin divide follows the channel of Stony Creek, where it exists south of the Glenn-Tehama County line. The study area includes a large portion of the Black Butte Lake, which marks the boundary between the Corning and Colusa Subbasins. The northern extent of the study area cuts through the Corning Subbasin and is defined by the Glenn-Tehama County line; the southern extent of the study area is defined by the Colusa-Yolo County line.

Primary urban areas within the study area include the incorporated Cities of Orland, Willows, Colusa, and Williams and the communities of Hamilton City, Artois, Butte City, Princeton, Maxwell, Arbuckle, Grimes and College City. Interstate 5 and State Route 45 traverse the study area north to south while State Routes 20, 32, and 162 are the primary west to east thoroughfares.



Symbology

Study Area

Bulletin 118 Groundwater Subbasins Adjacent to the Study Area (DWR, 2016)

- Colusa Subbasin
- Corning Subbasin
- East Butte Subbasin
- Sutter Subbasin
- Vina Subbasin
- West Butte Subbasin
- Yolo Subbasin
- Other Subbasins

Geographical Features

- City
- Major Waterways
- County Boundary

Datum: North American Datum of 1983, California State Plane Zone II, feet.



**Figure 1-1
Location Map**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report

2.0 SUMMARY OF CURRENT BASIN CONDITIONS

2.1 Groundwater Levels

Appendix A1 contains groundwater elevation contour maps for spring and autumn of calendar years 2006, 2015, and 2017 (Figures A1-1 through A1-6). Most of the wells used in contouring have screened depths greater than 100 feet and represent groundwater levels in the semiconfined to confined part of the aquifer system. The groundwater level data from DWR's Water Data Library (WDL) were filtered to include data points that were representative of the seasonal high and low. Where multiple data points coincided spatially, the intermediate/middle depth data was used. Appendix A2 contains hydrographs for wells screened at varying depths throughout the study area (Figures A2-1 through A2-59). Groundwater within the study area flows predominately eastward from the margins of the Sacramento Valley toward the Sacramento River and southward towards the Sacramento-San Joaquin Delta. The regional groundwater flow trends are typified by groundwater conditions in 2006, as shown on Figures A1-1 and A1-2.

Groundwater pumping has led to cones of depression that disrupt the regional groundwater flow trends. Changes in land use and multiple-year droughts (from 2007 to 2009 and 2012 to 2016) have led to increased groundwater pumping. These changes in groundwater pumping have created new cones of depression and enlarged existing cones of depression. Figures A1-3 and A1-4 show the groundwater elevations throughout the study area for spring and summer 2015, which was the culmination of several dry years. As seen on these figures, the regional groundwater gradient and direction were affected by cones of depression in areas of heavy groundwater pumping. Impacts to the regional groundwater flow gradient are most evident near the towns of Artois, Glenn County and Williams, Colusa County.

Groundwater elevations throughout the study area declined over the prolonged dry period after 2006 but recovered somewhat in 2017 (Figures A1-5 and A1-6). Figure 2-1 depicts a groundwater elevation change map that compares spring 2006 to spring 2017 conditions; negative change in groundwater elevation indicates a decrease in the seasonal groundwater elevations from 2006 to 2017, which correlates to an increase in the seasonal depth to water. The primary areas with groundwater declines are in the northwestern part of the study area near and west of the Glenn County communities of Orland and Artois, and in the southern part of the study area near the Colusa County communities of Williams, Arbuckle, and College City (Figure 2-1).

2.2 Groundwater Storage

DWR Bulletin 118 estimates the unconfined to semi-confined groundwater aquifer storage capacity within the Colusa Subbasin to be approximately 13 million acre-feet (maf) (DWR, 2006). Approximately 1.8 maf of storage capacity was estimated within the upper 200 feet of the Corning Subbasin and 2.8 maf within the West Butte Subbasin (of which an approximate 1.9 maf occurs within the Corning and West Butte Subbasins portions of the study area) (DWR, 2004, 2006). The entire study area, including the entire Colusa Subbasin and the portions of the Corning and West Butte Subbasins in the study area, contains approximately 14.9 maf of groundwater storage to a depth of 200 feet.

The potential for groundwater storage is not exclusive to the upper 200 feet of the subsurface material. Fresh groundwater storage extends to the base of freshwater, which occurs at depths greater than 200 feet in most of the study area; the total groundwater storage capacity within the study area is, therefore, greater than 14.9 maf. Additional study of the subsurface is required to quantify the total fresh groundwater storage capacity within the study area.

2.3 Seawater Intrusion

The study area is located approximately 30 miles from the legal Sacramento-San Joaquin River Delta boundary, and even farther from the brackish delta estuaries. Additionally, the 2018 Draft Basin Prioritization study by DWR found that the Colusa, Corning, and West Butte Subbasins have not exhibited any impacts of saline intrusion within the past 20 years. As such, seawater intrusion is neither occurring nor anticipated to occur in the study area.

2.4 Groundwater Quality

The groundwater within the study area is predominantly calcium and magnesium bicarbonate water (DWR, 2004, 2006). Increased sodium content has been observed near the Sutter Buttes, resulting in localized occurrences of mixed sodium bicarbonate waters south of Princeton, near Williams, Colusa, Grimes, and Arbuckle and south towards Yolo County (DWR, 2006).

Historical groundwater quality concerns within the Colusa Subbasin include local elevated levels of electrical conductivity (EC) and total dissolved solids (TDS), adjusted sodium absorption ratio, boron, nitrate, and manganese (DWR, 2006; Wood Rodgers, 2008). In addition to the historical water quality concerns within the Colusa Subbasin, the portions of the Corning and West Butte Subbasins within the study area have also experienced localized elevated calcium concentrations (DWR, 2004, 2006). Groundwater quality data managed by the U.S. Geological Survey (USGS) indicates elevated levels of boron, nitrate, EC, and manganese in these areas (USGS, 2018).

Recent groundwater quality concerns within the Colusa Subbasin include salinity, boron, nitrate, arsenic, heavy metals, and hexavalent chromium. High concentrations of sodium, chloride, and sulfate, all of which are related to salinity (TDS and EC) have been observed south of Maxwell and could negatively impact agricultural applications (Reclamation District No. 108 [RD 108], 2008; CH2MHILL, 2016). Elevated concentrations of boron reported by Glenn-Colusa Irrigation District (GCID) within Colusa County have already impacted agricultural practices (GCID, 1995). In contrast, boron concentrations measured in select groundwater wells within Glenn County have not exceeded the United States Environmental Protection Agency (USEPA) agricultural water quality goal for boron of 750 micrograms per liter ($\mu\text{g/L}$) (USEPA, 1986; USGS, 2018). Elevated salinity levels throughout much of Colusa County, nitrates near Orland and Willows, arsenic near Grimes, and iron and manganese near Williams and Colusa are of concern with regard to Division of Drinking Water standards (CH2MHILL, 2016). Additionally, drinking water supply wells near Willows, Glenn County, have experienced high concentrations of hexavalent chromium (California Water Service, 2016). Pesticides have been detected within groundwater supply wells at concentrations that do not exceed the drinking water standards (CH2MHILL, 2013).

There are also several active groundwater contaminant cleanup sites in the study area. These mostly include leaky storage tanks and unauthorized releases of contaminants such as total petroleum hydrocarbons, nitrate, pesticides and herbicides. The largest contamination site is the Orland Dry Cleaner site, a tetrachloroethylene (PCE) plume within the Colusa Subbasin that extends approximately two miles southeast of the source location in Orland, Glenn County (Department of Toxic Substances Control [DTSC], 2018; State Water Resources Control Board [SWRCB], 2018).

2.5 Land Subsidence

Land subsidence can cause structural damage to foundations, roads, bridges, and other infrastructure. The change in topography can also impact surface water flows by reducing conveyance capacity and potentially changing flow gradients within canals, natural streams, and floodplains.

Land subsidence has been observed and measured within the Colusa Subbasin of the study area. Damage to infrastructure as a result of land subsidence has been observed and reported in the Arbuckle area of Colusa County. A 2015 National Aeronautics and Space Administration (NASA) report reported recent isolated land subsidence of approximately five inches west of Arbuckle (Farr et. al., 2015). Data from a repeat survey of the Sacramento Valley Height-Modernization Project benchmarks near Arbuckle by DWR and county staff indicate a decline in land surface elevation of as much as two feet between 2008 and 2016 at one benchmark north of Arbuckle (Ehorn, 2016). Land subsidence is not exclusive to the Colusa County portion of the study area; repeat survey of benchmarks in Glenn County indicated small amounts of land subsidence southwest of Orland (Ehorn, 2016). Sacramento Valley benchmarks were re-surveyed in 2017, however, data from the survey is not yet available (California GIS Council, 2017). Preliminary analysis of the repeat survey data suggests that the subsidence occurring near Arbuckle and Orland could be inelastic, or permanent. The DWR report on the 2017 survey is anticipated to provide more insight regarding the permanency of the land subsidence.

Extensometer measurements have also recorded ground displacement in the Colusa Subbasin. Appendix B contains a map of the extensometer locations (Figure B-1) and historical ground displacement measured within extensometers in the study area (Figures B-2 through B-6). Seasonal displacements of ± 0.3 inches have been recorded in these extensometers. Maximum displacement of approximately 1 inch has been observed northeast of Artois, Glenn County. No subsidence has been reported within the Corning or West Butte Subbasin portions of the study area (DWR, 2014).

In addition to impacts to infrastructure and surface water flows, land subsidence may also negatively impact groundwater storage capacity; however, it is yet to be determined if the subsidence measured within the study area has measurably impacted storage capacity.

2.6 Interconnected Surface Water

Connectivity between surface waters and groundwater has not been well established in the study area. Further study, which could include analysis using integrated surface water - groundwater models, and construction and monitoring of nested multiple completion wells near surface water gages, is needed to better understand the interaction between surface and groundwater.

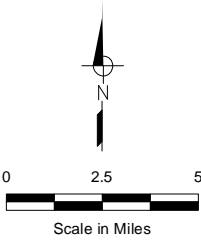
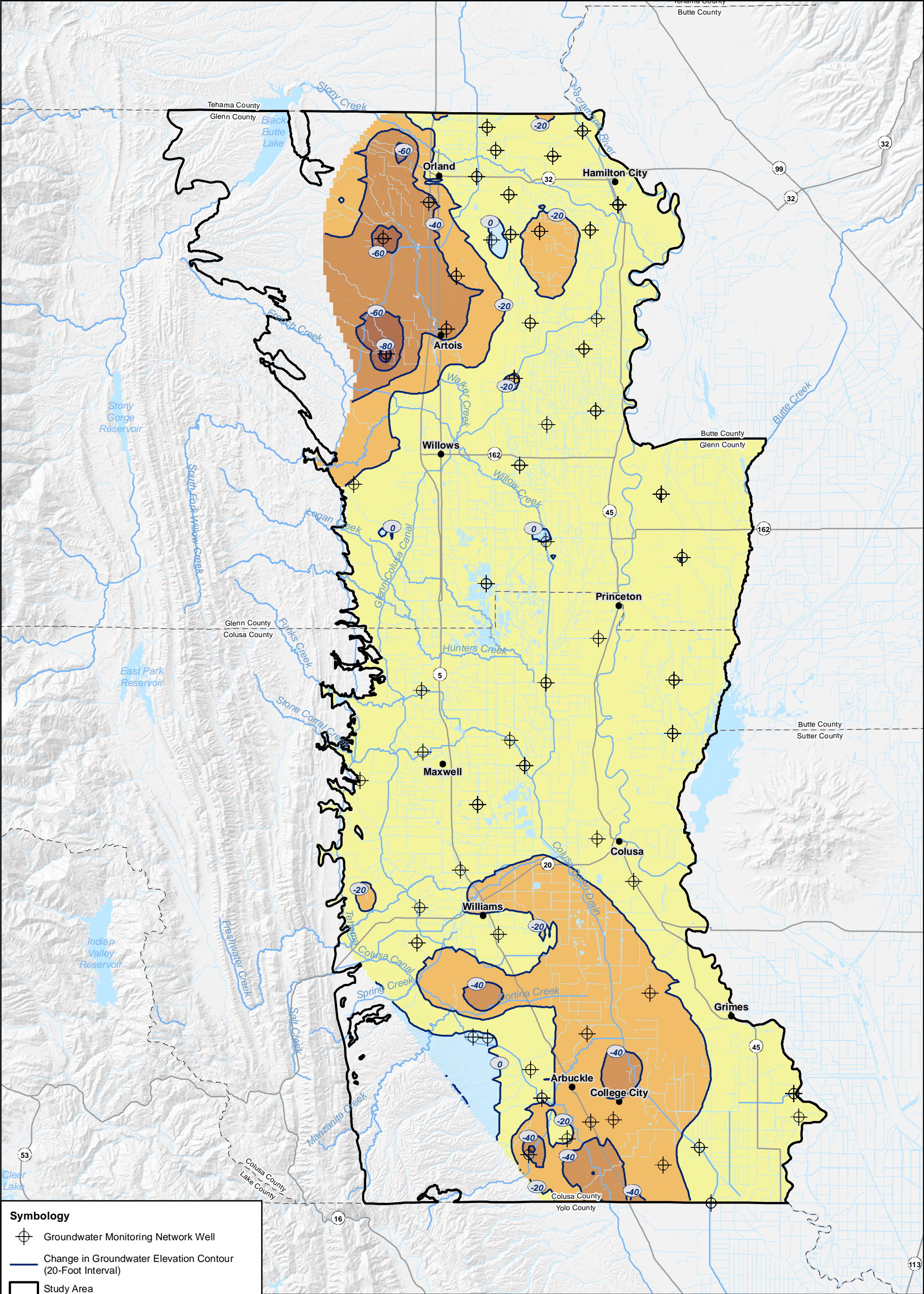


Figure 2-1
Change in Groundwater Elevation
Spring 2006 to Spring 2017
Counties of Colusa and Glenn
Monitoring Network
Assessment Report

3.0 MONITORING NETWORKS

Monitoring networks are required to better understand and evaluate changing conditions within the groundwater, surface water, and land surface systems. To optimize data collection and analysis, the network should be easily accessible, be spatially and temporally relatable to other monitoring networks, be sufficient for demonstrating spatial and temporal trends, and be representative of actual conditions.

3.1 Preliminary Monitoring Network Objectives

Title 23 Section §354.34b of the California Code of Regulations (23 CCR §354.34(b)) states that the monitoring network objectives shall be implemented to:

- (1) *“Demonstrate progress toward achieving measurable objectives described in the [Groundwater Sustainability] Plan.*
- (2) *Monitor impacts to the beneficial uses or users of groundwater.*
- (3) *Monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds.*
- (4) *Quantify annual changes in water budget components.”*

Preliminary monitoring network objectives for the study area were designed to address the requirements of five sustainability indicators (not including seawater intrusion, the sixth sustainability indicator) in support of the future measurable objectives. The overarching goals of the different monitoring networks are to (1) characterize current and historical conditions within the groundwater, surface water, and land surface systems, and (2) evaluate future impacts of implemented GSP projects on the availability and quality of the study area’s water supply.

The preliminary monitoring network objectives are to characterize:

- Groundwater availability and flow properties;
- Aquifer parameters;
- Surface water availability and relationship with groundwater;
- Ephemeral and intermittent stream flow and duration;
- Quality of surface water and groundwater; and,
- Extent and rate of land subsidence.

3.2 Groundwater Level Monitoring

3.2.1 Requirements

The groundwater monitoring network should be dense enough to sufficiently represent spatial and temporal trends through the basin, as described below:

- Spatial densities should sufficiently represent both lateral and vertical extents of the groundwater basin.
 - The quantity and density of groundwater monitoring wells should be sufficient to evaluate overall static groundwater conditions for each principal aquifer and sufficiently support evaluation of impacts from implemented GSP projects and management actions.
 - The quantity and density of groundwater monitoring wells shall be sufficient to evaluate groundwater conditions for the basin and any GSP-defined management areas (23 CCR §354.34(d)).
- Groundwater monitoring network shall be designed such that the sustainability indicators are adequately covered, not just over the entire basin, but also within any specific GSP-defined management areas (23 CCR §354.34(d)). The sustainability indicators supported by the groundwater level monitoring network include:
 - **Chronic lowering of groundwater levels**
 - 23 CCR §354.34(c)(1) specifies that the groundwater monitoring network shall be able to represent the seasonal occurrence, flow direction, and hydraulic gradients of groundwater within and between the principal aquifers and surface waters.
 - **Reduction in groundwater storage**
 - Data from the groundwater monitoring network should be sufficient to enable calculations of annual changes in groundwater storage over time (Monitoring Network BMP, DWR, 2016).
 - **Depletion of interconnected surface water**
 - The groundwater monitoring network shall be able to represent the seasonal occurrence, flow direction, and hydraulic gradients of groundwater between the principal aquifers and surface waters (23 CCR §354.34(c)(6)). According to the Monitoring Network BMP (DWR, 2016), shallow groundwater monitoring wells should be within close proximity to connected streams to enable characterization of the groundwater levels adjacent to connected stream channels. The groundwater monitoring network should extend perpendicular and parallel to the stream flow and be monitored on a frequency to capture seasonal pumping conditions (DWR, 2016).

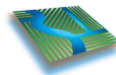
- The Monitoring Network BMP states that the groundwater monitoring network should be able to provide data sufficient to:
 - Represent the unconfined and confined principal aquifers.
 - Support evaluation of Data Quality Objectives (DQOs); for example, impacts to groundwater from injection projects.
 - Support delineation of groundwater depressions, recharge areas, and conditions at basin boundaries.
- Groundwater level monitoring frequencies shall be capable of representing:
 - Short-term, seasonal, and long-term trends (minimum of twice-annually to represent seasonal high and low groundwater conditions) per 23 CCR §354.34(c)(1)(b)).
 - Groundwater conditions, as necessary, to evaluate the progress of GSP implementation (23 CCR §354.34(a)).

In accordance with the Monitoring Network and Identification of Data Gaps Best Management Practices (Monitoring Network BMP) documentation (DWR, 2016), groundwater monitoring network sites should be:

- Dedicated groundwater monitoring wells, if possible, with known construction characteristics.
 - Water supply wells may be used temporarily, if needed.
 - Water supply wells should be screened within a single water bearing unit.
 - Care should be taken to ensure static water levels have been recovered prior to data measurement.
- Aquifer-specific. Monitoring wells shall have depth-dependent screened intervals to sufficiently enable characterization of the groundwater table or potentiometric head for each principal aquifer (23 CCR §354.34(c)(1)).
- Designed considering nearby pumping wells.

Monitoring sites shall include the following information (23 CCR §352.4(a) through (c)), tabulated in Appendix C):

- Unique station identifier and California's Statewide Groundwater Elevation Monitoring Program (CASGEM) ID;
- Site description, well location (North American Datum of 1983 [NAD 83], latitude and longitude decimal degrees to five decimal places);
- Well use, well status, well type;
- Elevation of ground surface (accurate to 0.1 feet North American Datum of 1988 [NAVD 88]);
- Elevation and description of reference point (accurate to 0.5 feet NAVD 88);
- Well construction;



- Borehole and total well depth;
- Well completion report ID;
- Identification of principal aquifers;
- Geophysical logs and other relevant information, if any;
- Monitoring type;
- Measurement(s) taken;
- Monitoring frequency; and
- Description of standards used to install or construct the monitoring site.

3.2.2 Monitoring Protocols

3.2.2.1 *Methodology*

The Monitoring Protocols, Standards, and Sites Best Management Practices (Monitoring Protocols BMP, DWR, 2016) recommends the following monitoring conditions:

- Groundwater levels should be measured from a pre-established and recorded reference point.
 - The reference point elevations (RPE) need to have been surveyed to the NAVD 88, feet and shall be accurate to within 0.5 feet, at a minimum (23 CCR §352.4(a)(4), tabulated in Appendix C).
- Groundwater levels should be measured using approved measurement equipment. Equipment should be operated and maintained in accordance with the manufacturer's instruction.
- When well caps are removed, signs of pressure release should be noted. If pressure release is noted, an appropriate time should be allowed for the water surface to equilibrate to aquifer conditions. Multiple measurements may be taken to ensure equilibration has been reached.
 - Site-specific procedures should be developed for wells under pressure, including flowing artesian wells.
- Questionable measurements should be appropriately noted at time of monitoring.
- All salient conditions should be recorded at time of monitoring.
- Water levels shall be measured to the nearest 0.1 foot, at a minimum (23 CCR §352.4(a)(3), tabulated in Appendix C). Measurements to the nearest 0.01 feet are preferred and should be used if the equipment allows.
 - Groundwater elevations (GWE) are calculated as the RPE minus measured depth to water (DTW).
 - All measurements should be in units of feet, tenths of feet, and hundredths of feet.

- Water level equipment should be decontaminated after each use.
- Measurements should be collected from all monitoring sites within as short a time period as possible; in general, one to two weeks is acceptable. All data should be entered into the data management system as soon as possible.

Recorded information should include:

- Well ID;
- Data and time (24-hour time format);
- Field staff name/ID;
- RPE;
- Height of reference point relative to ground surface at time of measurement;
- DTW;
- GWE; and
- Comments regarding salient observations of nearby pumping, weather conditions, well conditions, etc.

In addition to manual measurements, pressure transducers connected to data loggers may be used to monitor groundwater levels (DWR, 2016). Pressure transducers should be installed in conjunction with manual depth to water measurements; it is recommended that groundwater elevations be calculated after data have been downloaded to prolong the battery life of the unit. The Monitoring Protocols BMP identifies the following requirements when using data loggers:

- All transducers should be installed, operated, and maintained in accordance with the manufacturer's specifications.
- The well ID, cable serial number, pressure transducer serial number, range, accuracy, and type (vented or non-vented) should be recorded.
 - Unvented pressure transducers should be corrected for barometric pressure with continuous data from a barometric transducer.
- Groundwater levels should be recorded to the nearest 0.1 foot, at a minimum.
- The pressure transducers should be assessed to ensure the unit is capable of recording data sufficient to support DQOs. Instrument drift due to groundwater conditions, battery life, and storage capacity should be taken into consideration when groundwater elevations are being calculated.
- Manual groundwater levels should be measured to maintain data logger integrity.

3.2.2.2 Frequency

Manual water level measurements shall be collected twice annually, at a minimum, to ensure seasonal trends are well accounted for (23 CCR §354.34(c)(1)(B)). Manual measurements for all network wells should be collected in October and March per the Monitoring Network BMP (DWR, 2016), unless more frequent measurements are required to support DQOs.

3.2.3 Existing Groundwater Monitoring Programs

Both counties currently have wells included in the state-wide CASGEM program. Glenn County also has a Basin Management Objective (BMO) groundwater level monitoring well network. Colusa County's current groundwater monitoring network consists of wells originally identified in its Groundwater Management Plan (GMP), but has since been revised. These and other existing groundwater monitoring programs are described in more detail in the following sections. Proposed new groundwater monitoring sites were evaluated based on existing sites from DWR and USGS groundwater monitoring networks, and recommendations from County staff.

Table 3-1 lists existing groundwater level monitoring programs with publicly available data and their respective websites.

Table 3-1. Existing Groundwater Monitoring Programs		
Groundwater Monitoring Network	Responsible Agency	Website
National Water Information System (NWIS)	U.S. Geological Survey (USGS)	https://waterdata.usgs.gov/nwis
Water Data Library (WDL)	California Department of Water Resources (DWR)	http://wdl.water.ca.gov/waterdatalibrary/
California's Statewide Groundwater Elevation Monitoring Program (CASGEM)	California DWR	https://www.casgem.water.ca.gov/
County-Specific Groundwater Level Monitoring Programs	County of Colusa & County of Glenn	Colusa County: http://countyofcolusa.org/index.aspx?NID=660 Glenn County: http://www.countyofglenn.net/committee/water-advisory-committee/management-plan

3.2.3.1 USGS National Water Information System

USGS manages the data for groundwater elevation sites throughout the country. The sites are measured either discretely (via field methods) or continuously (via time series data logging). All of the USGS water level data are housed on their publicly-available National Water Information System (NWIS) website. Active monitoring wells included within the USGS NWIS database are located within the Colusa Subbasin and the portion of the West Butte Subbasin in the study area.

3.2.3.2 DWR Water Data Library

DWR provides groundwater level data for wells throughout the State. Most of the wells are agriculture irrigation supply wells. The data are publicly available via the DWR WDL website. Active monitoring wells included within the DWR WDL database are located throughout the Colusa Subbasin and the portions of the Corning and West Butte Subbasins in the study area.

3.2.3.3 CASGEM Wells

The State's CASGEM program (authorized by Senate Bill X7-6 and enacted in 2009) is a collaborative tool for reporting and sharing groundwater elevations throughout the State. Under CASGEM, self-declared Monitoring Entities are responsible for submitting a groundwater monitoring plan to monitor all or part of a groundwater basin, such that long-term and seasonal trends in groundwater levels can be assessed.

The Counties of Colusa and Glenn currently have active monitoring wells listed under CASGEM for monitoring groundwater levels within the Colusa, Corning, and West Butte Subbasins. DWR monitors the CASGEM wells within both counties. Some of these wells are included in the current groundwater monitoring network, which is evaluated in Section 3.2.4 of this report. Groundwater level measurements from voluntary wells are also managed via the CASGEM database. Voluntary wells are monitored by volunteer monitoring entities located within both Colusa and Glenn Counties in the Colusa Subbasin and the portions of the Corning and West Butte Subbasins in the study area. Voluntary wells tend to have unknown well construction.

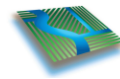
3.2.3.4 Other County-Specific Groundwater Level Monitoring Networks

Colusa County adopted a GMP in 2008. Glenn County adopted a GMP in 2000, adopted a set of groundwater BMOs in 2001, and revised their GMP in 2012. Both Counties defined BMOs as preventing long-term depletion of groundwater in storage, maintaining groundwater supply for agricultural and domestic use, and preventing lowering of groundwater levels, land subsidence, and degradation in water quality (Glenn County, 2012; Wood Rodgers, 2008). Colusa County defined an additional BMO as preserving surface water flows and wetland habitat. Both Counties currently have groundwater monitoring networks in place to support pursuit of their BMOs: Colusa County's groundwater monitoring network and Glenn County's BMO wells.

In addition to their BMO wells, Glenn County also has a dedicated groundwater monitoring network that includes a mix of selected CASGEM, BMO, and other observation wells that are not used for water supply purposes, but are instead dedicated to the monitoring of groundwater conditions. Glenn County's dedicated groundwater monitoring network wells and Colusa County's groundwater monitoring network wells were evaluated in Section 3.2.4 of this report.

3.2.4 Groundwater Monitoring Network Assessment

The groundwater monitoring wells evaluated herein and shown on Figures 3-1 and 3-2 are a combination of the Colusa County groundwater monitoring network wells and the Glenn County dedicated groundwater monitoring network wells (that is, Glenn County wells that are not used for any purpose other than observation). For the Glenn County wells, these exclude the BMO water supply wells and the wells included in the Glenn County annual water quality monitoring program discussed in Section 3.3.3 of this report. The Colusa County groundwater monitoring network, on the other hand, does include active water supply wells as part of the County's groundwater level monitoring program. Many of the Colusa County groundwater monitoring network wells and the Glenn County dedicated groundwater monitoring network wells evaluated in this report are also included in other local, state, and federal monitoring programs listed in Table 3-1. The evaluation discussed herein, however, was conducted solely on the Colusa County groundwater monitoring network and the Glenn County dedicated groundwater monitoring network wells.



Colusa and Glenn Counties' groundwater monitoring network wells are shown on Figure 3-1. These wells were identified by County staff as being part of each County's groundwater monitoring network and include some wells that are part of existing CASGEM and BMO well programs in addition to other County-identified groundwater monitoring wells within each County.

The County of Colusa currently has 54 completions in 31 wells and the County of Glenn currently has 86 completions in 28 wells. All but one of these wells are currently included in the CASGEM program. Table 3-2 contains the entire current groundwater monitoring network with State well numbers, CASGEM IDs, well completion report IDs, well status and type, location information, reference point information, construction, principal aquifer designations, and assessment categories. Well completion reports for the current groundwater monitoring network wells, if available, are included in Appendix D.

Table 3-2. Groundwater Monitoring Network Wells																										
No.	County	State Well Number	CASGEM ^(a) Station ID	Well Completion Report ID	Latitude, decimal degrees	Longitude, decimal degrees	Datum	Well Use	Well Status (active, inactive, other)	Well Type (single, clustered, nested, other)	Ground Surface Elevation, feet	Reference Point Elevation, feet	Reference Point Description	Borehole Depth, feet, bgs ^(b)	Completed Well Depth, feet, bgs	Screen Intervals, feet, bgs	Total Length of Screen, feet	Casing Diameter, inches	Primary Aquifer	Assessment Category						Notes
																				Existing Monitoring Network	Known Construction	Non-Pumping Well	Nested Well	Proximity to Surface Water ^(c)	Accessible and Usable	
1	Colusa	12N01E06D002	16330	DWR, 2001 ^(d)	38.92490	-121.91400	NAD 83 ^(e)	Observation	active	nested	27.94	26.76	top of casing	1020	729	710-720	10	2	Tehama	x	x	x	x	x	x	Local Well LCB-4 Deep.
2	Colusa	12N01E06D003	33886	DWR, 2001	38.92490	-121.91400	NAD 83	Observation	active	nested	27.94	30.32	top of casing	1020	505	485-495	10	2	Tehama	x	x	x	x	x	x	Local Well LCB-4 Middle.
3	Colusa	12N01E06D004	16331	DWR, 2001	38.92490	-121.91400	NAD 83	Observation	active	nested	27.94	30.72	top of casing	1020	298	275-285	10	2	Tehama	x	x	x	x	x	x	Local Well LCB-4 Shallow.
4	Colusa	13N01E11A001	18534	2865	38.99371	-121.82401	NAD 83	Domestic	active	single	31.8	32.8	top of casing	158	145	136	22	8	Alluvium	x	x	-	-	x	x	Approximate screen or open hole 136-158 feet (Roy Hull, DWR, 2017) ^(f) .
5	Colusa	13N01W07G001	36246	2868	38.99161	-122.01411	NAD 83	Irrigation	active	single	90.47	90.47	plug at top of casing, west side	180	180	108-180	72	12	Alluvium	x	x	-	-	-	x	
6	Colusa	13N01W13P001	18549	DWR, 2001	38.96935	-121.92587	NAD 83	Observation	active	nested	32.23	33.52	top of casing	1000	885	865-875	10	2	Tehama	x	x	x	x	x	x	Local Well LCB-1 Deep.
7	Colusa	13N01W13P002	25159	DWR, 2001	38.96935	-121.92587	NAD 83	Observation	active	nested	32.23	34.58	top of casing	1000	480	410-420 450-456	16	2	Tehama	x	x	x	x	x	x	Local Well LCB-1 Middle.
8	Colusa	13N01W13P003	36248	DWR, 2001	38.96935	-121.92587	NAD 83	Observation	active	nested	32.23	35.49	top of casing	1000	355	271-278	7	2	Tehama	x	x	x	x	x	x	Local Well LCB-1 Shallow.
9	Colusa	13N01W22P002	16357	40376	38.95531	-121.96311	NAD 83	Irrigation	active	single	60.46	61.16	not provided	236	236	196-236	40	12	Tehama	x	x	-	-	-	x	USBR ^(g) well.
10	Colusa	13N02W04G001	16366	2738D	39.00881	-122.08771	NAD 83	Observation	caved?	cluster	188.81	189.01	not provided	852	505	350-470	120	4	Tehama	x	x	x	-	x	-	Well caved; depth not recorded.
11	Colusa	13N02W04G003	31897	2738B	39.00881	-122.08771	NAD 83	Observation	caved?	cluster	188.81	189.01	not provided	310	310	110-252	142	4	Tehama	x	x	x	-	x	-	Well caved; depth tagged at 187 feet.
12	Colusa	13N02W04G004	16494	2738A	39.00881	-122.08771	NAD 83	Observation	caved?	cluster	188.81	188.81	not provided	193	193	1-193	192	4	Alluvium	x	x	x	-	x	-	Well caved; depth tagged at 90 feet.
13	Colusa	13N02W12L001	31899	115408	38.98981	-122.03751	NAD 83	Irrigation	active	single	135.49	135.99	not provided	778	NA ^(h)	NA	NA	NA	Tehama	-	-	-	-	-	x	USBR well.
14	Colusa	13N02W15J001	39884	77457	38.97631	-122.06161	NAD 83	Domestic	active	single	212.52	213.02	hole in plate	362	362	270-362	92	8	Tehama	x	x	-	-	-	x	
15	Colusa	13N02W20H002	25005	423344	38.96341	-122.10091	NAD 83	Domestic	active	single	342.58	343.58	not provided	320	320	200-260 300-320	80	5	Tehama	x	x	-	-	-	x	
16	Colusa	14N01E35P001	38718	E0109311A	39.01241	-121.82906	NAD 83	Observation	active	nested	46.88	48.74	not provided	1540	1039	985-995	10	2.5	Tehama	x	x	x	x	x	x	
17	Colusa	14N01E35P002	24655	E0109311B	39.01241	-121.82906	NAD 83	Observation	active	nested	46.88	48.36	not provided	1540	736	545-555 610-620 695-705	30	2.5	Tehama	x	x	x	x	x	x	
18	Colusa	14N01E35P003	24656	E0109311C	39.01241	-121.82906	NAD 83	Observation	active	nested	46.88	48	not provided	1540	275	135-145 215-225	20	2.5	Alluvium, Tehama	x	x	x	x	x	x	
19	Colusa	14N01E35P004	24657	E0109311D	39.01241	-121.82906	NAD 83	Observation	active	nested	46.88	47.62	not provided	1540	71	50-60	10	2.5	Alluvium	x	x	x	x	x	x	
20	Colusa	14N01W04K003	18554	USGS ⁽ⁱ⁾ Well Log	39.09301	-121.97671	NAD 83	Irrigation	inactive	single	37.43	37.43	top of casing, under pump base, northwest side	73	73	46-70	24	16	Alluvium	x	x	-	-	-	x	USBR well.
21	Colusa	14N02W13N001	18563	3027	39.06021	-122.04111	NAD 83	Irrigation	active	single	62.45	62.45	not provided	392	392	104-392	288	14	Alluvium, Tehama	x	x	-	-	x	x	USBR well.
22	Colusa	14N02W29J001	18566	44455	39.03171	-122.09911	NAD 83	Irrigation	active	single	162.5	162.5	not provided	924	412	119-143 152-158 176-182 198-208 215-239 264-276 307.5-319.5 334.5-349.5	109	12	Tehama	x	x	-	-	x	x	
23	Colusa	14N03W14Q003	32324	20032	39.05761	-122.15861	NAD 83	Irrigation	active	single	172.52	172.52	open hole in pump base	704	685	390-480 500-590 614-685	251	16	Tehama	x	x	-	-	x	x	
24	Colusa	14N03W24C001	16691	72290	39.05691	-122.14351	NAD 83	Domestic	active	single	172.51	172.81	not provided	320	312	292-312	20	8	Tehama	-	x	-	-	-	x	USBR well. Records indicate the well is 160 feet deep (Roy Hull, DWR, 2017).
25	Colusa	15N01W05G001	14309	12982	39.18261	-121.99351	NAD 83	Domestic	active	single	47.42	48.82	not provided	140	140	75-140	65	8	Alluvium	x	x	-	-	-	x	Well is either screened or open hole after 75 feet.
26	Colusa	15N02W19E001	14319	71038	39.14011	-122.13251	NAD 83	Irrigation	inactive	single	87.46	88.11	top of casing	334	334	162-182 198-206 262-274 290-294 310-334	72	14	Alluvium, Tehama	x	x	x	-	-	x	Irrigation well with no pump installed.
27	Colusa	15N03W08Q001	NA	492125	39.16139	-122.21378	NAD 83	Irrigation	NA	single	NA	NA	NA	360	350	30-130 250-350	200	10.75 16	Alluvium, Tehama	x	x	-	x	x	x	
28	Colusa	15N03W20Q001	38293	802508C	39.13302	-122.21647	NAD 83	Observation	active	nested	128.56	130.32	top of short casing	620	424	370-410	40	2.5	Tehama	x	x	x	x	x	x	
29	Colusa	15N03W20Q002	24470	802508B	39.13302	-122.21647	NAD 83	Observation	active	nested	128.56	130.66	top of middle casing	620	170	130-160	30	2.5	Tehama	x	x	x	x	x	x	
30	Colusa	15N03W20Q003	38294	802508A	39.13302	-122.21647	NAD 83	Observation	active	nested	128.56	131	top of tall casing	620	82	30-80	50	2.5	Alluvium	x	x	x	x	x	x	
31	Colusa	16N02W05B001	25511	726832C	39.27527	-122.10568	NAD 83	Observation	active	nested	65	66.91	top of casing	986	797	730-750	20	4	Tehama	x	x	x	x	x	x	
32	Colusa	16N02W05B002	25512	726832B	39.27527	-122.10568	NAD 83	Observation	active	nested	65	65.55	not provided	986	535	462-472	10	2.5	Tehama	x	x	x	x	x	x	

Table 3-2. Groundwater Monitoring Network Wells																										
No.	County	State Well Number	CASGEM ^(a) Station ID	Well Completion Report ID	Latitude, decimal degrees	Longitude, decimal degrees	Datum	Well Use	Well Status (active, inactive, other)	Well Type (single, clustered, nested, other)	Ground Surface Elevation, feet	Reference Point Elevation, feet	Reference Point Description	Borehole Depth, feet, bgs ^(b)	Completed Well Depth, feet, bgs	Screen Intervals, feet, bgs	Total Length of Screen, feet	Casing Diameter, inches	Primary Aquifer	Assessment Category						Notes
																				Existing Monitoring Network	Known Construction	Non-Pumping Well	Nested Well	Proximity to Surface Water ^(c)	Accessible and Usable	
33	Colusa	16N02W05B003	38669	726832A	39.27527	-122.10568	NAD 83	Observation	active	nested	65	66.34	not provided	986	301	174-184 246-256	20	2.5	Tehama	x	x	x	x	x	x	
34	Colusa	16N02W25B002	33868	Owner's Log	39.21651	-122.03121	NAD 83	Domestic	active	single	55.42	55.42	not provided	274	274	254-274	20	8	Tehama	x	x	-	-	x	x	Construction and lithology information provided by owner.
35	Colusa	16N03W14H003	24683	E0116237D	39.24391	-122.15401	NAD 83	Observation	active	nested	65.7	68.5	top of tallest	1500	1481	1370-1380 1410-1420	20	2.5	Tehama	x	x	x	x	x	x	Artesian flowing well.
36	Colusa	16N03W14H004	24684	E0116237C	39.24391	-122.15401	NAD 83	Observation	active	nested	65.7	68.21	top of second tallest	1500	1236	1140-1150 1170-1180	20	2.5	Tehama	x	x	x	x	x	x	
37	Colusa	16N03W14H005	37673	E0116237B	39.24391	-122.15401	NAD 83	Observation	active	nested	65.7	67.91	top of second shortest	1500	775	720-730	10	2.5	Tehama	x	x	x	x	x	x	
38	Colusa	16N03W14H006	24685	E0116237A	39.24391	-122.15401	NAD 83	Observation	active	nested	65.7	67.68	top of shortest	1500	378	295-305	10	2.5	Tehama	x	x	x	x	x	x	
39	Colusa	16N03W35N002	16301	37	39.19141	-122.17191	NAD 83	Domestic	caved?	single	75.47	76.47	not provided	500	403	NA	NA	4	NA	-	-	-	-	x	-	Well caved; depth tagged at 20 feet. Well Completion Report claims well casing was pulled due to silt.
40	Colusa	16N04W02P001	16308	77484	39.26291	-122.27541	NAD 83	Stock	active	single	162.53	163.03	not provided	203	203	112-203	91	8.625	Tehama	x	x	-	-	x	x	
41	Colusa	17N01W10A001	25258	E0109199D	39.34374	-121.95194	NAD 83	Observation	active	nested	64.28	67.53	not provided	1420	828	770-780 790-800	20	2.5	Tehama	x	x	x	x	x	x	
42	Colusa	17N01W10A002	24658	E0109199C	39.34374	-121.95194	NAD 83	Observation	active	nested	64.28	67.07	not provided	1420	475	380-390 415-425	20	2.5	Tehama	x	x	x	x	x	x	
43	Colusa	17N01W10A003	24659	E0109199B	39.34374	-121.95194	NAD 83	Observation	active	nested	64.28	66.82	not provided	1420	204	148-158	10	2.5	Alluvium	x	x	x	x	x	x	
44	Colusa	17N01W10A004	24660	E0109199A	39.34374	-121.95194	NAD 83	Observation	active	nested	64.28	66.43	not provided	1420	117	88-98	10	2.5	Alluvium	x	x	x	x	x	x	
45	Colusa	17N01W27A001	24441	E0122768C	39.30099	-121.95300	NAD 83	Observation	active	nested	66.61	68.98	not provided	1500	581	430-440 500-510	20	2.5	Tehama	x	x	x	x	x	x	
46	Colusa	17N01W27A002	24980	E0122768B	39.30099	-121.95300	NAD 83	Observation	active	nested	66.61	68.63	not provided	1500	285	260-270	10	2.5	Tehama	x	x	x	x	x	x	
47	Colusa	17N01W27A003	24981	E0122768A	39.30099	-121.95300	NAD 83	Observation	active	nested	66.61	68.28	not provided	1500	203	160-170	10	2.5	Alluvium	x	x	x	x	x	x	
48	Colusa	17N02W09H002	25514	726866A	39.34170	-122.08377	NAD 83	Observation	active	nested	67	69.36	top of casing	940	806	779-800	21	4	Tehama	x	x	x	x	x	x	
49	Colusa	17N02W09H003	25761	726866B	39.34170	-122.08377	NAD 83	Observation	active	nested	67	68.54	top of southernmost casing	940	578	470-480 510-520	20	2.5	Tehama	x	x	x	x	x	x	
50	Colusa	17N02W09H004	25515	726866C	39.34170	-122.08377	NAD 83	Observation	active	nested	67	68.78	top of northernmost casing	940	302	250-260	10	2.5	Tehama	x	x	x	x	x	x	
51	Colusa	17N02W30J002	16960	57983	39.29541	-122.12121	NAD 83	Domestic	active	single	63.43	63.43	not provided	182	159	157-159	2	6	Tehama	x	x	-	-	-	x	
52	Colusa	17N03W08R001	39127	49451	39.33521	-122.21241	NAD 83	Domestic	active	single	107.46	108.46	not provided	151	130	125-130	5	6	Alluvium	x	x	-	-	x	x	
53	Colusa	17N03W32H001	35475	93568	39.28610	-122.21046	NAD 83	Domestic	active	single	100.47	102.47	not provided	140	112	68-72 104-112	12	6.625	Alluvium	x	x	-	-	-	x	
54	Colusa	18N02W36B001	16914	177869	39.37721	-122.02981	NAD 83	Irrigation	abandoned	single	75.4	76	square hole in disk blade atop well	455	410	88-128 195-225 240-340	170	18 18 16	Alluvium, Tehama	x	x	-	-	x	x	
55	Glenn	18N01W02E001	25506	726833A	39.44187	-121.94344	NAD 83	Observation	active	nested	78.5	80.89	top of lowest PVC	760	739	719-729	10	2	Tuscan C	x	x	x	x	x	x	
56	Glenn	18N01W02E002	38317	726833B	39.44187	-121.94344	NAD 83	Observation	active	nested	78.5	81.3	top of middle PVC	760	470	450-460	20	2	Tehama	x	x	x	x	x	x	
57	Glenn	18N01W02E003	25507	726833C	39.44187	-121.94344	NAD 83	Observation	active	nested	78.5	81.37	top of tallest PVC	760	130	110-120	10	2	Alluvium	x	x	x	x	x	x	
58	Glenn	18N02W18D001	24953	E045412	39.42083	-122.14578	NAD 83	Observation	active	nested	82.43	83.03	top of shortest PVC	1200	1000	975-985	10	2.5	Tuscan A	x	x	x	x	x	x	
59	Glenn	18N02W18D002	38201	E045412	39.42083	-122.14578	NAD 83	Observation	active	nested	83.43	83.43	top of second shortest PVC	1200	700	620-630 670-680	20	2.5	Tuscan C	-	x	x	x	x	x	
60	Glenn	18N02W18D003	24992	E045412	39.42083	-122.14578	NAD 83	Observation	active	nested	84.43	84.03	top of second tallest PVC	1200	530	510-520	10	2.5	Tehama	-	x	x	x	x	x	
61	Glenn	18N02W18D004	38358	E045412	39.42083	-122.14578	NAD 83	Observation	active	nested	85.43	84.43	top of tallest PVC	1200	266	246-256	10	2.5	Tehama	-	x	x	x	x	x	
62	Glenn	19N01W22D004	24496	816274A	39.49271	-121.96481	NAD 83	Observation	active	nested	87.38	89.68	top of shortest casing	820	800	780-790	10	2.5	Tuscan C	x	x	x	x	x	x	
63	Glenn	19N01W22D005	24497	816274B	39.49271	-121.96481	NAD 83	Observation	active	nested	87.38	89.87	top of second shortest casing	820	540	520-530	10	2.5	Tuscan C	x	x	x	x	x	x	
64	Glenn	19N01W22D006	38357	816274C	39.49271	-121.96481	NAD 83	Observation	active	nested	87.38	90.18	top of second tallest casing	820	360	340-350	10	2.5	Tuscan, Tehama	x	x	x	x	x	x	
65	Glenn	19N01W22D007	24498	816274D	39.49271	-121.96481	NAD 83	Observation	active	nested	87.38	90.33	top of tallest casing	820	100	80-90	10	2.5	Alluvium	x	x	x	x	x	x	
66	Glenn	19N02W08Q001	25762	726952	39.51596	-122.11143	NAD 83	Observation	active	nested	108.36	120	top of casing	1000	939.7	856-876	20	2.5	Tehama	x	x	x	x	x	x	
67	Glenn	19N02W08Q002	25763	726952	39.51595	-122.11143	NAD 83	Observation	active	nested	108.36	109.38	westernmost piezometer	1000	228	208-218	10	2.5	Tehama	x	x	x	x	x	x	
68	Glenn	19N02W08Q003	25764	726952	39.51596	-122.11143	NAD 83	Observation	active	nested	108.36	109.56	easternmost piezometer	1000	97	77-87	10	2.5	Tehama	x	x	x	x	x	x	

Table 3-2. Groundwater Monitoring Network Wells																										
No.	County	State Well Number	CASGEM ^(a) Station ID	Well Completion Report ID	Latitude, decimal degrees	Longitude, decimal degrees	Datum	Well Use	Well Status (active, inactive, other)	Well Type (single, clustered, nested, other)	Ground Surface Elevation, feet	Reference Point Elevation, feet	Reference Point Description	Borehole Depth, feet, bgs ^(b)	Completed Well Depth, feet, bgs	Screen Intervals, feet, bgs	Total Length of Screen, feet	Casing Diameter, inches	Primary Aquifer	Assessment Category						Notes
																				Existing Monitoring Network	Known Construction	Non-Pumping Well	Nested Well	Proximity to Surface Water ^(c)	Accessible and Usable	
69	Glenn	19N02W33K001	19793	581475	39.45469	-122.08402	NAD 83	Irrigation	active	single	87.41	87.11	top of western sounding pipe	300	260	160-260	100	16	Tehama	-	x	-	-	-	x	
70	Glenn	19N04W14M002	25787	816220	39.50037	-122.28269	NAD 83	Observation	active	single	185.83	187.83	top of casing	366	65	45-55	10	2.5	Alluvium	x	x	x	-	-	x	Local Well GCAB303-1.
71	Glenn	20N02W11A001	17170	3669	39.60922	-122.04491	NAD 83	Observation	active	nested	125.40	125.90	top of board on northernmost piezometer	700	90	70-90	20	1.5	Modesto	x	x	x	x	-	x	
72	Glenn	20N02W11A002	17171	3669	39.60922	-122.04491	NAD 83	Observation	active	nested	125.40	125.90	top of board on southernmost piezometer	700	160	140-160	20	1.5	Tehama	x	x	x	x	-	x	
73	Glenn	20N02W11A003	35614	3669	39.60922	-122.04491	NAD 83	Observation	active	nested	125.40	125.90	top of board on middle piezometer	700	510	490-510	20	1.5	Tehama	x	x	x	x	-	x	
74	Glenn	20N02W18R005	23986	801448	39.58552	-122.11701	NAD 83	Observation	active	nested	131.38	132.45	top of lowest casing	1020	1000	920-930 970-980	20	2	Tuscan AB	x	x	x	x	x	x	
75	Glenn	20N02W18R006	23987	801448	39.58552	-122.11701	NAD 83	Observation	active	nested	131.38	132.98	top of second lowest casing	1020	675	635-655	20	2	Tehama	x	x	x	x	x	x	
76	Glenn	20N02W18R007	24259	801448	39.58552	-122.11701	NAD 83	Observation	active	nested	131.38	133.43	top of second highest casing	1020	545	450-460 515-526	20	2	Tehama	x	x	x	x	x	x	
77	Glenn	20N02W18R008	23988	801448	39.58552	-122.11701	NAD 83	Observation	active	nested	131.38	133.97	top of highest casing	1020	201	140-150 170-180	20	2	Modesto	x	x	x	x	x	x	
78	Glenn	20N02W25F001	23989	782025	39.55949	-122.03263	NAD 83	Observation	active	nested	102.20	105.56	top of lowest casing	1000	980	940-960	20	2	Tehama	x	x	x	x	-	x	Artesian flowing well; Data logger installed August 2016.
79	Glenn	20N02W25F002	23990	782025	39.55949	-122.03263	NAD 83	Observation	active	nested	102.20	105.86	top of second lowest casing	1000	490	420-430 460-470	20	2	Tehama	x	x	x	x	-	x	Artesian flowing well.
80	Glenn	20N02W25F003	25519	782025	39.55950	-122.03263	NAD 83	Observation	active	nested	102.20	104.58	top of second highest casing	1000	280	190-200 250-260	20	2	Tehama	x	x	x	x	-	x	
81	Glenn	20N02W25F004	23991	782025	39.55949	-122.03263	NAD 83	Observation	active	nested	102.20	105.10	top of highest casing	1000	85	55-65	10	2	Tehama	x	x	x	x	-	x	
82	Glenn	20N02W33B001	17174	3686	39.54846	-122.08307	NAD 83	Observation	active	single	105.41	107.01	bottom of box	326	320	100-120 200-320	20 120	6	Tehama	x	x	x	-	x	x	
83	Glenn	20N03W07E001	37860	E057712D	39.60475	-122.24962	NAD 83	Observation	active	nested	179.17	180.83	top of lowest casing	1400	1030	984-1014	30	2	Tehama	x	x	x	x	x	x	
84	Glenn	20N03W07E002	24329	E057712C	39.60476	-122.24962	NAD 83	Observation	active	nested	179.17	181.06	top of second lowest casing	1400	656	616-636	20	2	Tehama	x	x	x	x	x	x	
85	Glenn	20N03W07E003	24330	E057712B	39.60475	-122.24962	NAD 83	Observation	active	nested	179.17	181.47	top of second highest casing	1400	505	380-410 465-485	50	2	Tehama	x	x	x	x	x	x	
86	Glenn	20N03W07E004	37861	E057712A	39.60475	-122.24962	NAD 83	Observation	active	nested	179.17	181.75	top of highest casing	1400	138	118-128	10	2	Tehama	x	x	x	x	x	x	
87	Glenn	21N02W01F001	38535	726740	39.70439	-122.03830	NAD 83	Observation	active	nested	160.88	162.13	top of lowest casing	600	578	547-557	10	2	Tuscan C	x	x	x	x	-	x	
88	Glenn	21N02W01F002	24205	726740A	39.70439	-122.03830	NAD 83	Observation	active	nested	160.83	162.28	top of highest casing	600	318	297-307	10	2	Tehama	x	x	x	x	-	x	
89	Glenn	21N02W01F003	39954	726741	39.70439	-122.03830	NAD 83	Observation	active	nested	161.84	162.84	top of lowest casing	125	124	109-119	10	2	Modesto	x	x	x	x	-	x	
90	Glenn	21N02W01F004	40029	726741	39.70439	-122.03830	NAD 83	Observation	active	nested	161.92	163.22	top of highest casing	125	75	55-65	10	2	Modesto	x	x	x	x	-	x	
91	Glenn	21N02W04G002	24993	E044112	39.70333	-122.09103	NAD 83	Observation	active	nested	178.41	180.21	top of shortest casing	1200	948	928-938	10	2	Tuscan B	x	x	x	x	x	x	
92	Glenn	21N02W04G003	24994	E044112	39.70333	-122.09103	NAD 83	Observation	active	nested	178.41	180.51	top of second shortest casing	1200	713	674-684 693-703	20	2	Tuscan C	x	x	x	x	x	x	
93	Glenn	21N02W04G004	38359	E044112	39.70333	-122.09102	NAD 83	Observation	active	nested	178.41	180.31	top of second tallest casing	1200	289	165-175 270-280	20	2	Tehama	x	x	x	x	x	x	
94	Glenn	21N02W04G005	24995	E044112	39.70333	-122.09102	NAD 83	Observation	active	nested	178.41	181.16	top of tallest casing	1200	77	57-67	10	2	Modesto	x	x	x	x	x	x	
95	Glenn	21N02W05M001	39676	801406	39.70082	-122.12076	NAD 83	Observation	active	nested	188.93	190.43	top of shortest casing	520	473	442-452	10	2	Tehama	x	x	x	x	-	x	
96	Glenn	21N02W05M002	36588	801406	39.70082	-122.12076	NAD 83	Observation	active	nested	188.93	190.91	top of middle casing	520	153	122-132	10	2	Tehama, Modesto	x	x	x	x	-	x	
97	Glenn	21N02W05M003	23996	801406	39.70082	-122.12076	NAD 83	Observation	active	nested	188.93	191.33	top of tallest casing	520	75	44-54	10	2	Modesto	x	x	x	x	-	x	
98	Glenn	21N02W33M001	38536	726724	39.62970	-122.10045	NAD 83	Observation	active	nested	149	151.60	top of 4" casing	1020	974.2	869-890	21	4	Tuscan AB	x	x	x	x	-	x	
99	Glenn	21N02W33M002	24206	726724	39.62970	-122.10045	NAD 83	Observation	active	nested	149	151.26	top of shortest 2" casing	1020	571.1	540-550	10	2	Tuscan C	x	x	x	x	-	x	
100	Glenn	21N02W33M003	24207	726724	39.62970	-122.10045	NAD 83	Observation	active	nested	149	151.49	top of tallest 2" casing	1020	171.1	140-150	10	2	Tehama	x	x	x	x	-	x	
101	Glenn	21N02W36A002	21239	315494	39.63341	-122.03194	NAD 83	Observation	active	single	135.39	136.29	top of chip board inside casing	155	145	120-140	20	6	Tehama	x	x	x	-	-	x	
102	Glenn	21N03W01R002	25232	726894	39.69624	-122.14048	NAD 83	Observation	active	single	203.32	206.77	bottom of hole cut in casing	1530	255	235-245	10	2	Tehama	x	x	x	-	-	x	Local Well OAWD-Mon Well.

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																				Existing Monitoring Network	Known Construction	Non-Pumping Well	Nested Well	Proximity to Surface Water ^(c)	Accessible and Usable	
103	Glenn	21N03W23D001	23992	801404	39.66720	-122.17735	NAD 83	Observation	active	nested	204.76	205.89	top of shortest casing	420	393.5	363-373	10	2	Tehama	x	x	x	x	-	x	
104	Glenn	21N03W23D002	25233	801404	39.66720	-122.17734	NAD 83	Observation	active	nested	204.76	206.43	top of middle casing	420	191.5	142-152 160-170	20	2	Modesto	x	x	x	x	-	x	
105	Glenn	21N03W23D003	23993	801404	39.66720	-122.17735	NAD 83	Observation	active	nested	204.76	206.93	top of tallest casing	420	93.5	42-72	30	2	Modesto	x	x	x	x	-	x	
106	Glenn	21N03W34Q002	25789	816224	39.62472	-122.18714	NAD 83	Observation	active	nested	166.65	167.07	top of shortest casing	1020	980	930-960	30	2	Tehama	x	x	x	x	-	x	
107	Glenn	21N03W34Q003	25234	816224	39.62472	-122.18714	NAD 83	Observation	active	nested	166.65	167.38	top of middle casing	1020	710	620-630 650-660 680-690	30	2	Tehama	x	x	x	x	-	x	
108	Glenn	21N03W34Q004	25790	816224	39.62472	-122.18714	NAD 83	Observation	active	nested	166.65	167.63	top of tallest casing	1020	80	60-70	10	2	Alluvium	x	x	x	x	-	x	
109	Glenn	21N04W12A003	38716	E0103388	39.69716	-122.25330	NAD 83	Observation	active	nested	247.50	250.12	top of tallest casing	1080	1070	955-975 1030-1050	40	2	Tehama	x	x	x	x	x	x	
110	Glenn	21N04W12A004	24650	E0103388	39.69717	-122.25330	NAD 83	Observation	active	nested	247.50	249.62	top of shortest casing	1080	660	520-530 590-600 630-640	30	2	Tehama	x	x	x	x	x	x	
111	Glenn	21N04W12A001	24000	726739	39.69717	-122.25330	NAD 83	Observation	abandoned	nested	247.88	249.38	top of piezometer	640	629	598-608	10	2	Tehama	x	x	x	x	x	x	Local Well Big W-Deep.
112	Glenn	21N04W12A002	25725	726739	39.69716	-122.25330	NAD 83	Observation	active	nested	247.88	249.88	top of tallest casing	640	278	247-257	10	2	Tehama	x	x	x	x	x	x	
113	Glenn	22N01W29N001	24651	E0103616A	39.72445	-122.00943	NAD 83	Observation	active	nested	146.25	150.95	top of tallest casing	1210	1156	859-879 990-1010 1116-1135	59	2	Tuscan	x	x	x	x	-	x	
114	Glenn	22N01W29N002	37700	E0103616B	39.72477	-122.00969	NAD 83	Observation	active	nested	146.25	150.68	top of second tallest casing	1210	661	549-559 595-605 631-641	30	2	Tuscan, Tehama	x	x	x	x	x	x	
115	Glenn	22N01W29N003	24652	E0103616C	39.72459	-122.00960	NAD 83	Observation	active	nested	146.25	149.99	top of second shortest casing	1210	400	189-199 255-265 320-330 370-380	40	2	Tehama	x	x	x	x	x	x	
116	Glenn	22N01W29N004	38717	E0103616D	39.72477	-122.00965	NAD 83	Observation	active	nested	146.25	149.06	top of shortest casing	1210	109	89-99	10	2	Modesto	x	x	x	x	x	x	
117	Glenn	22N02W01N001	24999	E038764A	39.78358	-122.04619	NAD 83	Observation	active	nested	159.21	161.07	top of shortest casing	1100	1060	810-820 1040-1050	20	2	Tuscan AB	x	x	x	x	x	x	
118	Glenn	22N02W01N002	38362	E038764B	39.78358	-122.04619	NAD 83	Observation	active	nested	159.21	161.31	top of second shortest casing	1100	720	700-710	10	2	Tehama & Tuscan BC	x	x	x	x	x	x	
119	Glenn	22N02W01N003	25000	E038764C	39.78358	-122.04619	NAD 83	Observation	active	nested	159.21	161.50	top of second tallest casing	1100	380	210-220 360-370	20	2	Tuscan C, Tehama	x	x	x	x	x	x	
120	Glenn	22N02W01N004	25001	E038764D	39.78358	-122.04619	NAD 83	Observation	active	nested	159.21	161.65	top of tallest casing	1100	90	70-80	10	2	Alluvium	x	x	x	x	x	x	
121	Glenn	22N02W15C002	38316	726790	39.76352	-122.07727	NAD 83	Observation	active	nested	189.30	192.37	top of second tallest casing	880	844	760-780	20	4	Tuscan A	x	x	x	x	-	x	
122	Glenn	22N02W15C003	25235	726789	39.76352	-122.07727	NAD 83	Observation	active	nested	189.30	192.01	top of shortest casing	880	401	370-380	10	2	Tuscan B	x	x	x	x	-	x	
123	Glenn	22N02W15C004	25769	726789	39.76352	-122.07727	NAD 83	Observation	active	nested	189.30	192.25	top of second shortest casing	880	241	210-220	10	2	Tehama	x	x	x	x	-	x	
124	Glenn	22N02W15C005	25505	726789	39.76352	-122.07727	NAD 83	Observation	active	nested	189.30	192.71	top of tallest casing	880	91	60-70	10	2	Modesto	x	x	x	x	-	x	
125	Glenn	22N02W18C001	24996	E044014	39.76821	-122.13644	NAD 83	Observation	active	nested	223.44	224.64	top of shortest casing	1200	1049	840-850 900-910 989-999 1019-1029	40	2.5	Tuscan A	x	x	x	x	x	x	
126	Glenn	22N02W18C002	38360	E044014	39.76821	-122.13644	NAD 83	Observation	active	nested	224.44	224.84	top of second shortest casing	1200	455	414-434	20	2.5	Tuscan BC	x	x	x	x	x	x	
127	Glenn	22N02W18C003	24997	E044014	39.76821	-122.13643	NAD 83	Observation	active	nested	225.44	225.54	top of second tallest casing	1200	185	165-175	10	2.5	Tehama	x	x	x	x	x	x	
128	Glenn	22N02W18C004	24998	E044014	39.76821	-122.13643	NAD 83	Observation	active	nested	226.44	225.94	top of tallest casing	1200	75	55-65	10	2.5	Modesto	x	x	x	x	x	x	
129	Glenn	22N02W30H002	25726	726922	39.73252	-122.12306	NAD 83	Observation	active	nested	204.43	205.22	top of shortest casing	920	900	850-880	30	2	Tuscan C	x	x	x	x	x	x	
130	Glenn	22N02W30H003	25727	726922	39.73252	-122.12304	NAD 83	Observation	active	nested	204.43	205.77	top of middle casing	920	275	130-140 150-160 250-260	30	2	Tehama, Modesto	x	x	x	x	x	x	
131	Glenn	22N02W30H004	38609	726922	39.73253	-122.12304	NAD 83	Observation	active	nested	204.43	206.43	top of tallest casing	920	80	45-55 60-70	20	2	Tehama, Modesto	x	x	x	x	x	x	

Table 3-2. Groundwater Monitoring Network Wells																										
No.	County	State Well Number	CASGEM ^(a) Station ID	Well Completion Report ID	Latitude, decimal degrees	Longitude, decimal degrees	Datum	Well Use	Well Status (active, inactive, other)	Well Type (single, clustered, nested, other)	Ground Surface Elevation, feet	Reference Point Elevation, feet	Reference Point Description	Borehole Depth, feet, bgs ^(b)	Completed Well Depth, feet, bgs	Screen Intervals, feet, bgs	Total Length of Screen, feet	Casing Diameter, inches	Primary Aquifer	Assessment Category						Notes
																				Existing Monitoring Network	Known Construction	Non-Pumping Well	Nested Well	Proximity to Surface Water ^(c)	Accessible and Usable	
132	Glenn	22N03W01R001	25508	726839A	39.78664	-122.14545	NAD 83	Observation	active	nested	226.04	228.17	top of shortest casing	515	490	470-480	10	2	Tuscan C	x	x	x	x	-	x	
133	Glenn	22N03W01R002	25509	726839B	39.78664	-122.14545	NAD 83	Observation	active	nested	226.04	228.53	top of middle casing	515	290	270-280	10	2	Tehama	x	x	x	x	-	x	
134	Glenn	22N03W01R003	38319	726839C	39.78664	-122.14545	NAD 83	Observation	active	nested	226.04	229.04	top of tallest casing	515	80	60-70	10	2	Modesto	x	x	x	x	-	x	
135	Glenn	22N03W24E001	25236	726923A	39.74717	-122.15597	NAD 83	Observation	active	nested	230.51	231.70	top of shortest casing	860	840	800-820	20	2	Tehama	x	x	x	x	x	x	
136	Glenn	22N03W24E002	38667	726923B	39.74717	-122.15597	NAD 83	Observation	active	nested	230.51	231.93	top of middle casing	860	195	130-150 170-180	30	2	Modesto	x	x	x	x	x	x	
137	Glenn	22N03W24E003	25758	726923C	39.74717	-122.15597	NAD 83	Observation	active	nested	230.51	232.41	top of tallest casing	860	70	50-60	10	2	Modesto	x	x	x	x	x	x	
138	Glenn	22N03W28P001	24702	801439A	39.72617	-122.20604	NAD 83	Observation	active	nested	258.22	259.49	top of shortest casing	500	421	390-400	10	2	Tehama	x	x	x	x	x	x	
139	Glenn	22N03W28P002	23998	801439B	39.72617	-122.20603	NAD 83	Observation	caved?	nested	258.22	259.97	top of middle casing	500	311	270-290	20	2	Tehama	x	x	x	x	x	-	Well potentially caved. Data logger trapped down hole.
140	Glenn	22N03W28P003	24703	801439C	39.72618	-122.20604	NAD 83	Observation	active	nested	258.22	260.52	top of tallest casing	500	71	30-50	20	2	Alluvium	x	x	x	x	x	x	
(a) California's Statewide Groundwater Elevation Monitoring Program (CASGEM). (b) Below ground surface (bgs). (c) Monitoring sites located wthin 200 feet of an existing water channel or water body. (d) California Department of Water Resources (DWR), 2001, Lower Colusa Basin Conjunctive Use Investigation: Monitoring Network Completion Report, June 1999. (DWR, 2001) (e) Latitude and longitude values are in North American Datum of 1983 (NAD 83), decimal degrees. (f) Email correspondance from Roy Hull, DWR North Region Office, received NOvember 16, 2017. (Roy Hull, DWR, 2017) (g) U.S. Bureau of Reclamation (USBR). (h) NA denotes field where data was not unknown or unavailable. (i) U.S. Geological Survey (USGS).																										

Table 3-3 lists the criteria for evaluating the groundwater monitoring wells within the current groundwater monitoring network. These criteria were identified given the groundwater monitoring network requirements discussed in the Monitoring Network BMP and 23 CCR §354.34.

Table 3-3. Assessment Categories of the Groundwater Monitoring Network Wells	
Characteristic	Importance
Known Construction Characteristics	Known well construction characteristics will enable evaluation of groundwater conditions at specific depths, for principal aquifers. Examples of construction characteristics include borehole depth, screened intervals, and the presence of seals within the annular fill.
Nested Multiple Completion Wells	Nested multiple completion wells allow the measurement of water levels at different depths within the aquifer system. Typically, confinement of the aquifers increases with depth. Multiple completion wells can provide insight into how the aquifer system is connected and allow estimates of vertical gradients and vertical hydraulic conductivity to be made. The different aquifers at depth are discussed in the preliminary hydrogeologic conceptual model report, a partner document to this report (West Yost, 2018).
Non-Dedicated Monitoring Wells	Pumping causes cones of depression that impact the water levels at and near the pumping well. Pumping water levels are not indicative of the static condition of the aquifer system and can skew estimates of groundwater storage. Pumping wells included in the groundwater monitoring network should be verified as inactive when measurements are made.
Proximity to Streams and Interconnected Surface Waters	Wells, specifically multiple completion wells, near streams or interconnected surface waters are useful for evaluating the interaction between surface water and the groundwater aquifer. Vertical hydraulic gradients from wells near stream gages can provide insight regarding the direction of flow into or away from the surface water feature.
Lateral and Vertical Density	To characterize groundwater levels throughout the entire groundwater subbasin, accessible monitoring sites should be spatially distributed throughout the area of interest. Not only should the monitoring sites be distributed laterally, but their screened intervals should also be set at depths that correspond to the hydrogeologic formations and principal aquifer systems that comprise the groundwater subbasin.
Accessibility and Usability	The monitoring sites need to be easily accessible by field staff. Additionally, well completions should be clear down-hole to allow access of water level measuring equipment.

Known Construction. All of the wells listed in Table 3-2 have known well construction, with the exception of two wells. Colusa County monitoring well 13N02W12L001 is a U.S. Bureau of Reclamation (USBR) well; no well construction is available in the well completion report but USBR may have additional information regarding the well construction characteristics. Colusa County monitoring well 16N03W35N002 is reported to have been destroyed or caved in; the well completion report states that the well casing was pulled due to issues with silt. These wells may prove to be undesirable for inclusion in the current groundwater monitoring network since they may potentially represent mixed groundwater conditions between two principal aquifers or may be unusable. These wells are near other groundwater monitoring network wells, therefore no data gaps were identified given the potential exclusion of these two wells from the current groundwater monitoring network.

Nested Multiple Completion Wells. Of the 59 groundwater monitoring sites (140 separate completions) shown on Figure 3-1 and listed in Table 3-2, over 30 are nested multiple completion wells. These nested wells are screened at discrete depths up to a maximum depth of 1,180 ft below ground surface. The nested wells enable measurement of vertical head gradients between the three principal aquifers within the study area: the unconfined alluvial aquifer and the semi-confined to confined aquifer systems of the Tehama and Tuscan Formations (West Yost, 2018). Additionally, the nested wells located near major unlined surface water conveyance systems will enable characterization of the interaction between the surface water and groundwater systems. The current groundwater monitoring network contains wells that provide a lateral and vertical density sufficient to enable characterization of groundwater within the principal aquifers.

Non-Dedicated Monitoring Wells. The vast majority of the active domestic, irrigation, and stock wells included in the current groundwater monitoring network are located in Colusa County. The Monitoring Network BMP allows the temporary inclusion of water supply wells in the groundwater monitoring network if the wells are screened within a single water-bearing unit. Of these wells, three were identified to be perforated in more than one principal aquifer, based on preliminary analysis of the depth to base of Quaternary alluvium. These three wells are 18N02W36B001 (near Princeton), 15N03W08Q001 (west of Williams), and 14N02W13N001 (north of Arbuckle). These wells may prove to be undesirable for inclusion in the current groundwater monitoring network, since they may potentially represent mixed groundwater conditions between two principal aquifers. The potential data gap stemming from this analysis is discussed more in Section 3.2.5.

Proximity to Streams and Interconnected Surface Waters. The study area is bounded and traversed by irrigation canals and drains, as well as perennial, ephemeral, and intermittent streams. Many of the surface waters are near wells included in the current groundwater monitoring network, except for the surface waters contained within the Colusa National Wildlife Refuge, east of Williams, as seen on Figure 3-1. There are no current County-identified groundwater monitoring wells near the Colusa National Wildlife Refuge.

Lateral and Vertical Density. The current groundwater monitoring network has a density of approximately 2.9 completions per 100 square miles in the Quaternary alluvium, approximately 5.9 completions per 100 square miles in the Tehama Formation, and approximately 9.1 completions per 100 square miles in the Tuscan Formation. Well densities per principal aquifer were calculated based on the lateral extent of the aquifer (for example, the Quaternary alluvium aquifer laterally covers about 1,090 square miles of the study area while the Tuscan aquifer laterally covers approximately 208 square miles of the study area). These densities are sufficient to evaluate regional groundwater level trends throughout the study area, in accordance with the Monitoring Network BMP (DWR, 2016). Additionally, there are enough depth-specific wells located throughout the study area to evaluate groundwater elevation trends, groundwater storage, connectivity, and aquifer characteristics with depth, between principal aquifers and the surface water system.

Accessibility. The wells listed in Table 3-2 were identified by County staff and should be accessible for field investigations. However, this assessment identified six completions within four wells that may be unusable due to caved-in or collapsed casings. These include 13N02W04G001, -003, -004, 13N02W12L001, 16N03W35N002, and 22N03W28P002. Of these four wells, two are listed as having insufficient well construction information available. The potential data gap stemming from this analysis is discussed more in Section 3.2.5.

3.2.5 Data Gaps in Groundwater Monitoring Network

23 CCR §354.38(b) defines data gaps as occurring where there is an insufficient number of monitoring sites, insufficient monitoring frequency, or unreliable monitoring sites. Data gaps can also occur when collected data are of insufficient quality or quantity to support evaluation of the sustainability indicators (Monitoring Network BMP).

The current groundwater monitoring network was assessed based on requirements listed in the Monitoring Network BMP and 23 CCR §354.34. Spatial or temporal density and quality of monitoring sites were then assessed to identify potential data gaps. Data gaps within the current groundwater monitoring network were evaluated for all criteria and identified for two categories:

1. Usability of the monitoring site due to:
 - a. Potential cave-ins
 - b. Wells screened across multiple water-bearing units and principal aquifers
2. Spatial distribution of monitoring sites with regard to:
 - a. Presence near a surface water body
 - b. Full lateral and vertical extent of coverage

3.2.6 Proposed Actions to Address Data Gaps

3.2.6.1 Proposed Addition of Existing Wells

Figure 3-2 shows the current Colusa County and Glenn County groundwater monitoring networks. Potentially unusable monitoring sites are identified on Figure 3-2 along with potential locations for new wells and proposed existing wells that may be added to the current network. All of the identified existing wells are part of one of the existing groundwater monitoring programs listed in Table 3-1. Existing wells proposed to be added to the Counties' groundwater level monitoring networks are listed in Table 3-4.

Table 3-4. Existing Wells Proposed to be Added to the Groundwater Monitoring Network

State Well Number	Location	Existing Groundwater Monitoring Network	Rationale for Selection
15N04W11G001	Colusa County	DWR WDL ^(a)	Expand lateral monitoring network coverage towards basin's western margin.
16N03W35M001	Colusa County	DWR WDL	Replacement for potentially unreliable site: similar location and construction characteristics as the potentially unreliable site.
22N03W05F002	Glenn County	DWR WDL	Expand lateral monitoring network coverage near Stony Creek.

(a) California Department of Water Resources (DWR) Water Data Library (WDL).

3.2.6.2 Proposed New Wells

Colusa County staff identified three potential locations on County-owned sites for one new multiple completion monitoring well and extensometer based on evaluation of lowered groundwater levels and land subsidence in the Arbuckle area. These three-proposed new groundwater monitoring site locations are shown on Figure 3-2. Of the three potential sites, the site located within Arbuckle has been identified by County staff to be the most potentially beneficial for monitoring groundwater levels and land subsidence in the Arbuckle area per sustainability indicators (23 CCR §354.34(c)).

If data collected from the groundwater monitoring network are deemed insufficient to enable monitoring of the groundwater in accordance with sustainability indicator needs, locations for additional new monitoring sites may be evaluated.

3.2.6.3 Additional Proposed Actions

It is recommended that a field survey be conducted of all current groundwater monitoring network sites to verify latitude and longitude coordinates, well depths, ground surface elevations, reference point elevations, and descriptions in accordance with the requirements described in 23 CCR §352.4(a) through (c) (Appendix C). Monitoring frequencies should also be verified for compliance with requirements set forth in 23 CCR §354.34(c)(1)(B).

3.3 Groundwater Quality Monitoring

3.3.1 Requirements

The groundwater quality monitoring network shall be designed such that the sustainability indicators are adequately covered not just over the entire basin, but also within any specific GSP-defined Management Areas. The only sustainability indicator supported by the groundwater quality monitoring network is the degradation of water quality. The groundwater quality monitoring network shall be designed to collect sufficient spatial and temporal data from each principal aquifer to enable determination of groundwater quality trends and to address known water quality issues (23 CCR §354.34(c)(4)).

In accordance with the Monitoring Network BMP (DWR, 2016), data collected from the groundwater quality monitoring network should be sufficient to:

- Enable definition of the three-dimensional extent of impact;
- Enable mapping of transient water quality degradation;
- Facilitate assessment of groundwater quality impacts to beneficial uses and users;
- Enable evaluation of management practice impacts to groundwater quality degradation;
- Support evaluation of DQOs.

Groundwater quality monitoring events should occur twice-annually (correlating with seasonal highs and lows) but may be more frequent, as needed, per the Monitoring Network BMP (DWR, 2016). The Monitoring Network BMPs state that:

- Where regulated plumes exist, monitoring should coincide with regulatory monitoring.
- Where unregulated groundwater quality issues occur, monitoring should be consistent with the degree of groundwater use in the impacted area.

Monitoring sites shall include the following information (23 CCR §352.4(a) through (c), tabulated in Appendix C):

- Unique station identifier, CASGEM ID;
- Site description, well location (NAD 83, latitude and longitude decimal degrees to five decimal places);
- Well use, well status, well type;
- Elevation of ground surface (accurate to 0.1 feet NAVD 88);
- Elevation and description of reference point (accurate to 0.5 feet NAVD 88);
- Well construction;
- Borehole and total well depth;
- Well completion report ID;
- Identification of principal aquifers;
- Geophysical logs and other relevant information, if any;
- Monitoring type;
- Measurement(s) taken;
- Monitoring frequency; and
- Description of standards used to install the monitoring site.

3.3.2 Monitoring Protocols

In accordance with the Monitoring Protocols BMP (DWR, 2016), all water quality analyses should be performed by a State Environmental Laboratory Accreditation Program certified laboratory. Additionally, analytical methods should be similar to those used by other existing groundwater quality programs within the basin for comparative purposes.

Groundwater quality sampling protocols should follow USGS National Field Manual for the Collection of Water Quality Data (Wilde, 2005) in accordance with the Monitoring Protocols BMP (DWR, 2016). Groundwater sampling protocols should ensure that:

- Groundwater quality data are collected from the correct location, accurate and reproducible, and represent conditions consistent with the DQOs;
- Salient data are recorded; and
- All data are handled such that integrity is maintained.

The Monitoring Protocols BMP defines the following standardized protocols:

- Prior to sampling, the appropriate laboratory should be notified and scheduled, the appropriate sampling bottles and equipment should be obtained, and sample preservation requirements and hold times should be confirmed.
- All groundwater monitoring network wells should have a unique identifier posted on the well housing or casing.
- Samples from pumping wells should be collected near the wellhead.
- All sampling equipment and ports should be free of contaminants and decontaminated between sampling locations.
- Groundwater elevations should be measured.
- Wells not equipped with low-flow sampling taps should be purged prior to sampling to ensure sampling is of ambient groundwater conditions and not borehole storage conditions. Typically, three casing volumes purged is adequate.
- If purging or pumping causes a well to be evacuated, allow 90 percent recovery prior to sampling.
- Field parameters should be collected coincident with each sample. Field parameters should include pH, EC, and temperature, at a minimum. Field instruments should be calibrated daily.
- Sample containers should be labeled prior to sampling. Sample labels should include sample ID, sample date and time, sample personnel, sample location, preservatives, analyte, and analytical method.
- Samples should be collected under laminar flow conditions.
- Samples should be collected according to appropriate standards. The sample collection procedure should reflect the type of analysis being performed and the DQOs.
- Samples should be preserved at the time of sampling. Samples should be filtered, as appropriate.
- Samples should be chilled after collection to prevent degradation.

- Chain of custody forms should be used to track procession of the samples.
- Analytical laboratories should utilize reporting limits that are equal to or less than the applicable DQOs or regional water quality objectives and screening levels.

3.3.3 Existing Groundwater Quality Monitoring Programs

Table 3-5 lists the groundwater quality monitoring networks with publicly available data and their respective websites.

Table 3-5. Existing Groundwater Quality Monitoring Programs		
Groundwater Monitoring Network	Responsible Agency	Website
National Water Information System (NWIS)	U.S. Geological Survey (USGS)	https://waterdata.usgs.gov/nwis
Water Data Library (WDL)	California Department of Water Resources (DWR)	http://wdl.water.ca.gov/waterdatalibrary/
Public Water Agencies and Municipalities	State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW)	https://sdwis.waterboards.ca.gov/PDWW/
GeoTracker and GeoTracker Groundwater Ambient Monitoring and Assessment (GAMA) Programs	SWRCB	http://geotracker.waterboards.ca.gov/ http://geotracker.waterboards.ca.gov/gama/
Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS)	Central Valley Salinity Coalition	Not Available ^(a)
Irrigated Lands Regulatory Program (ILRP)	Central Valley Regional Water Quality Control Board	http://ceden.waterboards.ca.gov/AdvancedQueryTool
Glenn County Annual Water Quality Sampling Program	County of Glenn	http://www.countyofglenn.net/committee/water-advisory-committee/water-quality ^(a)
(a) Groundwater quality data are not available online.		

3.3.3.1 USGS NWIS

The USGS manages groundwater quality sites throughout the country, which measure assorted water quality parameters either discretely or continuously. All the USGS water quality data are housed on their publicly-available NWIS web interface. Active monitoring wells included within the USGS NWIS database are located within the Colusa Subbasin and portions of the West Butte Subbasin in the study area.

3.3.3.2 DWR WDL

The California DWR monitors groundwater quality throughout the State. The data are made publicly available via their WDL website. DWR also provides study-area-specific water quality downloads on request. Active monitoring wells included within the DWR WDL database are located throughout the Colusa Subbasin and portions of the Corning, and West Butte Subbasins in the study area.

3.3.3.3 SWRCB Division of Drinking Water

The SWRCB Division of Drinking Water (DDW) maintains water quality records and schedules for public water systems. Public water systems can include municipalities, schools, large farms, and other similar agencies or businesses that provide water for human consumption. Public drinking water systems test regularly for regulated drinking water contaminants, as specified in Title 22 of the CCR, and report the test results to the SWRCB DDW.

3.3.3.4 SWRCB GeoTracker and GeoTracker GAMA

The SWRCB GeoTracker website manages data for groundwater contamination sites that require or may potentially require cleanup. These sites and facilities include permitted facilities and active cleanup sites.

GeoTracker for Groundwater Ambient Monitoring and Assessment Program (GAMA) was developed in response to the Groundwater Quality Monitoring Act in 2001 (Assembly Bill 599). GeoTracker GAMA integrates groundwater quality data from multiple ambient groundwater monitoring sites into a single, publicly available website application. Participating GAMA wells can be found throughout the portions of the Colusa, Corning, and West Butte Subbasins within the study area.

3.3.3.5 Central Valley Salinity Alternatives for Long-Term Sustainability Program

The Central Valley Salinity Alternatives for Long-Term Sustainability Program (CV-SALTS) was initiated in 2006 via a joint effort by the SWRCB, Central Valley Regional Water Quality Control Board, and stakeholders within the Central Valley. CV-SALTS is managed by the Central Valley Salinity Coalition and aims to develop and implement a comprehensive salinity and nitrate management program throughout the entirety of California's Central Valley. The CV-SALTS monitoring network is based primarily on wells currently included in other existing programs.

3.3.3.6 Irrigated Lands Regulatory Program

The Irrigated Lands Regulatory Program (ILRP) is a Regional Water Quality Control Board regulatory program that aims to prevent degradation of water quality due to agricultural discharge. ILRP was initiated in 2003 specifically for surface water impairment; the program was expanded to include impairments to groundwater in 2012. There are two ILRP coalitions within the study area: California Rice Commission and the Sacramento Valley Water Quality Coalition. Both of these coalitions compile groundwater quality assessment reports (GARs) by utilizing data from the DWR WDL, USGS NWIS, GeoTracker and GeoTracker GAMA, other state and federally managed networks, and local irrigation, domestic, private, municipal, and industrial wells (CH2MHILL, 2013; CH2MHILL, 2016).

3.3.3.7 Glenn County Annual Water Quality Sampling Program

Glenn County has a network of 46 wells that are tested annually for general parameters, including temperature, pH, and EC. The network is comprised mostly of domestic and irrigation wells that are located within the portions of the Colusa, Corning, and West Butte Subbasins within the study area.

3.3.4 Groundwater Quality Monitoring Network

Groundwater quality monitoring networks have not yet been formally defined, however, groundwater quality data collected under existing regulatory programs, specifically the ILRP, may be sufficient for SGMA compliance. The California Rice Commission has identified their ILRP groundwater quality trend network from active USGS-managed wells within and surrounding the California Rice Commission management area (CH2MHILL, 2016). Ten of these wells are within the Colusa Subbasin of the study area and three wells are within the West Butte Subbasin of the study area. The Sacramento Valley Water Quality Coalition in coordination with Northern California Water Association (NCWA) is currently in the process of defining their ILRP groundwater quality trend monitoring network sites.

3.3.5 Data Gaps in Groundwater Quality Monitoring Network

Four potential data gaps have been identified within the proposed ILRP groundwater quality monitoring networks:

1. The existing California Rice Commission groundwater quality monitoring network does not provide sufficient monitoring for nitrate northwest of Willows, Glenn County (CH2MHILL, 2016). This data gap impacts both the Tehama and relatively-shallow Quaternary aquifer systems within the Colusa Subbasin.
2. The current California Rice Commission groundwater monitoring plan to collect groundwater quality samples every two years may not be sufficient to satisfy the requirements set forth in the Monitoring Network BMP (DWR, 2016).
3. The existing California Rice Commission groundwater monitoring network is laterally limited to the extents of the rice ponds within the study area. It is possible that the lateral extent of the Sacramento Valley Water Quality Coalition groundwater quality monitoring network may not satisfy the spatial requirements set forth in 23 CCR §354.34(c) and the Monitoring Network BMPs (as discussed in Sections 3.3.1 and 3.3.2 of this report). This would impact the principal aquifers within the study area portions of the Colusa, Corning, and West Butte Subbasins.

4. It is possible that the monitoring networks defined by the Sacramento Valley Water Quality Coalition and the California Rice Commission may not be sufficient to adequately allow identification of upwelling or intrusion of deeper brackish/connate waters into the freshwater aquifer systems. This would impact the principal aquifers within the study area portions of the Colusa, Corning, and West Butte Subbasins.

3.3.6 Proposed Actions to Address Data Gaps

Groundwater quality data collected under existing regulatory programs may be sufficient for SGMA compliance. The Sacramento Valley Water Quality Coalition in coordination with NCWA is currently in the process of defining its groundwater quality trend monitoring network sites. The California Rice Commission, who also manages lands within the study area, has already defined their groundwater quality trend monitoring network for ILRP compliance. The Counties of Colusa and Glenn should consider coordinating with the Sacramento Valley Water Quality Coalition, NCWA, and the California Rice Commission in the establishment and ongoing evaluation of these groundwater quality monitoring network sites with the goal of using data collected under the ILRP for SGMA compliance. The Counties of Colusa and Glenn should also consider using groundwater quality data collected through other ongoing regulatory programs, such as the SWRCB DDW regulation of municipal supplies and County regulation of small public supply systems, for SGMA compliance.

3.4 Seawater Intrusion

The study area is located approximately 30 miles from the legal Sacramento-San Joaquin River Delta boundary, and even farther from the brackish delta estuaries. Additionally, the 2018 Draft Basin Prioritization study by DWR found that the Colusa, Corning, and West Butte Subbasins have not exhibited any impacts of saline intrusion within the past 20 years. As such, seawater intrusion is neither occurring nor anticipated to occur within the Colusa, Corning, or West Butte Subbasins within the study area.

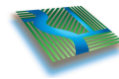
3.5 Land Subsidence Monitoring

3.5.1 Requirements

The land subsidence network shall be designed such that the sustainability indicators are adequately covered, not just over the entire basin, but also within any specific GSP-defined Management Areas. The only sustainability indicator supported by the land subsidence monitoring network is land subsidence. The land subsidence monitoring network shall be designed to enable the characterization of the rate and extent of subsidence by providing consistent, accurate, and reproducible results (23 CCR §354.34(c)(5); DWR, 2016).

Monitoring sites shall include the following information (23 CCR §352.4(a) through (b), tabulated in Appendix C):

- Unique station identifier;
- Site description;
- Monitoring type;
- Measurement(s) taken;



- Monitoring frequency;
- Location (NAD 83, latitude and longitude decimal degrees to five decimal places);
- Elevation of ground surface (accurate to 0.1 feet NAVD 88);
- Elevation and description of reference point (accurate to 0.5 feet NAVD 88);
- Description of standards used to install the monitoring site.

3.5.2 Monitoring Protocols

The following land subsidence monitoring protocols have been established by DWR (DWR, 2016):

- Levelling surveys should follow standards defined in the California Department of Transportation's (Caltrans) Surveys Manual (Caltrans, assorted dates).
- Continuous global positioning system (GPS) surveys should follow standards defined in the Caltrans Surveys Manual.
- Extensometer instruments should be installed, calibrated, and maintained per the manufacturer's instructions.
- Interferometric Synthetic Aperture Radar (InSAR) surveys should be obtained via interpretative reports for specific regions. Raw data files may be obtained and processed instead, if needed.

Land surface should be recorded to an accuracy of 0.1 feet, at a minimum, relative to NAVD 88, in accordance with the requirements described in 23 CCR §352.4(a)(3) (tabulated in Appendix C).

3.5.3 Existing Subsidence Monitoring Programs

Table 3-6 lists the existing land subsidence monitoring networks and data sets with publicly available data, and their respective websites.

Table 3-6. Existing Land Subsidence Monitoring Programs		
Subsidence Monitoring Network	Responsible Agency	Website
Interferometric Synthetic Aperture Radar (InSAR) Surveys ^(a)	European Space Agency; Japanese Space Exploration Agency; Italian Space Agency; Canadian Space Agency; German Aerospace Center; National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL)	http://www.esa.int/ESA http://global.jaxa.jp/ http://www.asi.it/en http://www.asc-csa.gc.ca/eng/ http://www.dlr.de/dlr/en/desktopdefault.aspx/tabid-10002/ https://data.cnra.ca.gov/dataset/nasa-jpl-insar-subsidence
Continuous Global Positioning System (GPS) Benchmarks	National Geodetic Survey; UNAVCO; Berkeley Seismological Laboratory	https://www.ngs.noaa.gov/NGSDDataExplorer/# http://www.unavco.org/data/data.html http://seismo.berkeley.edu/networks/index.html
Extensometers	California Department of Water Resources (DWR)	http://wdl.water.ca.gov/groundwater/landsubsidence/LSmonitoring.cfm
Sacramento Valley Height-Modernization Project	California DWR Northern District & U.S. Bureau of Reclamation	Not Available ^(b)
<p>(a) The InSAR sources currently house unprocessed raw survey data but not interpretative reports for specific regions. Some of the reports using InSAR to study subsidence specific to California can be found on DWR's website: http://wdl.water.ca.gov/groundwater/landsubsidence/LSmonitoring.cfm</p> <p>(b) Sacramento Valley Height-Modernization project data are not available online. The 2008 survey report can be found at: http://wdl.water.ca.gov/groundwater/docs/DWR_USBR_Sacramento_Valley_Subsidence_Report_2008.pdf</p>		

3.5.3.1 InSAR Surveys

InSAR is a satellite-based method of mapping changes in land surface elevation. InSAR surveys have been conducted over the Central Valley, with the focus being the western edge of the San Joaquin Valley. Land subsidence studies using InSAR satellite surveys that include the entire study area except for the western-most edge of the Colusa and Corning Subbasins have been conducted by NASA and the California Institute of Technology (Farr et.al., 2015).

3.5.3.2 Continuous GPS Benchmarks

The National Oceanic and Atmospheric Administration (NOAA) National Geodetic Survey (NGS) website compiles some of the publicly available information regarding benchmarks with and without GPS survey results. These sites include continuous GPS sites with data available via UNAVCO, formerly known as the University NAVSTAR Consortium, and the Berkeley Seismological Laboratory as well as survey benchmarks. NGS has also started a program called “GPS on Benchmarks” to provide higher spatial resolution to their existing benchmark grid.

Figure 3-3 shows the locations of the continuous GPS benchmarks near the study area. There are two continuous GPS stations within the study area (both within the Colusa Subbasin of Colusa County). Three additional stations are located near the study area, two of which are west of the Colusa Subbasin (in both Colusa and Glenn Counties), and one located east of the study area in the Sutter Buttes (Sutter County).

3.5.3.3 DWR Extensometers

Extensometers are installed in wells or boreholes and can detect changes in the thickness of the sediment surrounding the well due to compaction or expansion. There are five extensometers installed throughout the study area, all of which are managed by DWR. The extensometers are shown on Figure 3-3. All five extensometers are set at a depth greater than 700 feet and so measure subsidence impacts of both the shallow Quaternary alluvial aquifer and portions of the deeper Tehama and Tuscan Formation aquifers. Four of the extensometers are located within the Colusa Subbasin (two each in Colusa and Glenn Counties) and measure expansion/compression of the alluvial and Tehama Formation aquifer systems. One extensometer is located within the Corning Subbasin (Glenn County), where the Tehama and Tuscan Formation aquifer systems intermix. This extensometer measures expansion/compression of the Quaternary alluvial and Tehama/Tuscan Formation aquifer systems.

3.5.3.4 Sacramento Valley Height-Modernization Project Monitoring Network

DWR and USBR jointly manage the Sacramento Valley Height-Modernization Project, which aims to characterize land subsidence due to groundwater withdrawal within the Sacramento Valley via survey benchmarks and continuous GPS stations. The Glenn County benchmarks were surveyed in 2004. Initial survey of the complete valley-wide network was conducted in 2008 (Table 3-6). Repeat surveys of select benchmarks in Glenn County and near Arbuckle in Colusa County were conducted in 2015 and 2016, respectively (Ehorn, 2016). Results from a repeat survey of Sacramento Valley benchmarks conducted in 2017 are not yet available (California GIS Council, 2017).

The Sacramento Valley Height-Modernization Project Monitoring Network benchmarks are shown on Figure 3-3. The benchmarks are located such that the entire study area is well represented, with the exception of the southwestern portion of the Colusa Subbasin, near the northern end of the Capay Hills.

3.5.4 Land Subsidence Monitoring Network

Table 3-7 lists the benchmarks, continuous GPS stations, and extensometers included in the land subsidence monitoring network. Figure 3-3 shows these locations relative to the study area.

3.5.5 Data Gaps in Land Subsidence Monitoring Network

The only identified data gap within the land subsidence monitoring network concerns the observed land subsidence near Arbuckle, Colusa County. There is no extensometer installed in the vicinity of Arbuckle and the existing benchmarks are currently surveyed too infrequently to adequately quantify inelastic land subsidence.

3.5.6 Proposed Actions to Address Data Gaps

3.5.6.1 Proposed Benchmarks

No additional benchmarks are recommended at this time.

3.5.6.2 Proposed Extensometers

Colusa County staff identified three potential locations on County-owned sites for a new multiple completion monitoring well and collocated extensometer, based on evaluation of lowered groundwater levels and land subsidence. These three sites are shown on Figure 3-3. Of the three potential sites, the site located within Arbuckle has been identified by County staff to be the most potentially beneficial for monitoring groundwater levels and land subsidence in the Arbuckle area, per sustainability indicators (23 CCR §354.34(c)).

If data collected from the land subsidence monitoring network is deemed insufficient to enable estimation of the rate and extent of land subsidence in accordance with sustainability indicator needs, increased repeat survey frequency of existing benchmarks or the installation of new benchmarks or extensometers may be recommended.

3.5.6.3 Additional Proposed Actions

The counties should evaluate future DWR benchmark repeat survey results as they are made available. Ongoing studies using InSAR data should also be reviewed as they are published.

3.6 Surface Water Monitoring

3.6.1 Requirements

The surface water monitoring network should be designed such that the sustainability indicators are adequately covered not just over the entire basin, but also within any specific GSP-defined Management Areas. The only sustainability indicator supported by the surface water monitoring network is the depletion of interconnected surface water. The surface water monitoring network shall be designed to characterize spatial and temporal changes between interconnected waters such that depletions from surface waters caused by groundwater extraction can be calculated (23 CCR §354.34(c)(6); DWR, 2016).

Table 3-7. Land Subsidence Monitoring Network Extensometers and Benchmarks

County	Station ID	Latitude	Longitude	Datum	Site Type
Colusa	16N02W05B001	39.27527	-122.10568	NAD 83 ^(a)	Extensometer ^(b)
Colusa	17N02W09H002	39.34170	-122.08377	NAD 83	Extensometer
Glenn	19N02W08Q001	39.51596	-122.11143	NAD 83	Extensometer
Glenn	21N02W33M001	39.62970	-122.10045	NAD 83	Extensometer
Glenn	22N02W15C002	39.76352	-122.07727	NAD 83	Extensometer
Colusa	P269	38.99953	-122.35455	NAD 83	Continuous GPS Benchmark ^(c)
Colusa	P270	39.24377	-122.05520	NAD 83	Continuous GPS Benchmark
Colusa	P272	39.14548	-121.93406	NAD 83	Continuous GPS Benchmark
Glenn	P336	39.52808	-122.43047	NAD 83	Continuous GPS Benchmark
Sutter	SUTB	39.20583	-121.82058	NAD 83	Continuous GPS Benchmark
Butte	7MIL	39.63631	-121.90997	NAD 83	Benchmark ^(d)
Butte	B109	39.53803	-121.90831	NAD 83	Benchmark
Butte	BCEX	39.57706	-121.90831	NAD 83	Benchmark
Butte	FARM	39.79686	-121.98742	NAD 83	Benchmark
Butte	FREX	39.66553	-121.92506	NAD 83	Benchmark
Butte	MERI	39.75321	-121.93846	NAD 83	Benchmark
Butte	NLD7	39.36214	-121.86808	NAD 83	Benchmark
Butte	NLD8	39.55158	-121.84047	NAD 83	Benchmark
Butte	WLMS	39.50361	-121.85653	NAD 83	Benchmark
Colusa	TC22	39.05000	-122.15000	NAD 83	Benchmark
Colusa	TC23	39.01000	-122.09000	NAD 83	Benchmark
Colusa	COLI	39.18514	-121.99461	NAD 83	Benchmark
Colusa	D850	39.14268	-122.21725	NAD 83	Benchmark
Colusa	DELE	39.27528	-122.10558	NAD 83	Benchmark
Colusa	DLP2	39.19113	-122.17126	NAD 83	Benchmark
Colusa	DODG	39.37739	-122.02070	NAD 83	Benchmark
Colusa	F200	39.31920	-122.19154	NAD 83	Benchmark
Colusa	FINK	39.25828	-122.19148	NAD 83	Benchmark
Colusa	GORD	39.40956	-122.00997	NAD 83	Benchmark
Colusa	GRNO	39.05664	-121.96914	NAD 83	Benchmark
Colusa	H62U	39.12059	-122.29094	NAD 83	Benchmark
Colusa	HAHN	39.08068	-122.09838	NAD 83	Benchmark
Colusa	HARB	39.24734	-122.03128	NAD 83	Benchmark
Colusa	HPKN	39.21772	-122.08883	NAD 83	Benchmark
Colusa	JRM4	38.92774	-121.84330	NAD 83	Benchmark
Colusa	LAUX	39.24547	-121.95867	NAD 83	Benchmark
Colusa	LONE	39.17702	-122.07852	NAD 83	Benchmark
Colusa	LUSA	38.97056	-122.02556	NAD 83	Benchmark
Colusa	NLD6	39.11442	-122.01828	NAD 83	Benchmark
Colusa	PTNM	39.33181	-121.95453	NAD 83	Benchmark
Colusa	SECO	39.02883	-122.06393	NAD 83	Benchmark
Colusa	SR65	39.31529	-122.03400	NAD 83	Benchmark
Colusa	STEG	39.34150	-122.08425	NAD 83	Benchmark
Colusa	T644	39.13183	-122.13209	NAD 83	Benchmark
Colusa	W850	39.37778	-122.24806	NAD 83	Benchmark
Colusa	WAYN	38.99358	-121.95819	NAD 83	Benchmark
Colusa	WHEA	39.07662	-121.89427	NAD 83	Benchmark
Colusa	WILK	38.99058	-121.86709	NAD 83	Benchmark
Colusa	WBND	39.04187	-121.83686	NAD 83	Benchmark
Glenn	1122	39.51501	-121.93004	NAD 83	Benchmark
Glenn	1500	39.46406	-121.92539	NAD 83	Benchmark

Table 3-7. Land Subsidence Monitoring Network Extensometers and Benchmarks

County	Station ID	Latitude	Longitude	Datum	Site Type
Glenn	2085	39.74664	-122.12269	NAD 83	Benchmark
Glenn	2966	39.79034	-122.22586	NAD 83	Benchmark
Glenn	6064	39.39964	-122.28803	NAD 83	Benchmark
Glenn	A107	39.58564	-122.40492	NAD 83	Benchmark
Glenn	ADOB	39.39075	-121.95015	NAD 83	Benchmark
Glenn	AGUI	39.72608	-122.24058	NAD 83	Benchmark
Glenn	ARTO	39.62432	-122.20473	NAD 83	Benchmark
Glenn	B107	39.61136	-122.52858	NAD 83	Benchmark
Glenn	BIGB	39.46424	-121.87054	NAD 83	Benchmark
Glenn	BIGW	39.67254	-122.33616	NAD 83	Benchmark
Glenn	C200	39.40630	-122.19228	NAD 83	Benchmark
Glenn	CAPA	39.78244	-122.10402	NAD 83	Benchmark
Glenn	CHER	39.66815	-122.25317	NAD 83	Benchmark
Glenn	CREE	39.73149	-122.41332	NAD 83	Benchmark
Glenn	EXT1	39.62967	-122.10220	NAD 83	Benchmark
Glenn	FREN	39.58243	-122.24968	NAD 83	Benchmark
Glenn	GLEN	39.52165	-122.01480	NAD 83	Benchmark
Glenn	H285	39.55203	-122.35723	NAD 83	Benchmark
Glenn	HAMI	39.74437	-122.02057	NAD 83	Benchmark
Glenn	HOWA	39.42011	-121.89788	NAD 83	Benchmark
Glenn	JACI	39.58242	-122.01000	NAD 83	Benchmark
Glenn	K852	39.69694	-122.19524	NAD 83	Benchmark
Glenn	KAIS	39.70917	-122.03745	NAD 83	Benchmark
Glenn	L191	39.58203	-122.12229	NAD 83	Benchmark
Glenn	LARK	39.49276	-122.08760	NAD 83	Benchmark
Glenn	M107	39.46981	-122.19286	NAD 83	Benchmark
Glenn	1118	39.65967	-122.02694	NAD 83	Benchmark
Glenn	MINO	39.46442	-122.13664	NAD 83	Benchmark
Glenn	NORM	39.40751	-122.13629	NAD 83	Benchmark
Glenn	BEND	39.62986	-121.99831	NAD 83	Benchmark
Glenn	ORLA	39.76848	-122.19233	NAD 83	Benchmark
Glenn	OWEN	39.46565	-122.24895	NAD 83	Benchmark
Glenn	P30W	39.65274	-122.15119	NAD 83	Benchmark
Glenn	PETE	39.69582	-122.10299	NAD 83	Benchmark
Glenn	PROV	39.52184	-122.08860	NAD 83	Benchmark
Glenn	PMPR	39.78431	-122.04597	NAD 83	Benchmark
Glenn	Q107	39.52422	-122.23729	NAD 83	Benchmark
Glenn	S106	39.71978	-122.54948	NAD 83	Benchmark
Glenn	U107	39.53084	-122.32621	NAD 83	Benchmark
Glenn	V380	39.78232	-122.29498	NAD 83	Benchmark
Glenn	VIOL	39.76637	-122.07760	NAD 83	Benchmark
Glenn	W215	39.79579	-122.54653	NAD 83	Benchmark
Glenn	WALK	39.52420	-122.16497	NAD 83	Benchmark
Glenn	WILD	39.71269	-121.96469	NAD 83	Benchmark
Glenn	WILL	39.43593	-122.07612	NAD 83	Benchmark
Glenn	WILN	39.57084	-122.19379	NAD 83	Benchmark
Glenn	WINS	39.66351	-122.52596	NAD 83	Benchmark
Glenn	Y380	39.76272	-122.33738	NAD 83	Benchmark
Glenn	Y852	39.45718	-122.01761	NAD 83	Benchmark
Sutter	WR18	39.25300	-121.89167	NAD 83	Benchmark
Sutter	304	39.14328	-121.90174	NAD 83	Benchmark
Tehama	BUTG	39.81825	-122.32561	NAD 83	Benchmark

Table 3-7. Land Subsidence Monitoring Network Extensometers and Benchmarks

County	Station ID	Latitude	Longitude	Datum	Site Type
Tehama	271F	39.83394	-122.08514	NAD 83	Benchmark
Tehama	N852	39.80959	-122.17255	NAD 83	Benchmark
Yolo	DRAI	38.92529	-121.91457	NAD 83	Benchmark
Yolo	X200	38.90576	-121.98328	NAD 83	Benchmark

(a) Latitude and longitude values are in North American Datum of 1983 (NAD 83), decimal degrees.

(b) Extensometers within the study area are installed within intervals from approximately 700-800 ft, bgs.

(c) Continuous global positioning system (GPS) benchmark.

(d) Benchmarks are those listed for the Sacramento Valley Height Modernization Project within the Counties of Colusa and Glenn and within other Counties near the study area boundary.

In accordance with the Monitoring Network BMP (DWR, 2016) and 23 CCR §354.34(c)(6), data collected from the surface water monitoring network shall be sufficient to:

- Characterize flow conditions including surface water discharge, stage, and baseflows.
- Identify locations and flow periods of ephemeral and intermittent stream channels, if any. The Monitoring Network BMPs state that monitoring of ephemeral or intermittent streams should be conducted annually or as appropriate to characterize flow changes (DWR, 2016).
- Identify temporal trends due to localized, regional, and seasonal surface water discharge and groundwater extraction impacts.
- Identify and collect information necessary to evaluate adverse effects to the beneficial use of surface water.
- Support evaluation of DQOs.

Stream gages should be located along stream reaches with known groundwater connection, per the Monitoring Network BMP (DWR, 2016). Locations should account for surface water diversions and return flows, if necessary. According to the Monitoring Network BMP (DWR, 2016), surface water discharge monitoring should be accompanied by groundwater level monitoring within shallow wells. The requirements specific to the shallow groundwater monitoring wells are discussed in Section 3.2.1 of this report.

Monitoring sites shall include the following information (23 CCR §352.4(a) through (b), tabulated in Appendix C):

- Unique station identifier;
- Site description (NAD 83, latitude and longitude decimal degrees to five decimal places);
- Monitoring type;
- Measurement(s) taken;
- Monitoring frequency;
- Location;
- Elevation of ground surface (accurate to 0.1 feet NAVD 88);
- Elevation and description of reference point (accurate to 0.5 feet NAVD 88); and
- Description of standards used to install the monitoring site.

3.6.2 Monitoring Protocols

According to the Monitoring Protocols BMP (DWR, 2016), streamflow measurements should be collected, analyzed, and reported in accordance with procedures defined in the USGS Water Supply Paper 2175, volumes 1 and 2 (Rantz, 1982). This methodology is currently being used for both DWR and USGS existing surface water monitoring networks.

Surface water flows shall be recorded in cubic feet per second and surface water elevations shall be recorded in feet with a minimum accuracy of 0.1 feet relative to NAVD 88, in accordance with the requirements described in 23 CCR §352.4(a) (tabulated in Appendix C). Water volumes shall be reported in acre-feet.

3.6.3 Existing Surface Water Monitoring Programs

Table 3-8 lists the existing surface water monitoring networks with publicly available data and their respective websites.

Table 3-8. Existing Surface Water Monitoring Programs			
Surface Water Monitoring Network	Responsible Agency	Surface Water Monitoring Type	Website
National Water Information System (NWIS)	U.S. Geological Survey (USGS)	Discharge	https://waterdata.usgs.gov/nwis
Water Data Library (WDL)	California Department of Water Resources (DWR)	Discharge	http://wdl.water.ca.gov/waterdatalibrary/
California Data Exchange Center (CDEC)	California DWR & U.S. Bureau of Reclamation (USBR)	Discharge; Reservoir Conditions	http://cdec.water.ca.gov/cdecstation2/ https://www.usbr.gov/

3.6.3.1 Existing Surface Water Discharge Monitoring Locations

The USGS NWIS and DWR WDL contain information regarding stream flows and river stages. The California Data Exchange Center (CDEC) database contains stream flows and/or river stage data. There are two gages that measure flows into and out of the Black Butte Reservoir, which separates the Corning and Colusa Subbasins (Figure 3-4). There is one stream gage west of the Colusa Subbasin in Glenn County along South Fork Willow Creek and six stream gages along the Sacramento River, which flows along the eastern boundary the Colusa Subbasin. There is one gage on the Sacramento River, bounding the Corning Subbasin. There are two stream gages along Butte Creek (bounding the eastern extent of the West Butte Subbasin). One gage is located in Butte County, upstream of the study area, and the other is farther downstream in Colusa County.

3.6.3.2 Existing Reservoir Monitoring Locations

The USBR monitors reservoir conditions at Black Butte Reservoir, Stony Gorge Reservoir, and East Park Reservoir and flow conditions at Rainbow Dam. Much of this information is included in the CDEC database, but can also be found on the USBR website (Table 3-8) or requested from USBR staff. Rainbow Dam is located in Colusa County, west of the Colusa Subbasin, and regulates flows into the East Park Reservoir. Discharge from East Park Reservoir flows downstream, northward into Stony Gorge Reservoir, which discharges flows towards Black Butte Reservoir (Figure 3-4).

3.6.4 Surface Water Monitoring Network

Table 3-9 lists the current surface water monitoring network. These station locations are shown on Figure 3-4 and include all of the active stream gages and monitoring sites managed by CDEC, DWR, USBR, and USGS within and surrounding the study area.

3.6.5 Data Gaps in Surface Water Monitoring Network

The temporal changes in ephemeral and intermittent stream stage and flow within the study area may not be sufficiently addressed by the existing surface water monitoring network to the extent required by 23 CCR §354.34(c).

Colusa Basin Drain outflows from the Colusa Subbasin are not currently monitored, and historical monitoring records for Colusa Basin Drain outflows from the Colusa Subbasin are not available within the CDEC, NWIS, and WDL databases.

3.6.6 Proposed Actions to Address Data Gaps

The major perennial surface waters that bound and intersect the study area impact not only the groundwater subbasins within the study area, but also the groundwater subbasins adjacent to the study area (Figure 1-1). Surface water monitoring, particularly as related to streamflow depletion, should therefore be addressed at a regional scale. The GSAs within Colusa and Glenn Counties should undertake surface water monitoring network data gap assessment and remediation in collaboration with neighboring GSAs.

Additionally, existing stream and drainage reports should be evaluated for additional information on the timing, stage and magnitude of flows in ephemeral and intermittent streams in the study area. If necessary, site visits should be conducted to address requirements for monitoring of ephemeral and intermittent streams, per 23 CCR §354.34(c)(6).

DWR is reportedly in the process of evaluating the adequacy of existing stream gages to support SGMA implementation. As a result of this effort, it is anticipated that DWR will identify data gaps and develop recommendations regarding the existing stream gage networks. Actions proposed by DWR, if any, should be taken into consideration by the GSAs.

If data collected from the surface water monitoring network are deemed insufficient to enable characterization of the surface water-groundwater interconnection or if data gaps are identified via simulations from a well-calibrated integrated model, locations for additional new monitoring sites should be evaluated.

Table 3-9. Surface Water Monitoring Network Stream Gages

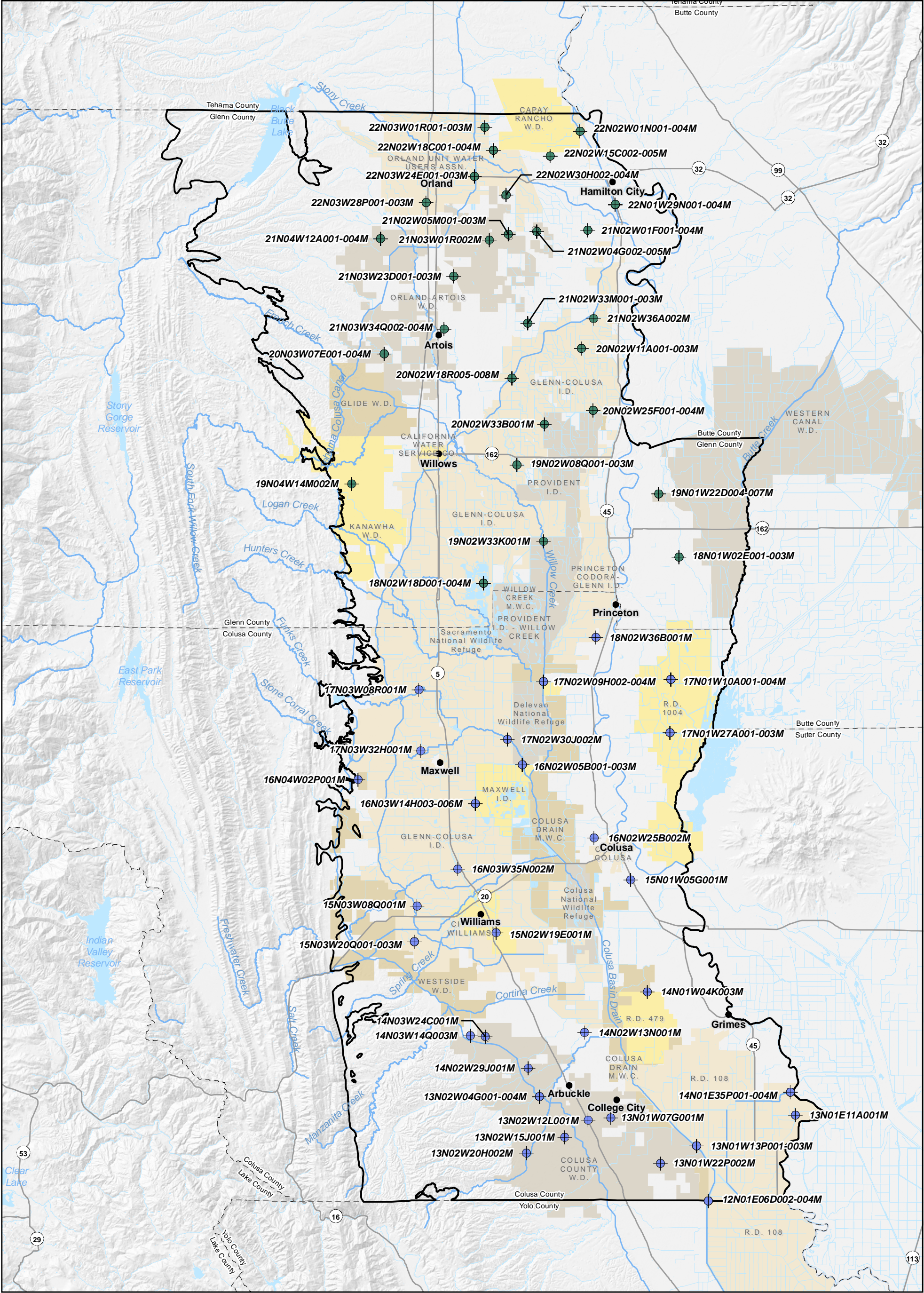
County	Station ID	Station Name	Latitude ^(a)	Longitude	Site Type	Source
Colusa	BTG	Butte Creek at Colusa/Gridley Road	39.361801	121.892662	Stage	CDEC ^(b)
Butte	BWC	Butte Creek near Western Canal	39.555721	121.83651	Discharge ^(c)	CDEC
Colusa	A02967	Butte Slough at Outfall Gates near Colusa	39.195161	121.936567	Stage	WDL ^(d)
Sutter	A02972	Butte Slough near Meridian	39.171474	121.901649	Discharge	WDL
Colusa	A02976	Colusa Basin Drain at Highway 20	39.195512	122.060517	Discharge	WDL
Colusa	A02981	Colusa Weir Spill to Butte Basin near Colusa	39.23682	121.99476	Discharge	WDL
Colusa	A00647	Freshwater Creek at Leesville Road near Williams	39.129339	122.30993	Discharge	WDL
Colusa	MPS	Meridian Pumps	39.148	121.918	Discharge	CDEC
Colusa	A02986	Moulton Weir Spill to Butte Basin near Princeton	39.33821	122.022627	Stage	WDL
Colusa	BTC; A02500	Sacramento River at Butte City	39.45784	121.99416	Discharge	CDEC; WDL
Colusa	11389500	Sacramento River at Colusa	39.214057	122.000251	Discharge	USGS
Glenn	HMC; A02630	Sacramento River at Hamilton City	39.750925	121.997877	Discharge	CDEC; WDL
Glenn	ORD; A02570	Sacramento River at Ord Ferry	39.628132	121.993182	Discharge	CDEC; WDL
Colusa	TIS	Sacramento River at Tisdale Weir	39.02644	121.822083	Discharge	CDEC
Colusa	11390500	Sacramento River below Wilkins Slough near Grimes	39.009974	121.823398	Discharge	USGS
Glenn	WCF	South Fork Willow Creek near Fruto	39.541538	122.390045	Stage	CDEC
Tehama	BBQ	Stony Creek below Black Butte Dam	39.8186	122.3239	Stage	CDEC
Glenn	SCG	Stony Creek near Grizzly Flat (County Road 200A)	39.73181	122.413997	Discharge	CDEC

(a) Latitude and longitude are reported in North American Datum of 1983 (NAD 83), decimal degrees.

(b) California Data Exchange Center (CDEC).

(c) The term "Discharge" means that stream flows are reported. If no flows are reported but stream stage is, then the term "Stage" is used.

(d) California Department of Water Resources (DWR) Water Data Library (WDL).



Symbology

Study Area

Groundwater Monitoring Network

Colusa County Wells

Glenn County Wells

Datum: North American Datum of 1983, California State Plane Zone II, feet.

0 2.5 5

Scale in Miles

Figure 3-1

Groundwater Level Monitoring Network

Counties of Colusa and Glenn Monitoring Network Assessment Report

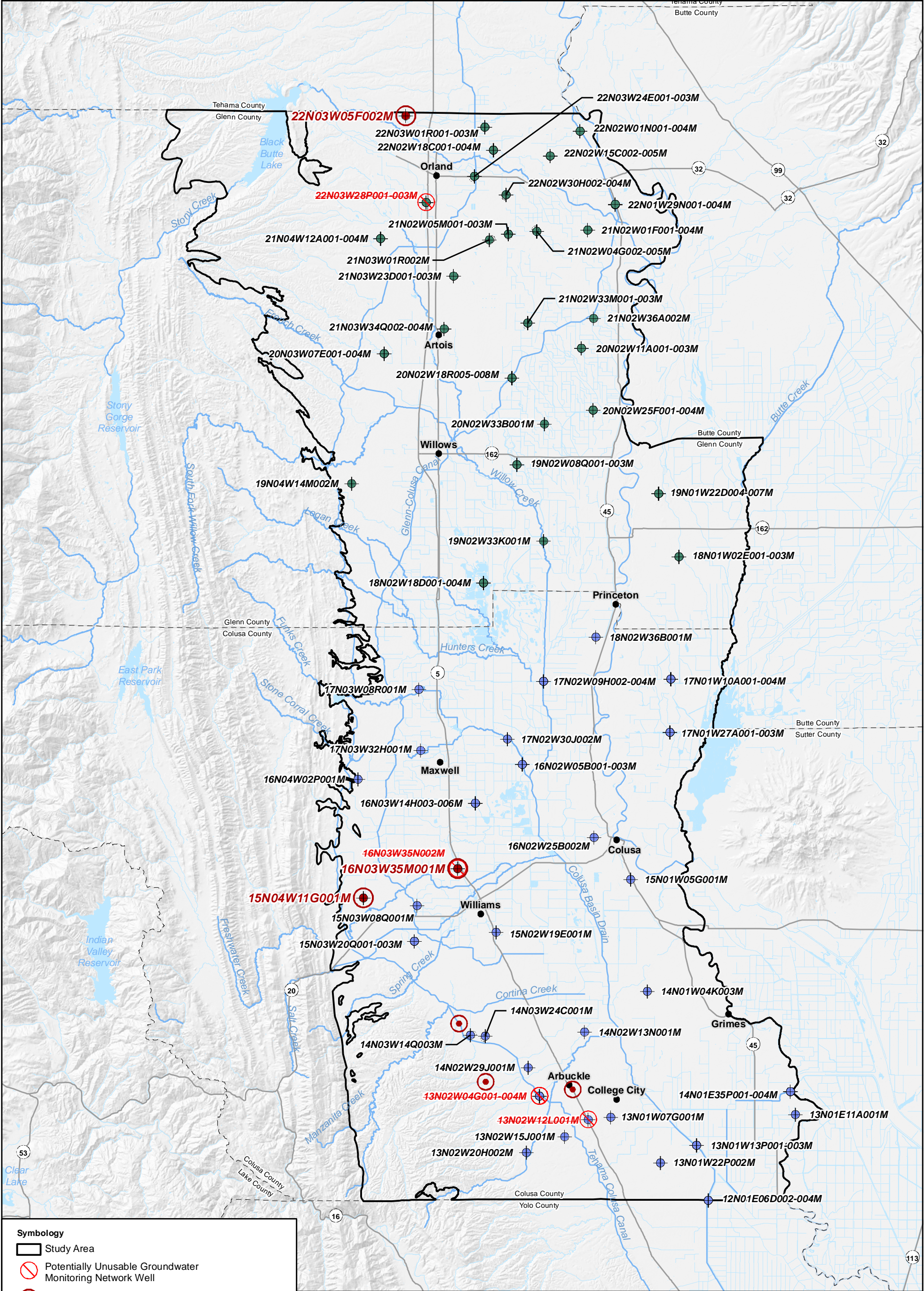
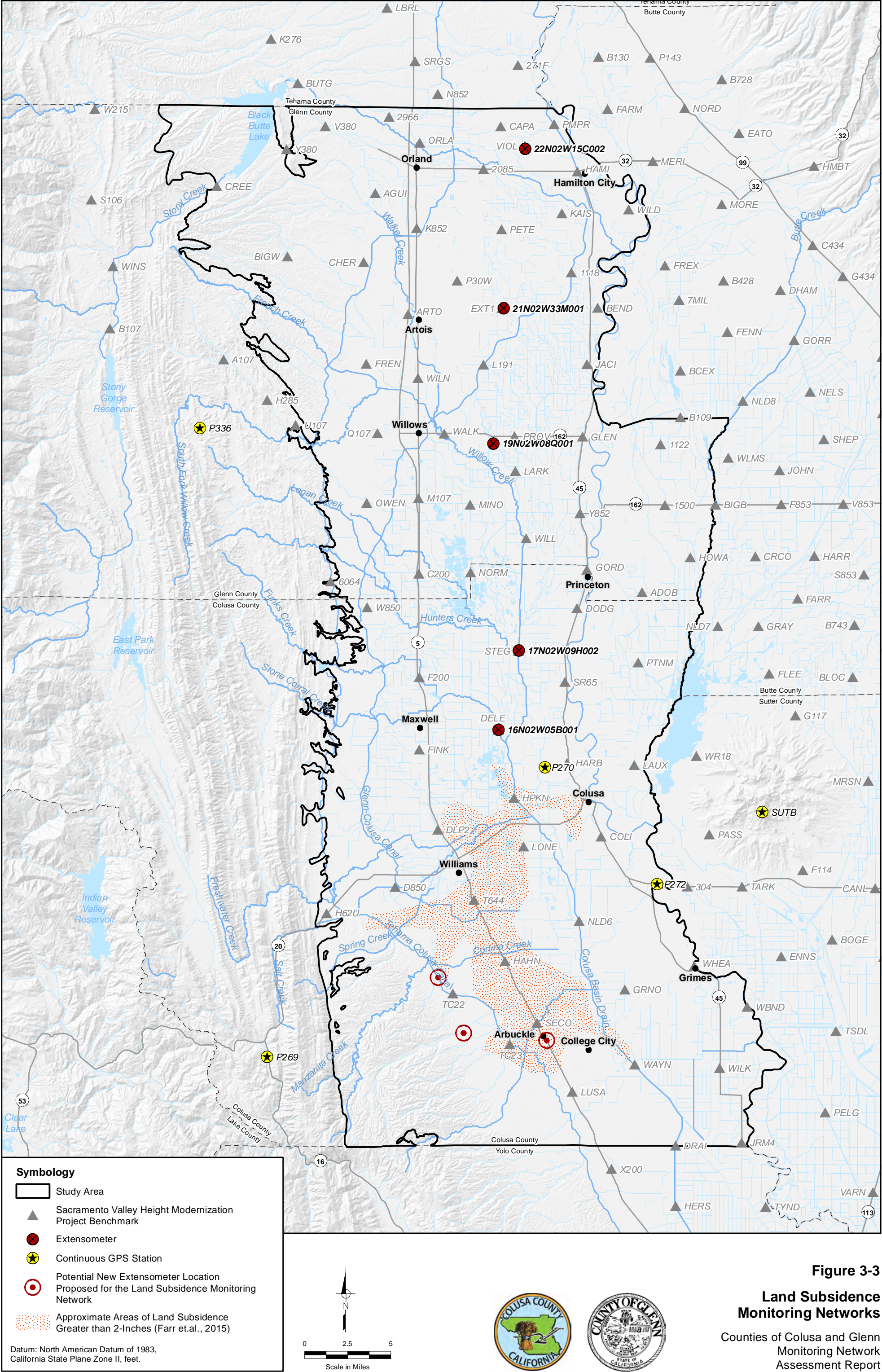


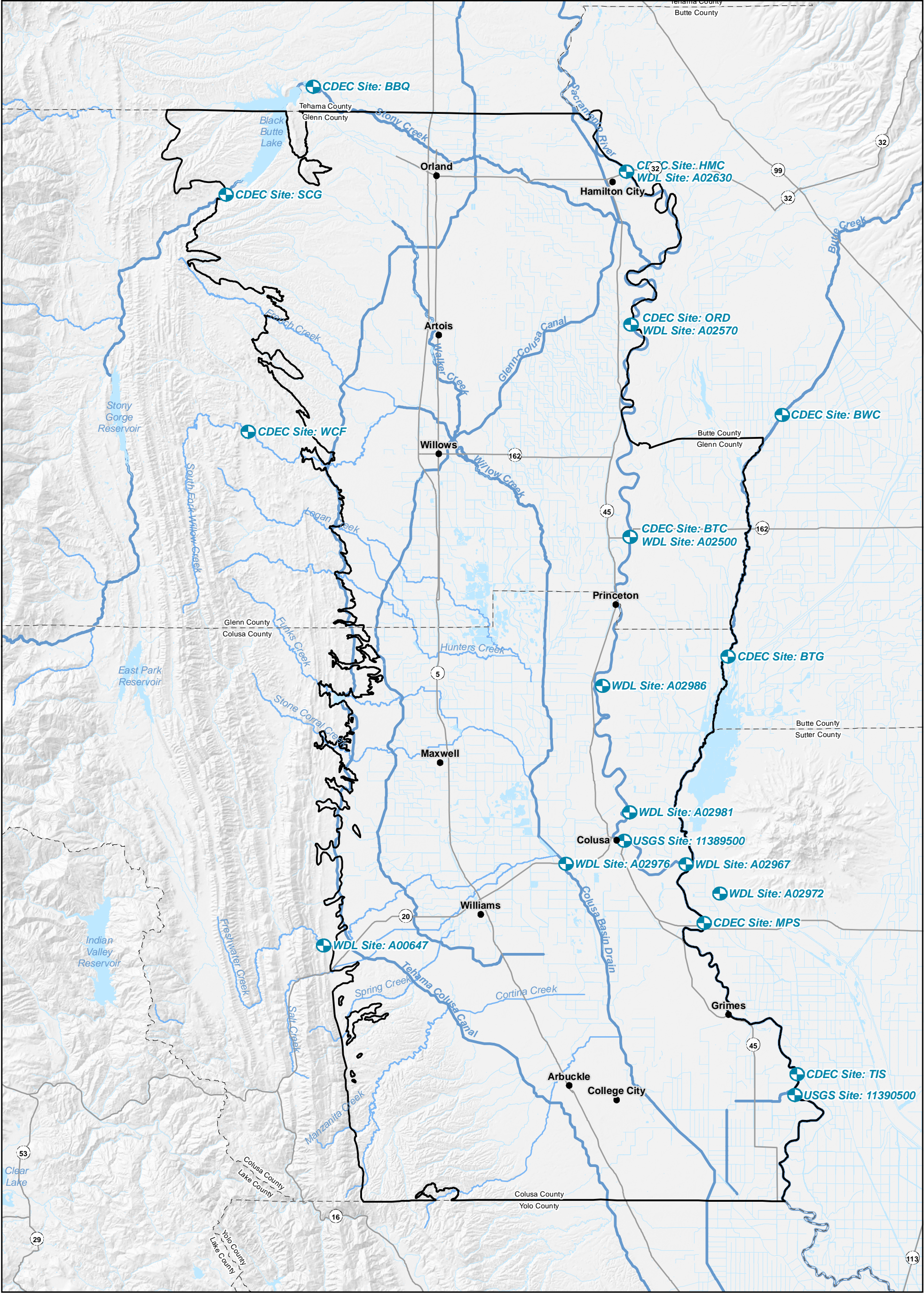
Figure 3-2

**Proposed Changes
to Groundwater Level
Monitoring Networks**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report







Symbology

- Study Area
- Surface Water Monitoring Stream Gage

Datum: North American Datum of 1983,
California State Plane Zone II, feet.

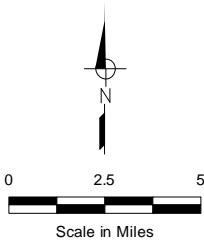


Figure 3-4
Surface Water
Monitoring Networks
Counties of Colusa and Glenn
Monitoring Network
Assessment Report

4.0 CONCLUSIONS AND RECOMMENDATIONS

This report provides an evaluation of the monitoring networks in the Sacramento Valley groundwater subbasins, overlain by the Counties of Colusa and Glenn, including the entire Colusa Subbasin and portions of the Corning and West Butte Subbasins. Existing groundwater level, groundwater quality, land subsidence, and surface water monitoring programs were evaluated using criteria listed in DWR's SGMA GSP Regulations and DWR's Monitoring Network BMP. The networks were evaluated based on the criteria to identify potential data gaps that would limit the sufficiency of the networks to provide representative data for assessing sustainability for five of the six sustainability indicators. The sixth sustainability indicator, seawater intrusion, is neither occurring nor anticipated to occur within the portions of the Colusa, Corning, and West Butte Subbasins within the study area and evaluation of seawater intrusion was, therefore, determined unnecessary for the purposes of this study.

In cases where data gaps were identified, existing monitoring locations not currently included in the evaluated monitoring networks were assessed to fill data gaps. If no suitable existing monitoring sites were available, new monitoring sites were recommended for construction. Conclusions and recommendations for each of the networks are provided below. These conclusions and recommendations are preliminary and will be reevaluated and updated as the Counties' and GSAs' progress with preparation and implementation of GSPs for the Sacramento Valley groundwater subbasins underlying their boundaries, and as new information becomes available.

Groundwater Level Monitoring Network. The current groundwater level monitoring networks were judged to be sufficient for SGMA compliance with several recommended improvements and modifications:

1. Additional monitoring wells may be needed to provide improved spatial coverage in areas of localized groundwater drawdown to the west of the Glenn County communities of Orland and Artois, and in the southern part of the study area near the Colusa County communities of Arbuckle and College City. One multiple completion monitoring well is recommended for construction near Arbuckle.
2. Existing monitoring well 22N03W05F002 should be added to the Glenn County monitoring network to provide additional monitoring capability near the northern edge of the county, within the Corning Subbasin.
3. Existing monitoring well 16N03W35M001 should be added to the Colusa County monitoring network to replace the potentially damaged well 16N03W35N002.
4. Existing monitoring well 15N04W11G001 should be added to the Colusa County monitoring network to extend the network coverage westwards towards the basin margin.
5. Existing Colusa County monitoring wells 13N02W04G001, -003, -004, 13N02W12L001, 16N03W35N002, and Glenn County monitoring well 22N03W28P002 may have collapsed casing and should be inspected and repaired or properly destroyed, depending on the results of the inspection. All of these wells are located within the Colusa Subbasin.

Groundwater Quality Monitoring Network. Groundwater quality degradation in the study area is limited and appears to be adequately addressed under existing and planned monitoring programs. Groundwater quality data collected under existing regulatory programs may be sufficient for SGMA compliance. The Sacramento Valley Water Quality Coalition in coordination with NCWA is currently in the process of defining their groundwater quality monitoring network sites. The California Rice Commission, who also manages lands within the study area, has already defined their groundwater quality trend monitoring network for ILRP compliance. The Counties of Colusa and Glenn should consider coordinating with the Coalition, NCWA, and the California Rice Commission in the establishment and ongoing evaluation of these groundwater quality monitoring network sites with the goal of using data collected under the ILRP for SGMA compliance. The Counties should also consider using groundwater quality data collected through other ongoing regulatory programs such as the SWRCB DDW regulation of municipal supplies and County regulation of small public supply systems for SGMA compliance.

Subsidence Monitoring Network. Land subsidence has been observed in the area around Arbuckle in Colusa County, and additional small amounts of land subsidence have been reported southwest of Orland in Glenn County. Preliminary analysis of repeat survey data suggests that the subsidence occurring near Arbuckle and Orland could be inelastic, or permanent. The DWR report on the 2017 repeat survey is anticipated to provide more insight regarding the permanency of the land subsidence. Construction of a new extensometer located at the site of the proposed new multiple completion monitoring well near Arbuckle is recommended to supplement data from existing extensometers and benchmarks within the study area. The Counties should also participate in ongoing subsidence programs such as the Sacramento Valley Height-Modernization Project.

Surface Water Monitoring Network. The Counties should use existing surface water monitoring programs and data to the extent possible for SGMA compliance. The need for additional monitoring should be reevaluated as needed during preparation of GSPs to support preparation of water budgets and development of numerical flow models. This should be done at a regional scale in cooperation with neighboring subbasins.

5.0 REFERENCES

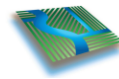
- California Department of Public Health, 2016, MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants: California Department of Public Health (DPH), September 2016.
- California Department of Toxic Substances Control, 2018, EnviroStor: California Department of Toxic Substances (DTSC) Control, website: <http://www.envirostor.dtsc.ca.gov/public/>
- California Department of Transportation (Caltrans), assorted dates, Caltrans Surveys Manual, website: <http://www.dot.ca.gov/landsurveys/surveys-manual.html>
- California Department of Water Resources, 1978, Evaluation of Groundwater Resources: Sacramento Valley, Bulletin 118-6, prepared in cooperation with the U.S. Geological Survey, August 1978.
- California Department of Water Resources, 2001, Lower Colusa Basin Conjunctive Use Investigation: Monitoring Network Completion Report, June 1999.
- California Department of Water Resources, 2004, Memorandum Report: Dunnigan Aquifer Study, Dunnigan Water District, Dunnigan California, April 2004.
- California Department of Water Resources, 2004, Bulletin 118: Sacramento Valley Groundwater Basin, West Butte Subbasin, February 2004.
- California Department of Water Resources, 2006, California's Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, Colusa Subbasin, January 2006.
- California Department of Water Resources, 2006, Bulletin 118: Sacramento Valley Groundwater Basin, Corning Subbasin, January 2006.
- California Department of Water Resources, 2014, Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California: California Department of Water Resources.
- California Department of Water Resources, 2016, Best Management Practices for the Sustainability Management of Groundwater: Monitoring Networks and Identification of Data Gaps: California Department of Water Resources, December 2016.
- California Department of Water Resources, 2016, Best Management Practices for the Sustainability Management of Groundwater: Monitoring Protocols, Standards, and Sites: California Department of Water Resources, December 2016.
- California Department of Water Resources, 2018, Water Data Library: California Department of Water Resources, website: <http://wdl.water.ca.gov/waterdatalibrary/index.cfm>
- California's GIS Council, 2017, Maintaining California's Geodetic Control System Strategic Assessment – Final Draft: California GIS Council's Geodetic Control Works Group, November 2017.
- California State Water Resources Control Board, 2015, GeoTracker GAMA Fact Sheet: State Water Resources Control Board, October 2015.
- California State Water Resources Control Board, 2006, California Code of Regulation Title 22. Division 4. Chapter 15. Article 16. Secondary Water Standards: State Water Resources Control Board, September 2006.
- California State Water Resources Control Board, 2018, GeoTracker Map: State Water Resources Control Board, website: [http:// http://geotracker.waterboards.ca.gov/map/](http://http://geotracker.waterboards.ca.gov/map/)
- California State Water Resources Control Board, 2018, GeoTracker Groundwater Ambient Monitoring and Assessment: State Water Resources Control Board, website: <http://geotracker.waterboards.ca.gov/gama/>
- California State Water Resources Control Board, 2018, Drinking Water Notification levels and Response Levels: An Overview State Water Resources Control Board Division of Drinking Water, February 2018.
- California Water Service, 2016, 2015 Urban Water Management Plan – Willows District: California Water Service, June 2016.

Monitoring Network Assessment Report



- CH2MHILL, 2016, Groundwater Quality Assessment Report: prepared for Central Valley Regional Water Quality Control Board on behalf of Northern California Water Association and Sacramento Valley Water Coalition, January 2016.
- CH2MHILL, 2016, Groundwater Trend Monitoring Workplan and Data Gap Assessment Plan: prepared for Central Valley Regional Water Quality Control Board on behalf of California Rice Commission, March 2016.
- CH2MHILL & PlanTierra, 2013, Rice-Specific Groundwater Assessment Report: prepared for Central Valley Regional Water Quality Control Board on behalf of California Rice Commission, July 2013.
- Davids Engineering, 2018, Glenn County Preliminary Water Budget Development: prepared in cooperation with West Yost Associates for Glenn County, March 2018.
- Ehorn, W., 2016, letter from William Ehorn, North Region Office, California Department of Water Resources to Colusa County Board of Supervisors and Colusa County Water Commission, dated September 2016.
- Farr, T.G., Jones, C., and Liu, Z, 2015, Progress Report: Subsidence in the Central Valley, California: California Department of Water Resources and California Institute of Technology under contract with NASA.
- Frame, J.F. and D'Onofrio, D., 2008, DWR/USBR Sacramento Valley Subsidence Project, Project Report: California Department of Water Resources and U.S. Bureau of Reclamation, September 2008.
- GCID, 1995, Groundwater Management Plan AB3030: Glenn-Colusa Irrigation District.
- Glenn County, 2001, Basin Management Objectives for Groundwater Surface Elevations in Glenn County, California: Glenn County Water Advisory Committee, August 2001.
- Glenn County, 2012, Groundwater Coordinated Resource Management Plan, County Code Directory, Title 20, Chapter 30, 20.030.
- Guy, D.J., 2016, Groundwater Quality Assessment Report Revision: letter to Central Valley Regional Water Quality Control Board, January 2016.
- Harwood, D.S., Helley, E.J. and Doukas, M.P., 1981, Geologic Map of the Chico Monocline and Northeastern Part of the Sacramento Valley, California: U. S. Geological Survey Miscellaneous Investigations Map I-1238, scale 1:62,500.
- Harwood, D.S. and Helley, E.J., 1987, U.S. Geological Survey Professional Paper 1359, Late Cenozoic Tectonism of the Sacramento Valley, California.
- National Water Quality Monitoring Council, 2018, National Water Quality Monitoring Council Water Quality Portal, website: <https://www.waterqualitydata.us/portal/>, accessed January 3, 2018.
- Olmsted, F.H. and Davis, G.H., 1961, Geologic Features and Ground-Water Storage Capacity of the Sacramento Valley, California: U.S. Geological Survey Water-Supply Paper 1497.
- Peters, A., 2016, Review of the Groundwater Trend Monitoring Workplan and Data Gap Assessment Plan for the California Rice Commission: letter to Central Valley Regional Water Quality Control Board, June 2016.
- Rantz, S.E. and others, 1982, Measurement and Computation of Streamflow: U.S. Geological Survey Water Supply Paper 2175, website: <https://pubs.usgs.gov/wsp/wsp2175/>
- Reclamation District 108, 2008, Groundwater Management Plan: Reclamation District No. 108, November 2008.
- U.S. Environmental Protection Agency, 1986, Quality Criteria for Water [The Gold Book]: U.S. Environmental Protection Agency, May 1986.
- U.S. Geological Survey, 2018, National Water Information System: U.S. Geological Survey, website: <https://waterdata.usgs.gov/nwis/qw>
- University of Texas, Austin, 2017, Gravity Recovery and Climate Experiment: University of Texas, Austin jointly implanted by NASA and DLR under the NASA Earth System Science Pathfinder Program, website: <http://www2.csr.utexas.edu/grace/>
- West Yost & Associates, 2018, Hydrogeologic Conceptual Model: prepared in cooperation with Davids Engineering for the Counties of Glenn and Colusa, California, March 2018.

Monitoring Network Assessment Report



DAVIDS
ENGINEERING, INC.



WEST YOST

ASSOCIATES

Wilde, 2005, Preparations for water sampling: Version 2.0: U.S. Geological Survey Techniques of Water Resources Investigations, Book 9, Chapter A1, website:

https://water.usgs.gov/owq/FieldManual/compiled/NFM_complete.pdf

Wood Rodgers, 2008, Colusa County Groundwater Management Plan, September 2008.

APPENDIX A

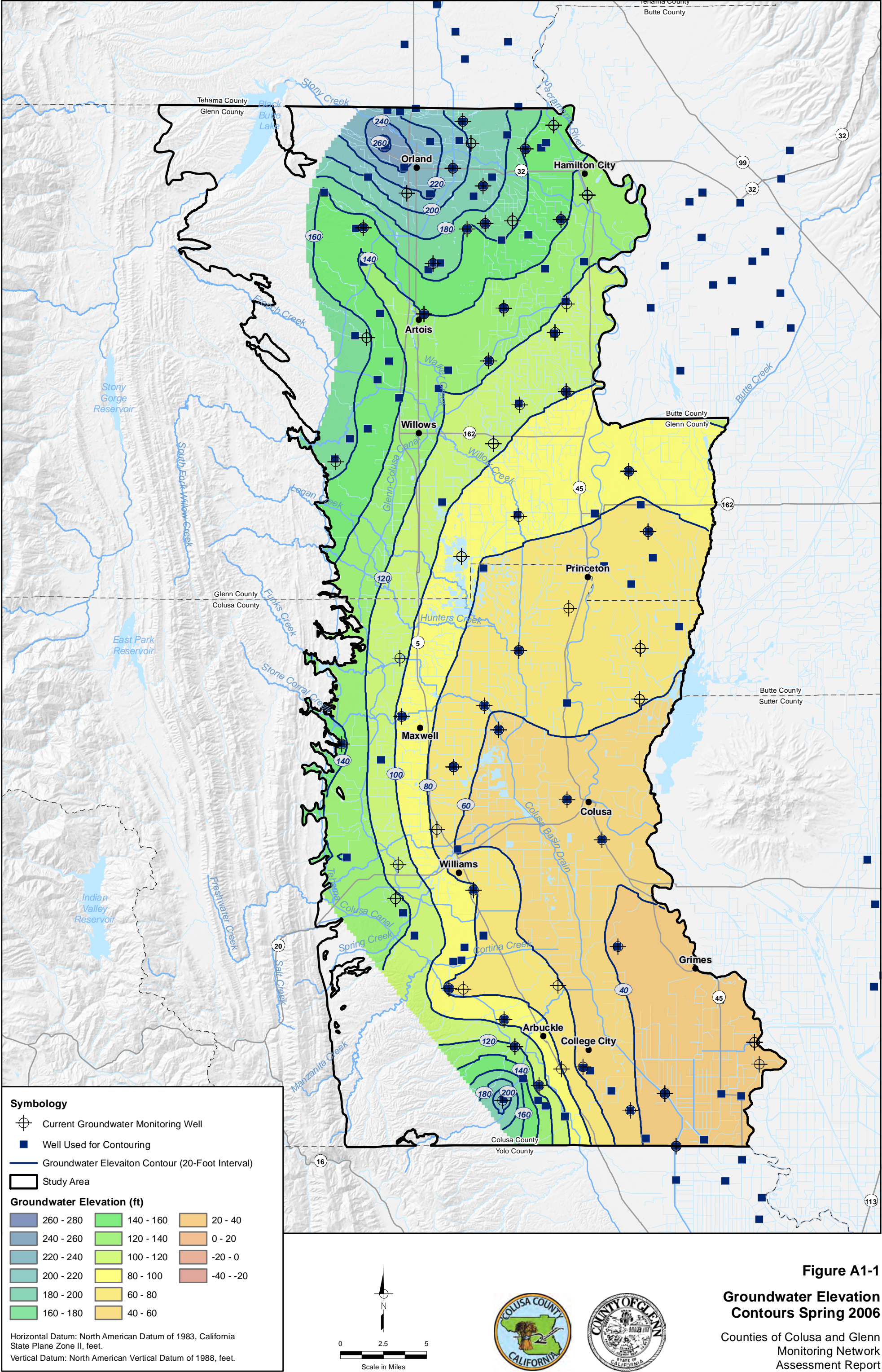
Groundwater Elevation Contours and Hydrographs

Appendix A1. Groundwater Elevation Contours

Appendix A2. Hydrographs for Groundwater Monitoring Network
Wells

APPENDIX A1

Groundwater Elevation Contours



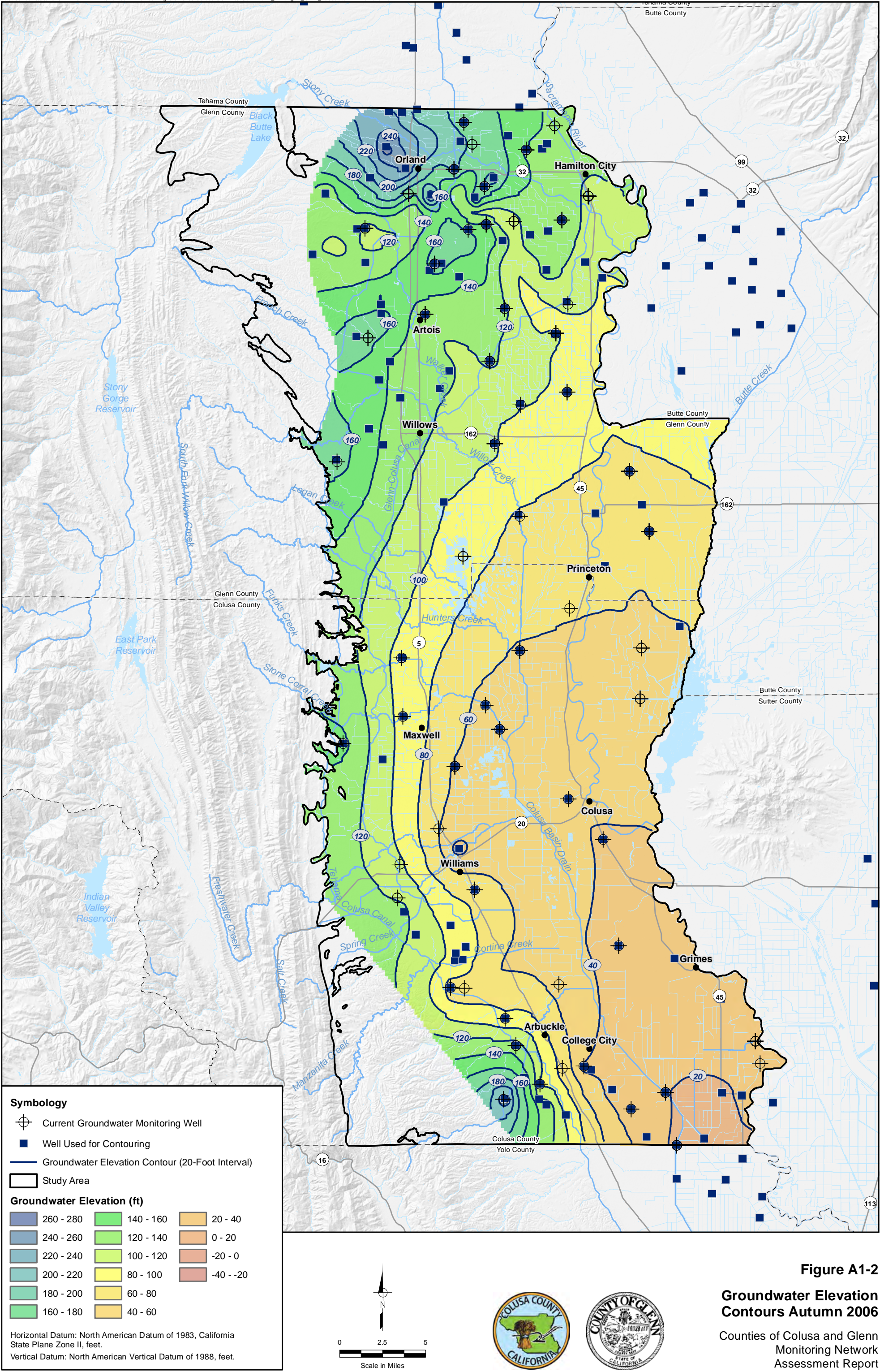


Figure A1-2
Groundwater Elevation
Contours Autumn 2006
Counties of Colusa and Glenn
Monitoring Network
Assessment Report

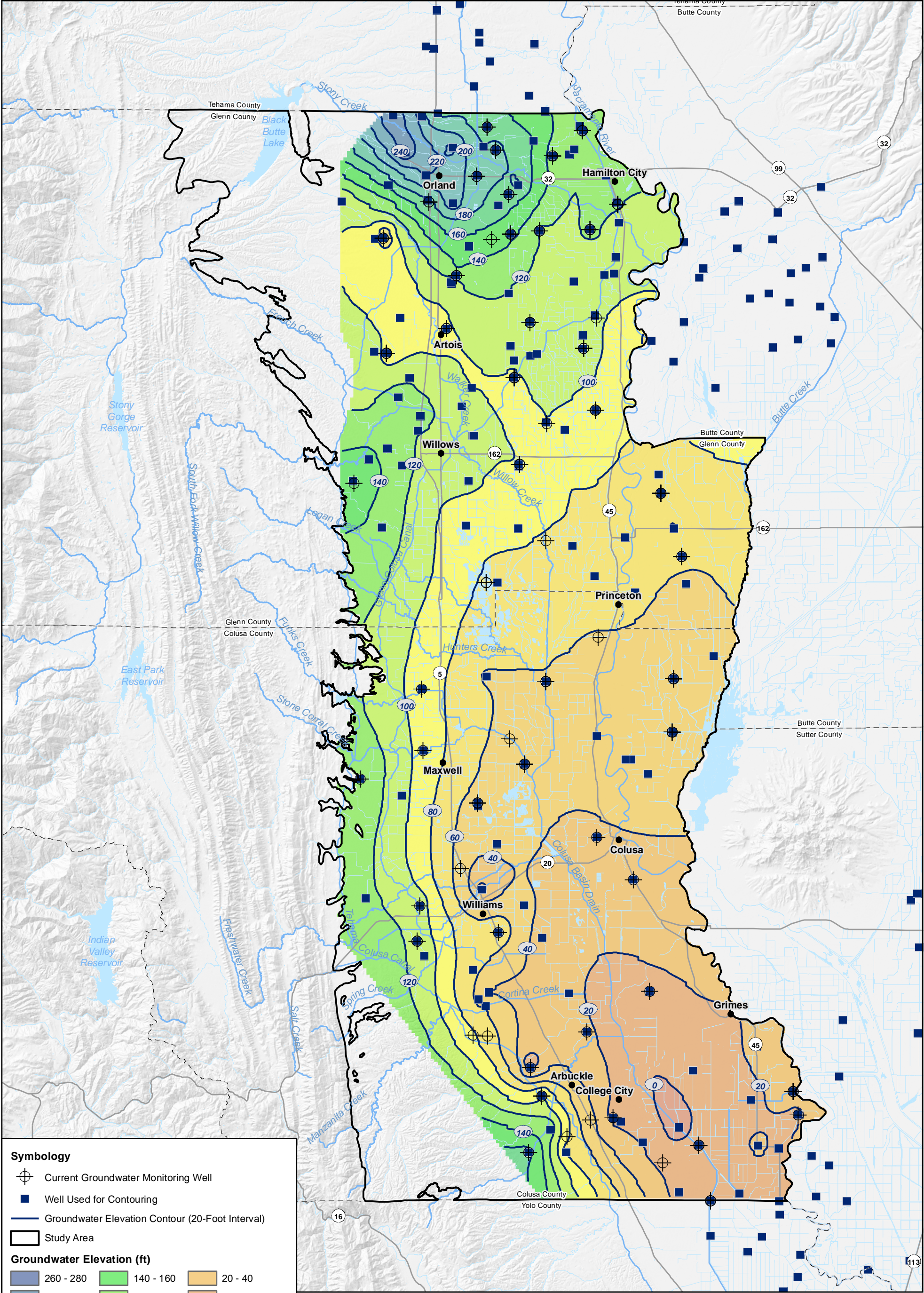
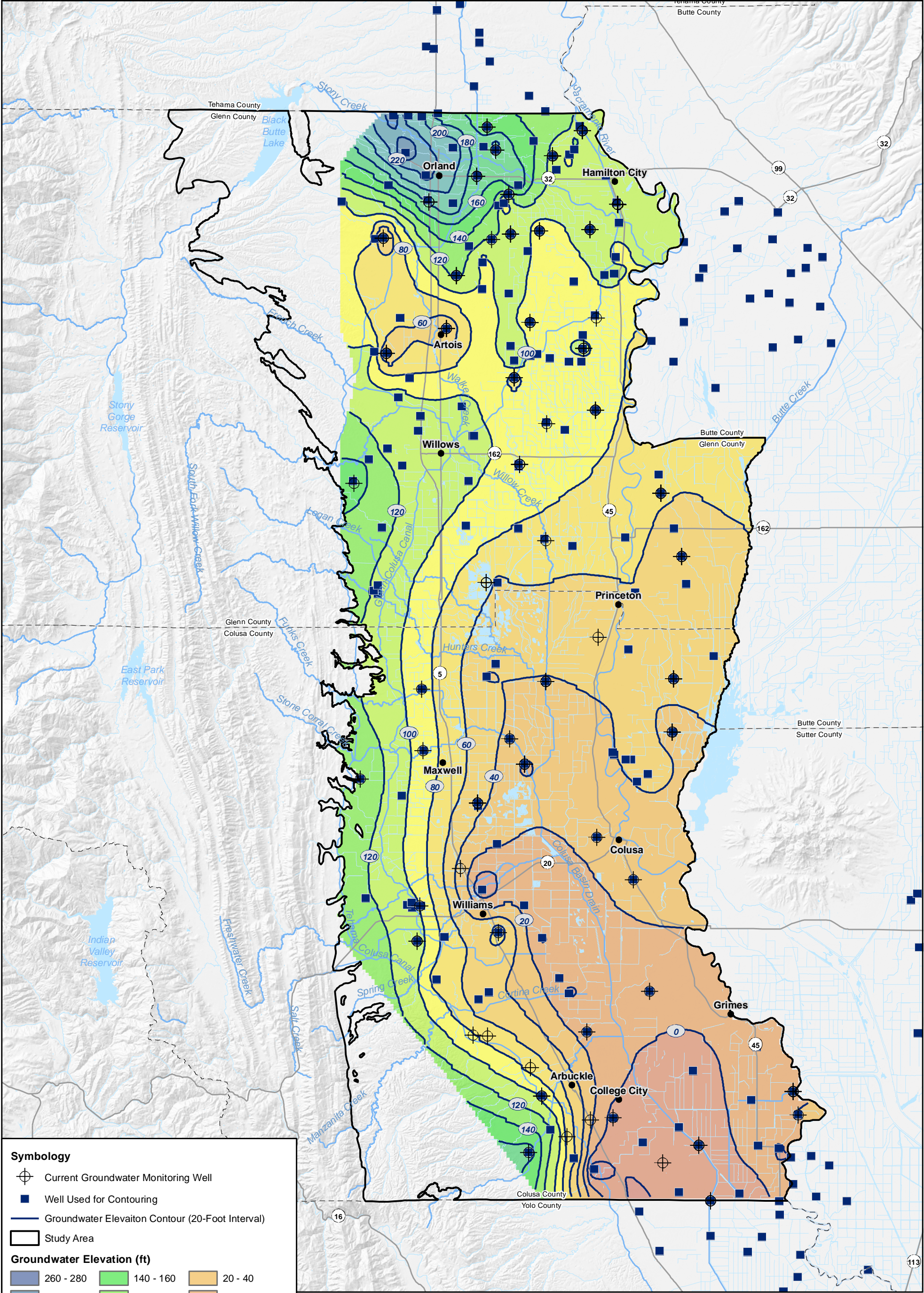


Figure A1-3

**Groundwater Elevation
Contours Spring 2015**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



Horizontal Datum: North American Datum of 1983, California State Plane Zone II, feet.
Vertical Datum: North American Vertical Datum of 1988, feet.

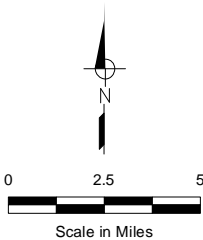


Figure A1-4
Groundwater Elevation Contours Autumn 2015
Counties of Colusa and Glenn
Monitoring Network
Assessment Report

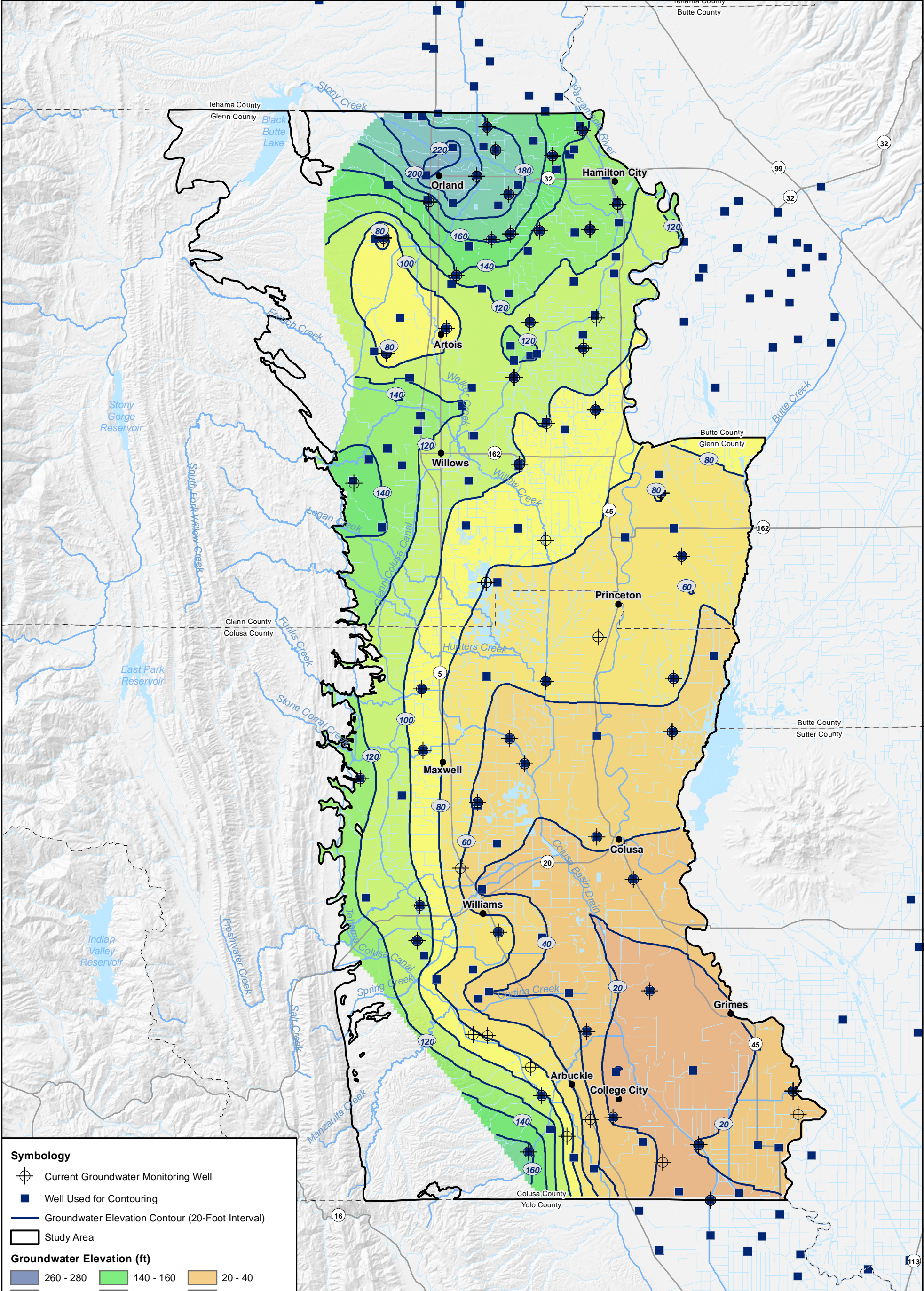
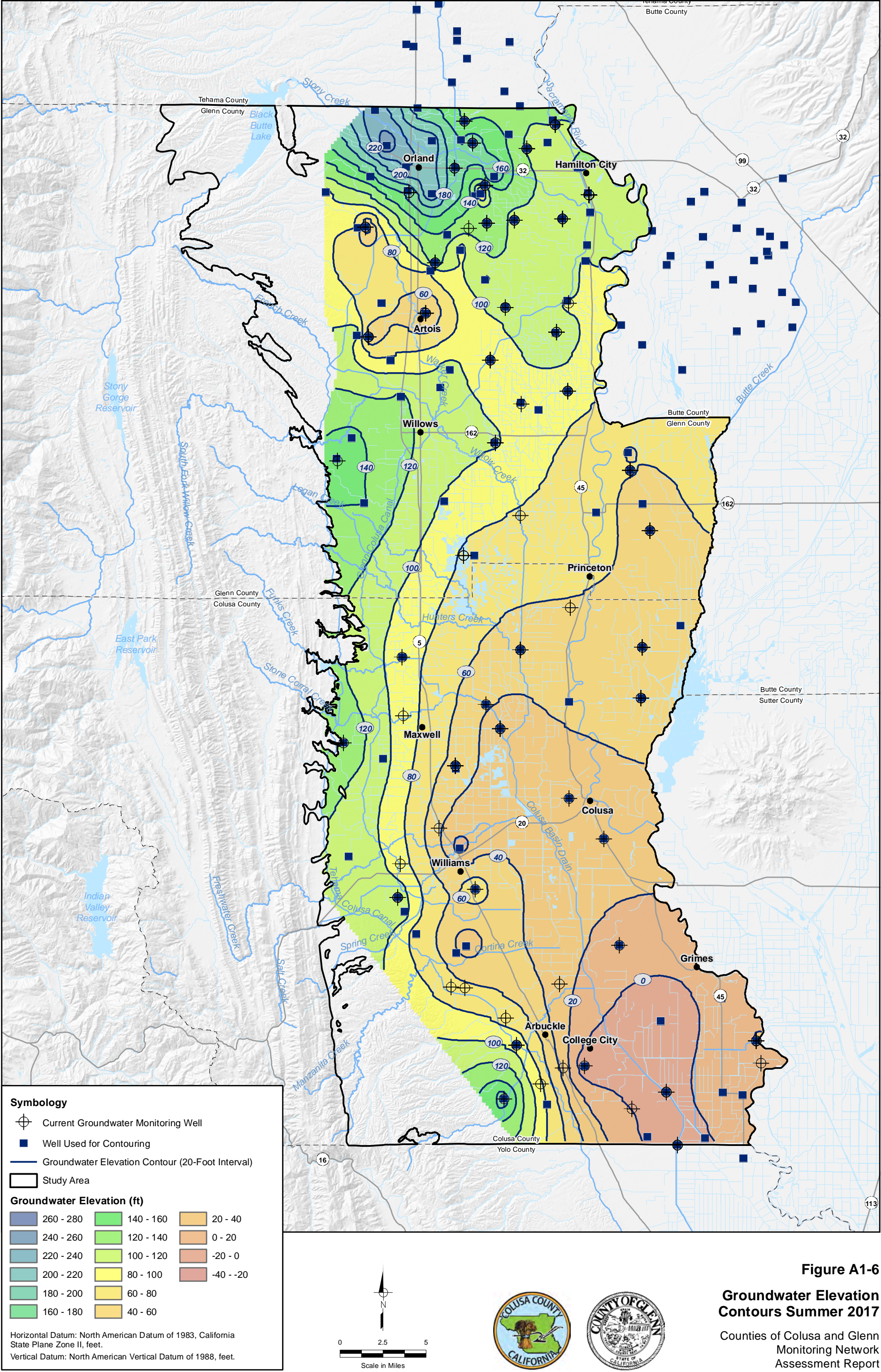


Figure A1-5

Groundwater Elevation
Contours Spring 2017

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



APPENDIX A2

Hydrographs for Groundwater Monitoring Network Wells

Figure A2-1. 12N01E06D002-004M Active Observation Well Cluster
Ground Surface Elevation 27.94 feet msl, NAVD 88

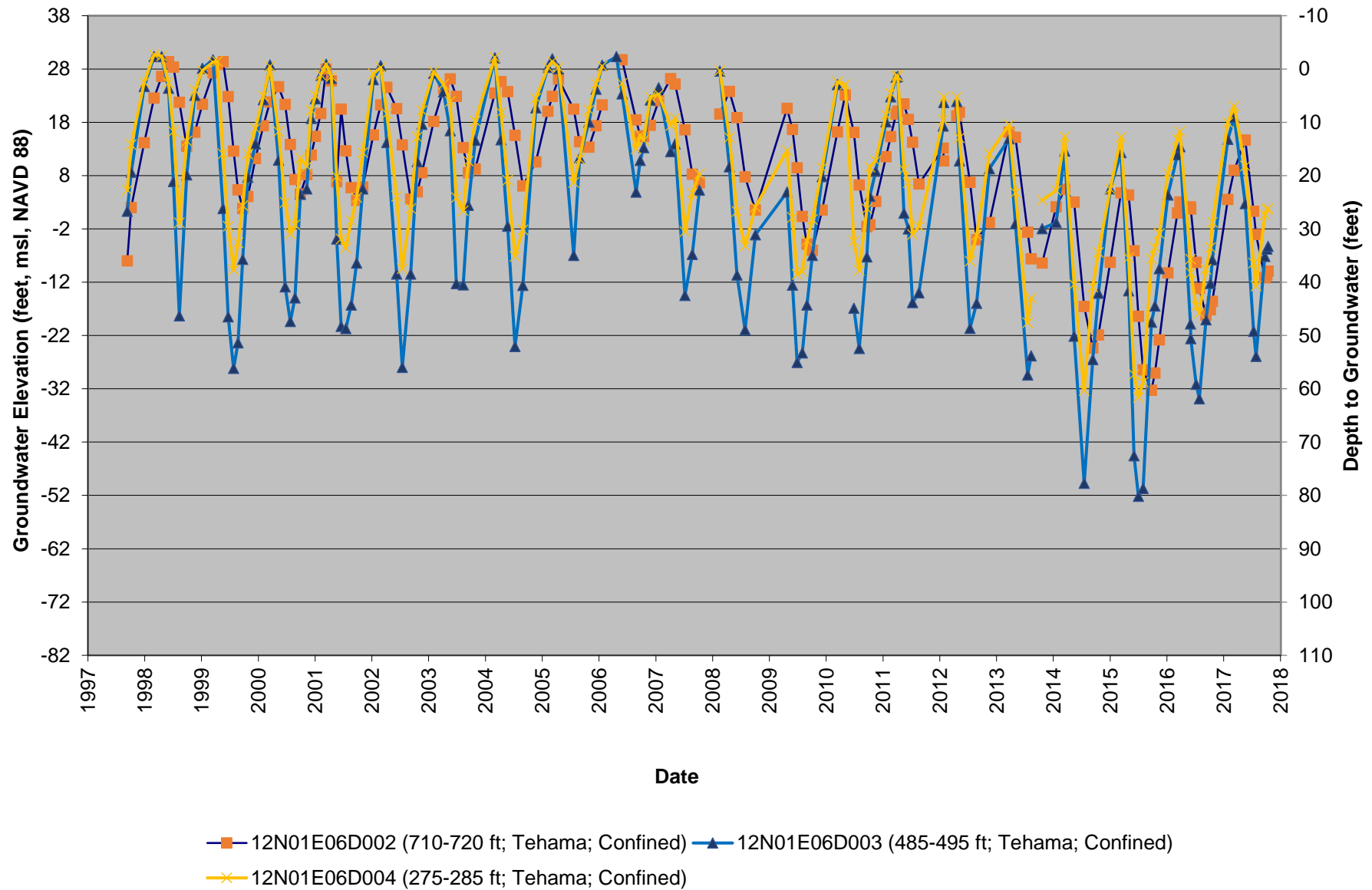


Figure A2-2. 13N01E11A001M Active Residential Well
Ground Surface Elevation 34.19 feet msl, NAVD 88

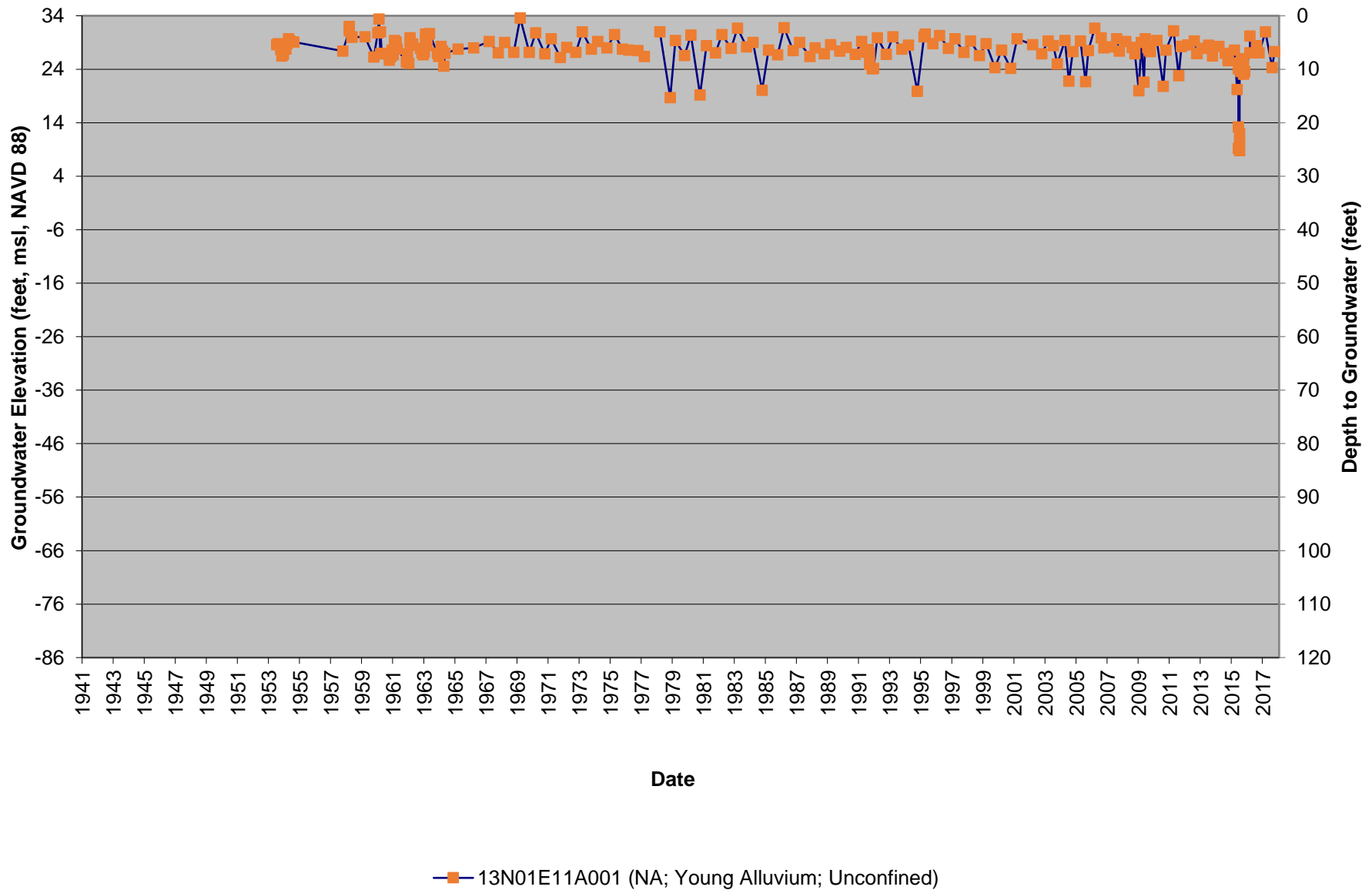


Figure A2-3. 13N01W07G001M Active Irrigation Well
Ground Surface Elevation 90.47 feet msl, NAVD 88

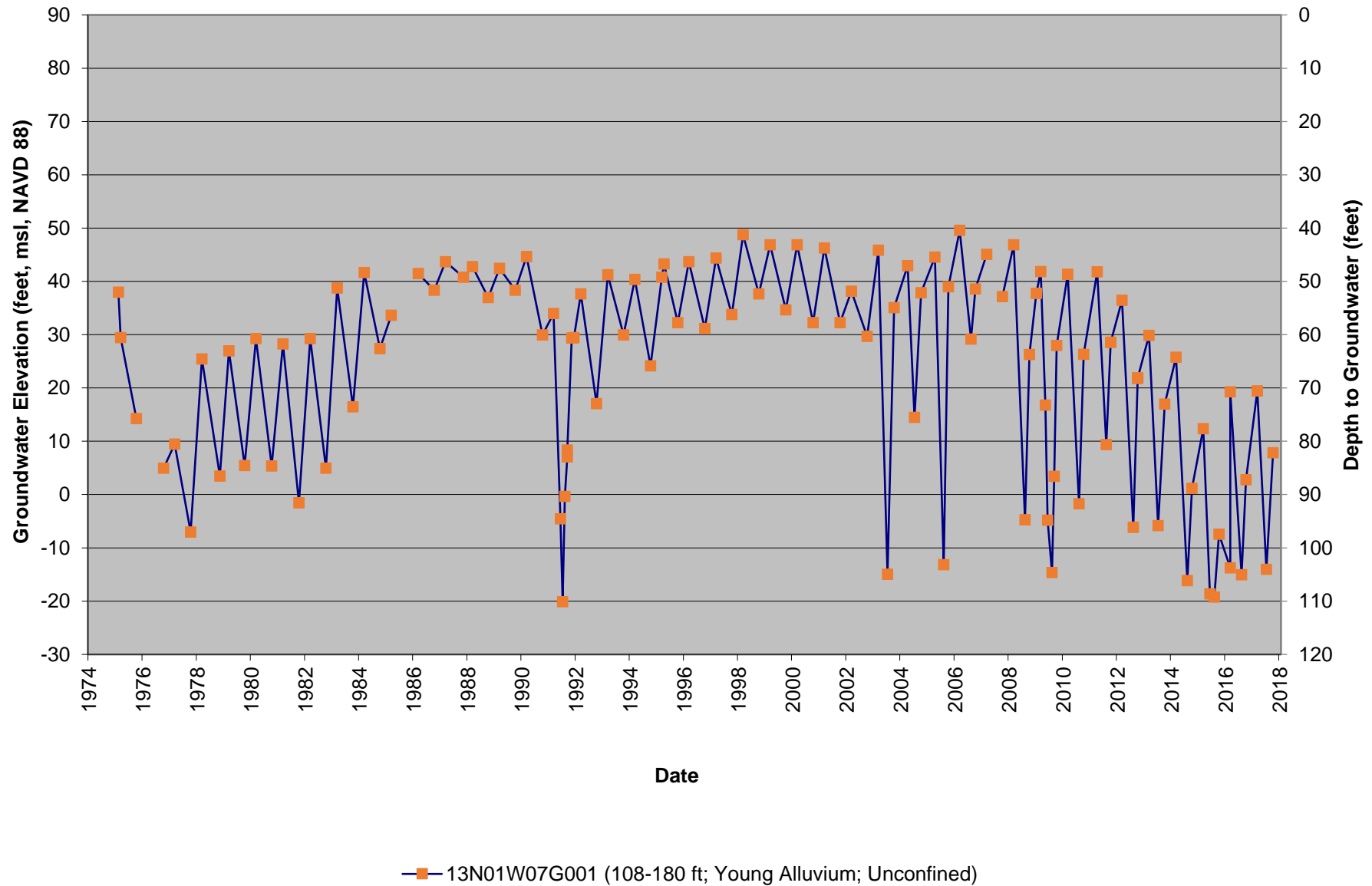


Figure A2-4. 13N01W13P001-003M Active Observation Well Cluster
Ground Surface Elevation 32.23 feet msl, NAVD 88

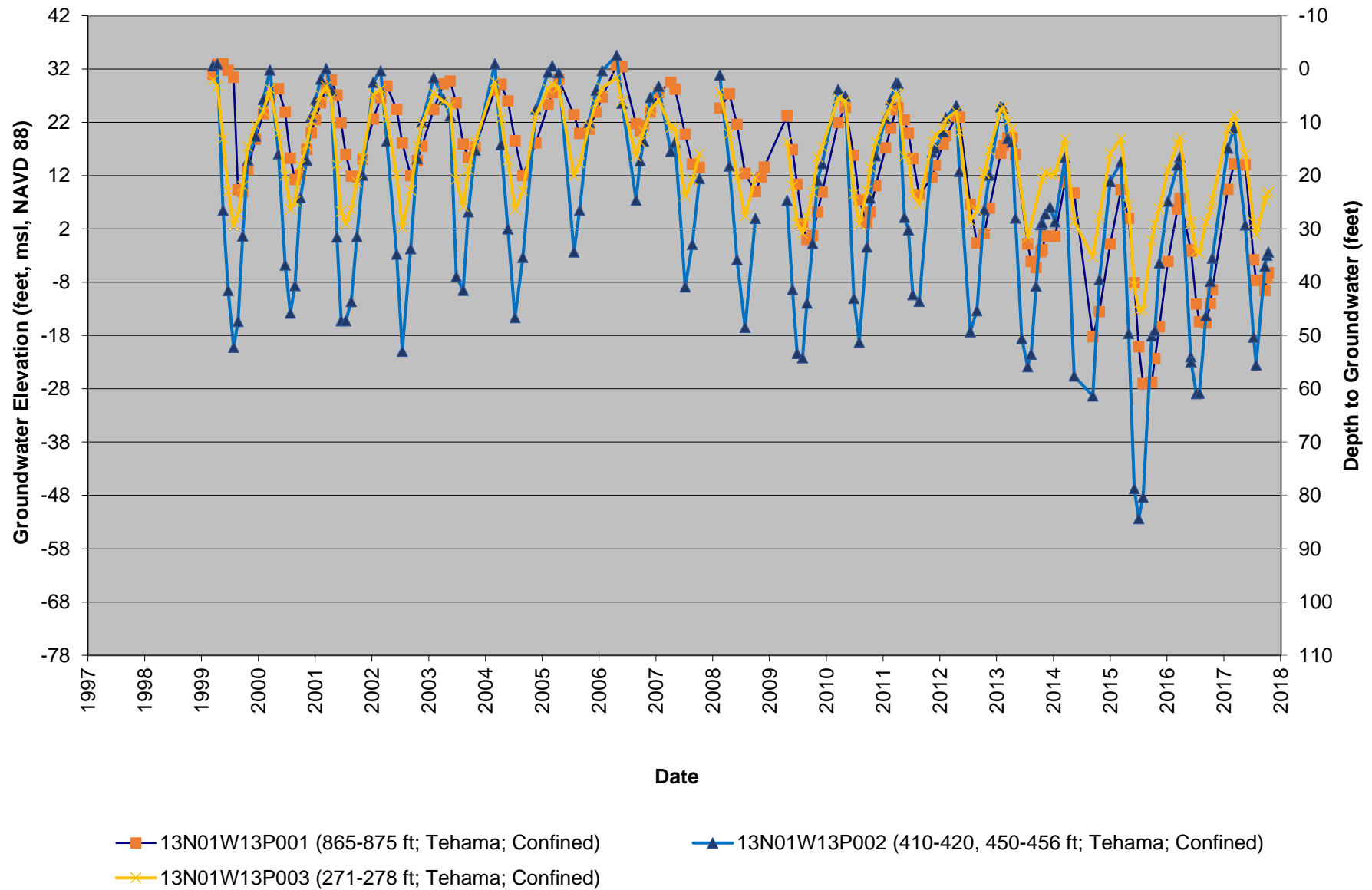


Figure A2-5. 13N01W22P002M Active Irrigation Well
Ground Surface Elevation 60.46 feet msl, NAVD 88

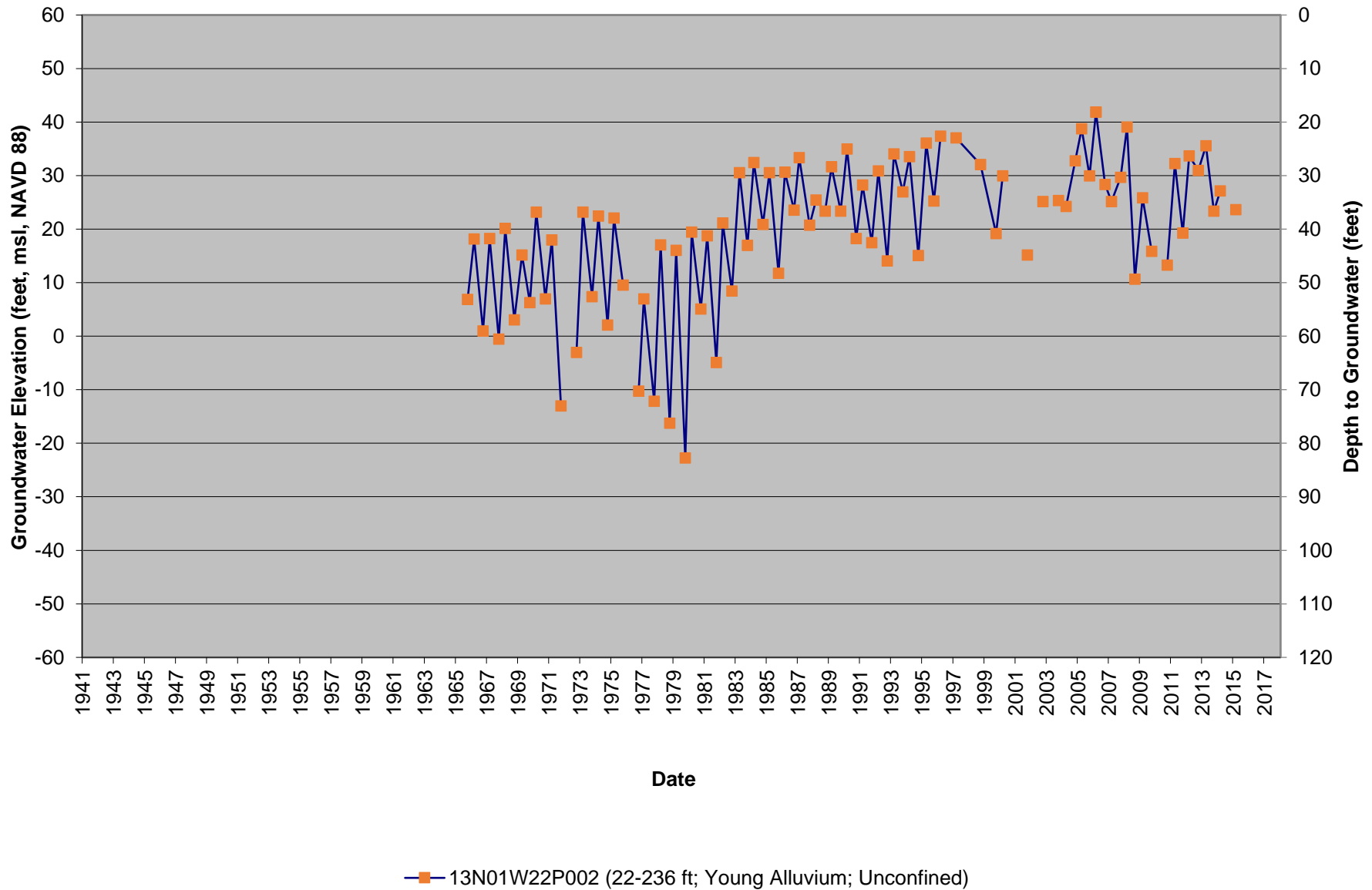


Figure A2-6. 13N02W04G001M, 003M, 004M Active Observation Well Cluster
Ground Surface Elevation 188.81 feet msl, NAVD 88

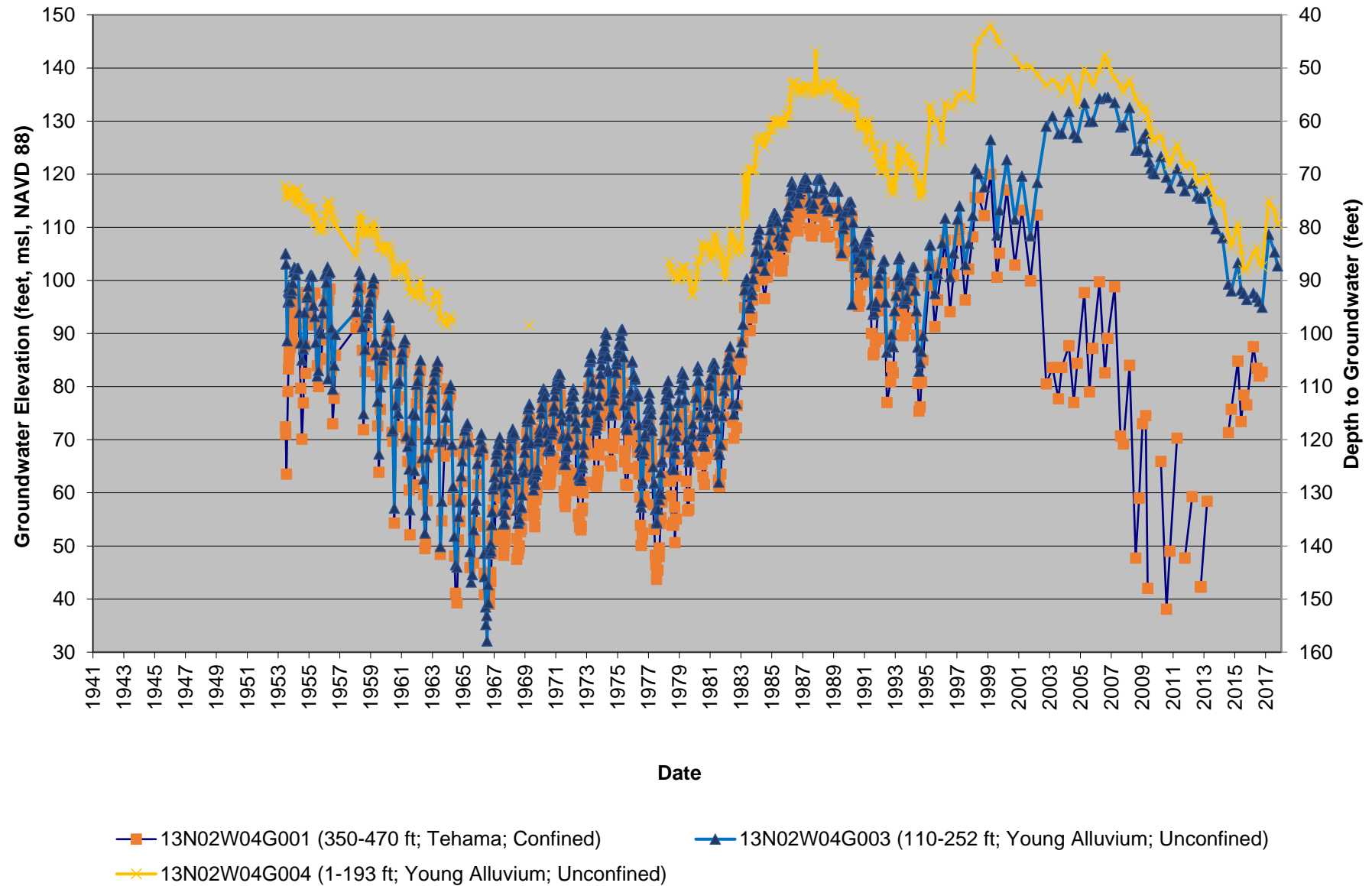


Figure A2-7. 13N02W12L001M Active Irrigation Well
Ground Surface Elevation 135.49 feet msl, NAVD 88

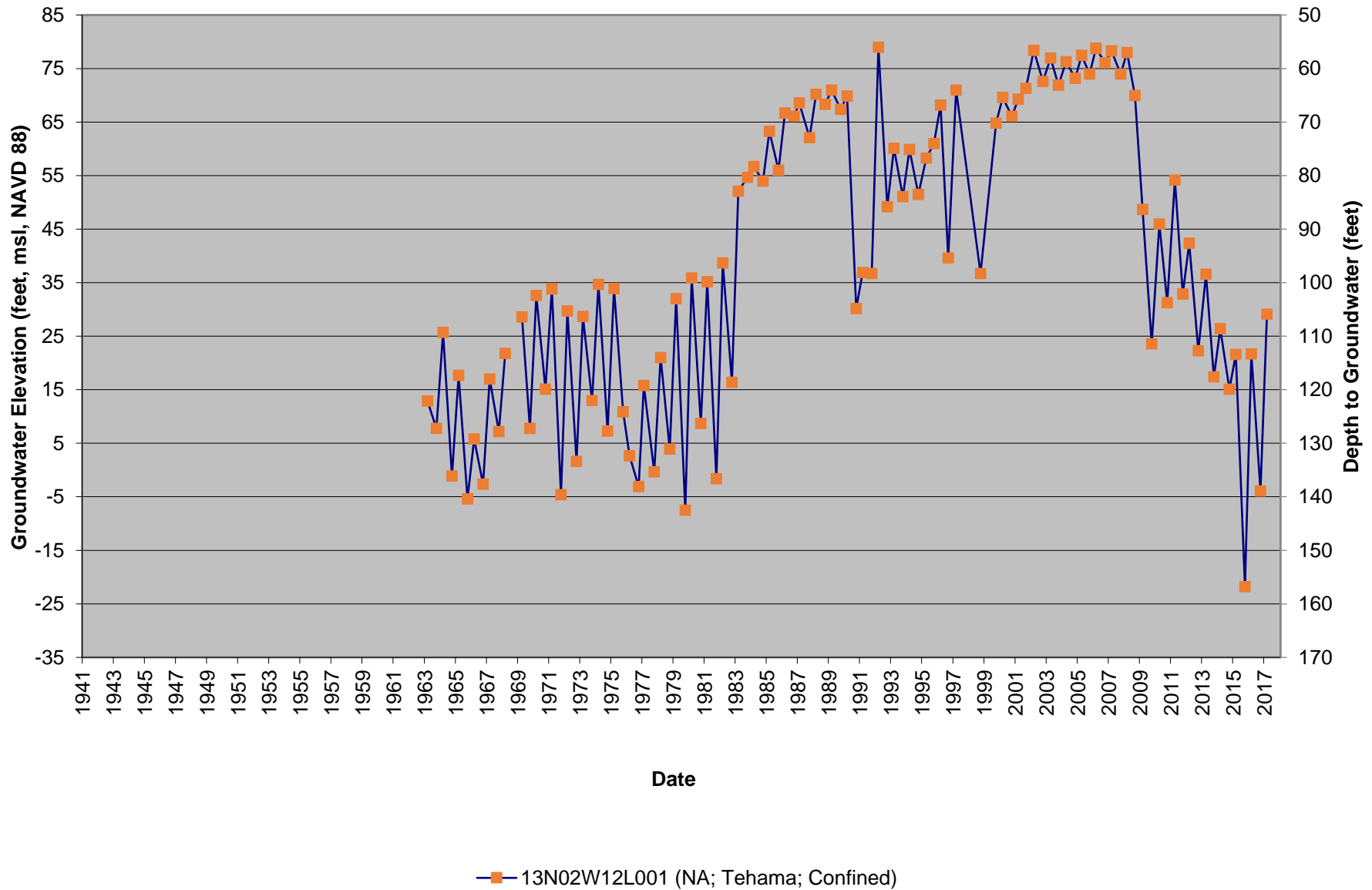


Figure A2-8. 13N02W15J001M Active Residential Well
Ground Surface Elevation 212.52 feet msl, NAVD 88

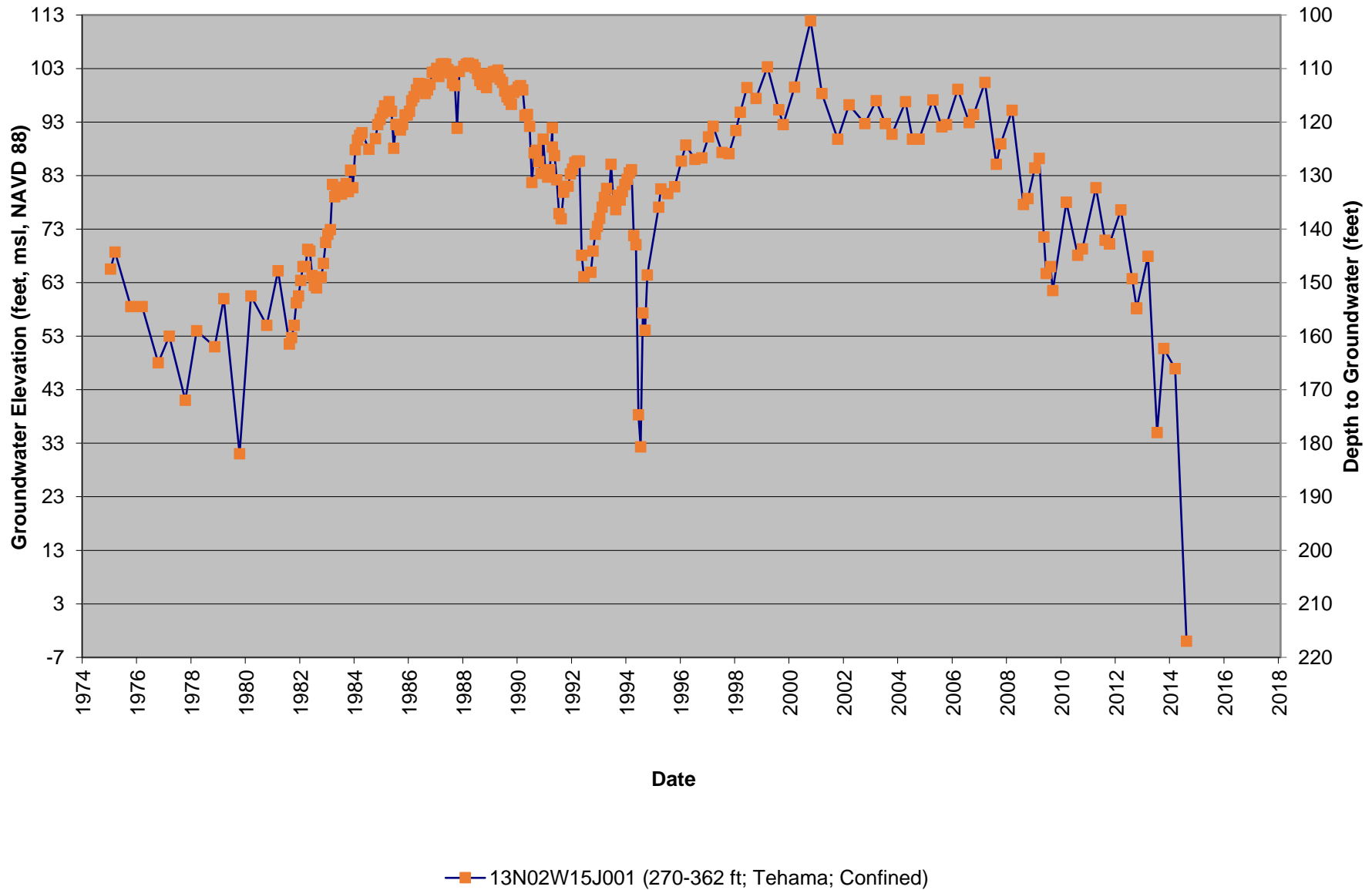


Figure A2-9. 13N02W20H002M Active Residential Well
Ground Surface Elevation 342.58 feet msl, NAVD 88

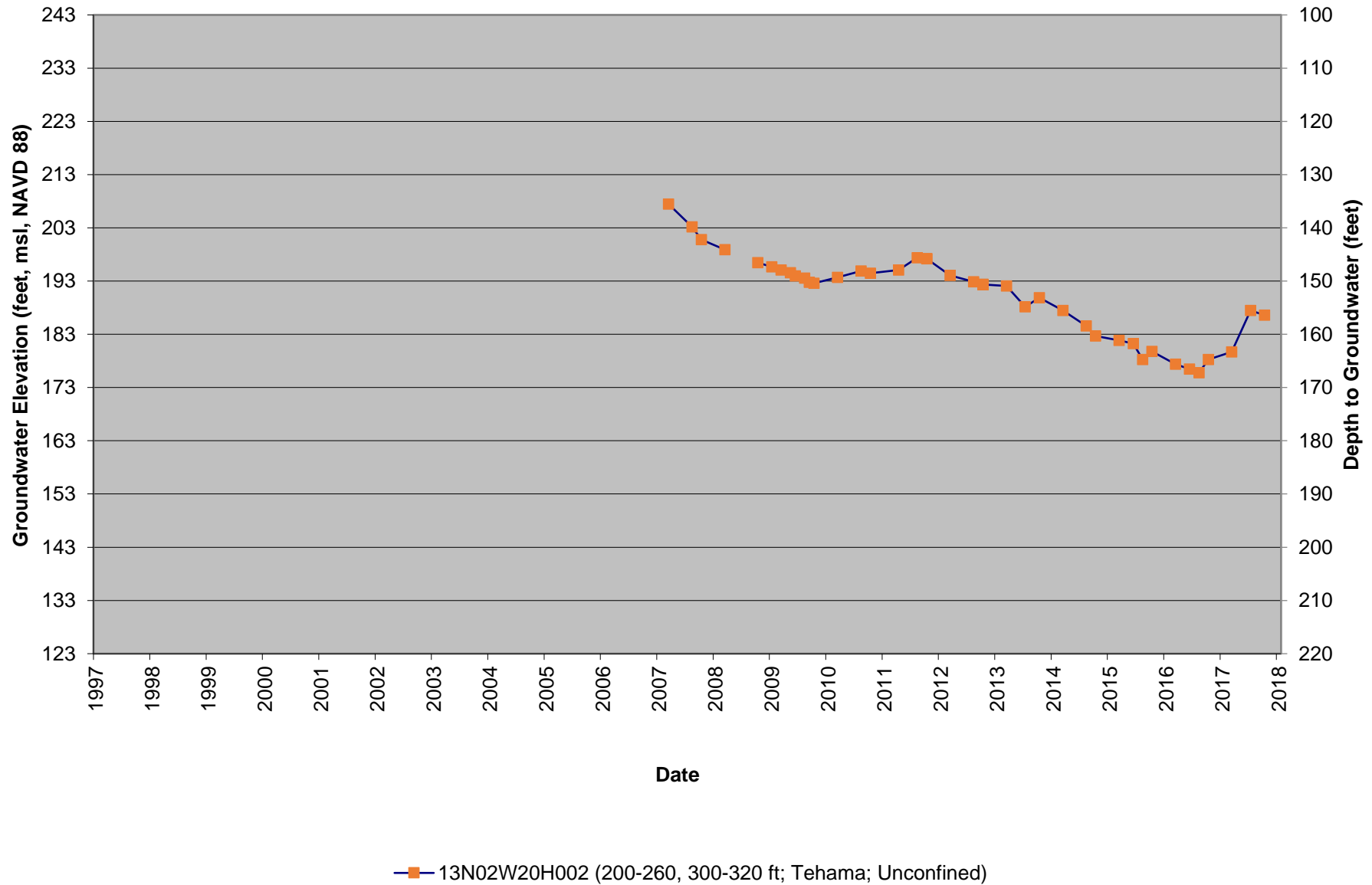


Figure A2-10. 14N01E35P001-004M Active Observation Well Cluster
Ground Surface Elevation 46.88 feet msl, NAVD 88

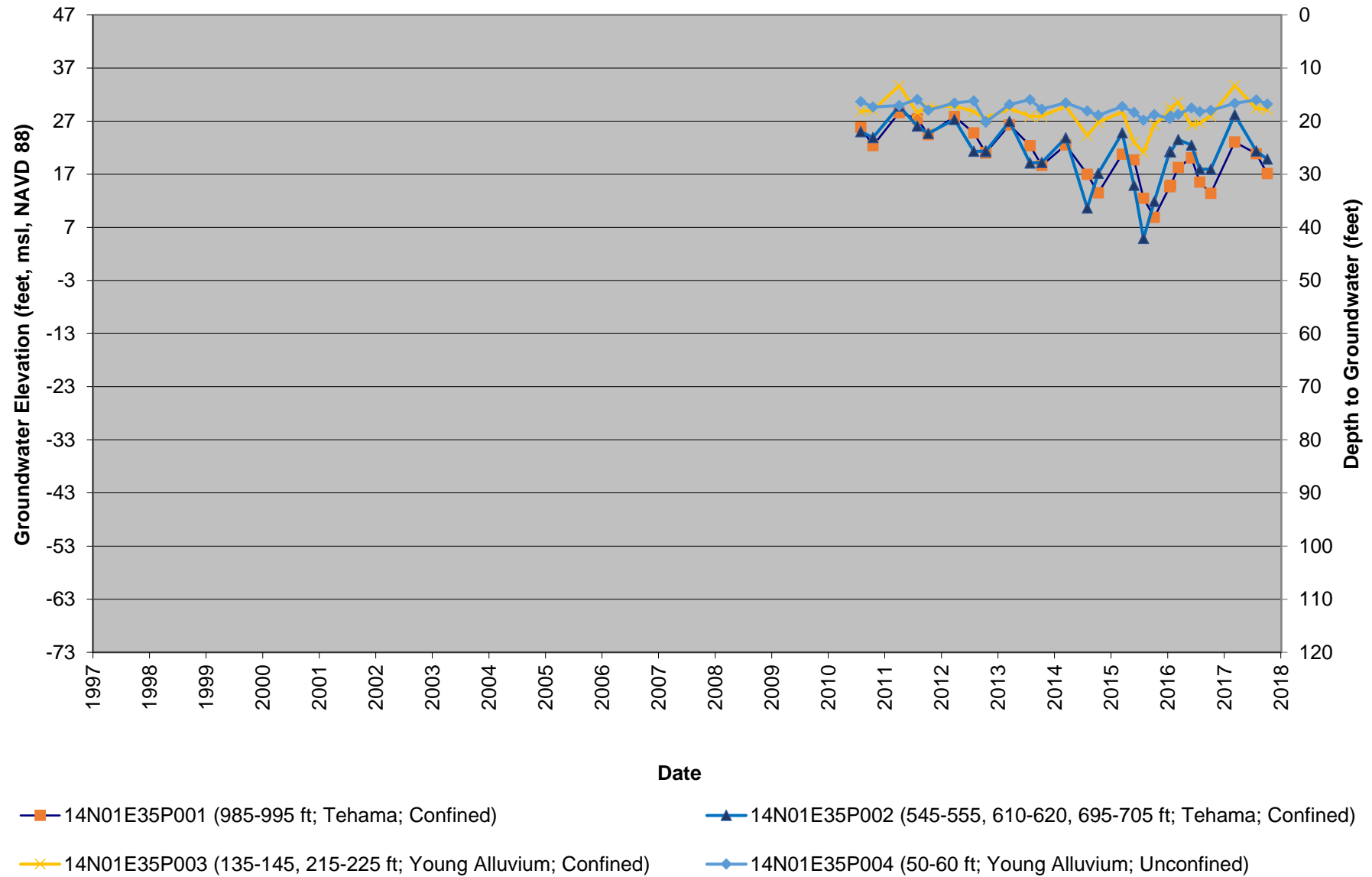


Figure A2-11. 14N01W04K003M Active Irrigation Well
Ground Surface Elevation 37.43 feet msl, NAVD 88

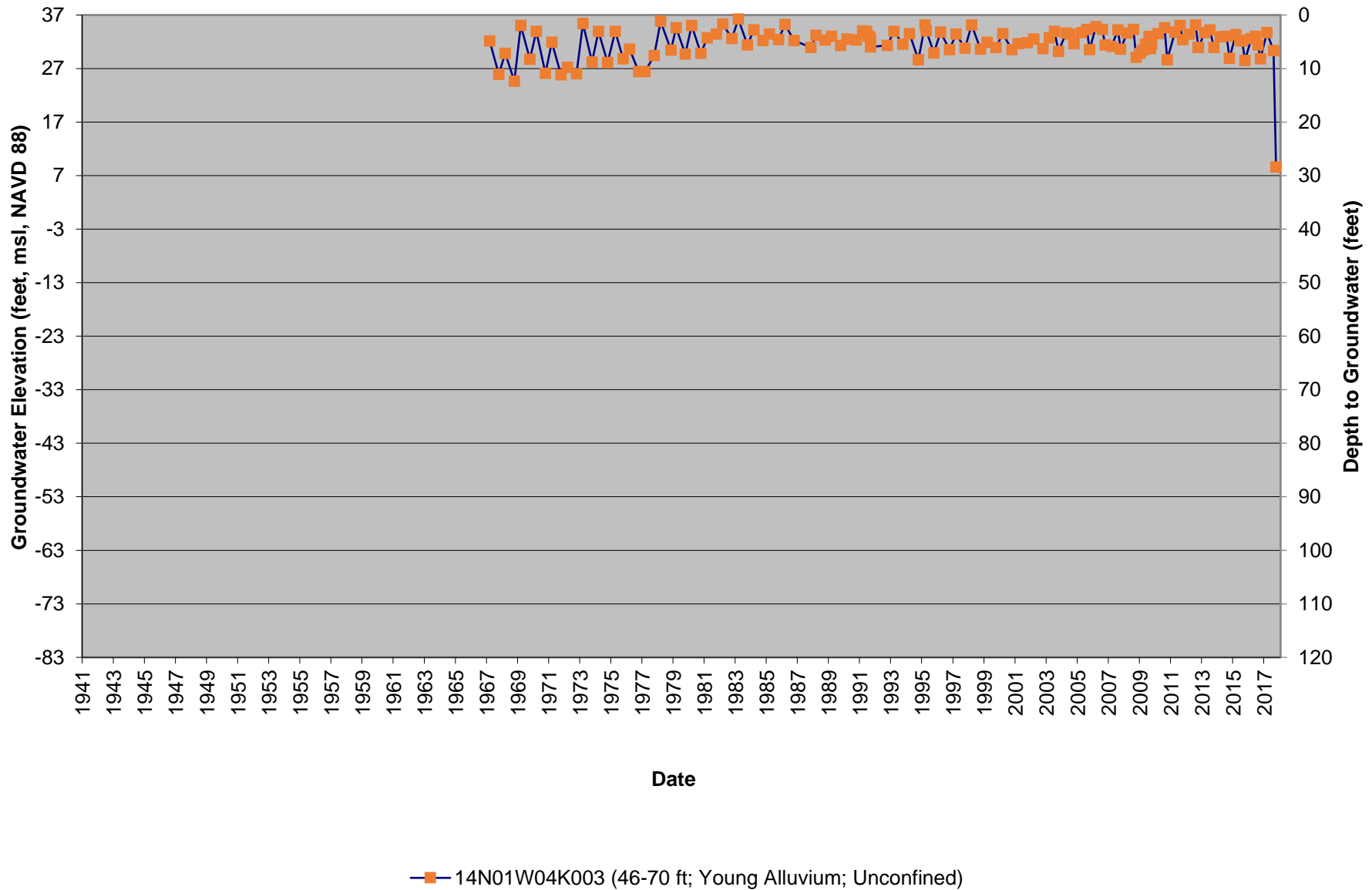


Figure A2-12. 14N02W13N001M Active Irrigation Well
Ground Surface Elevation 62.45 feet msl, NAVD 88

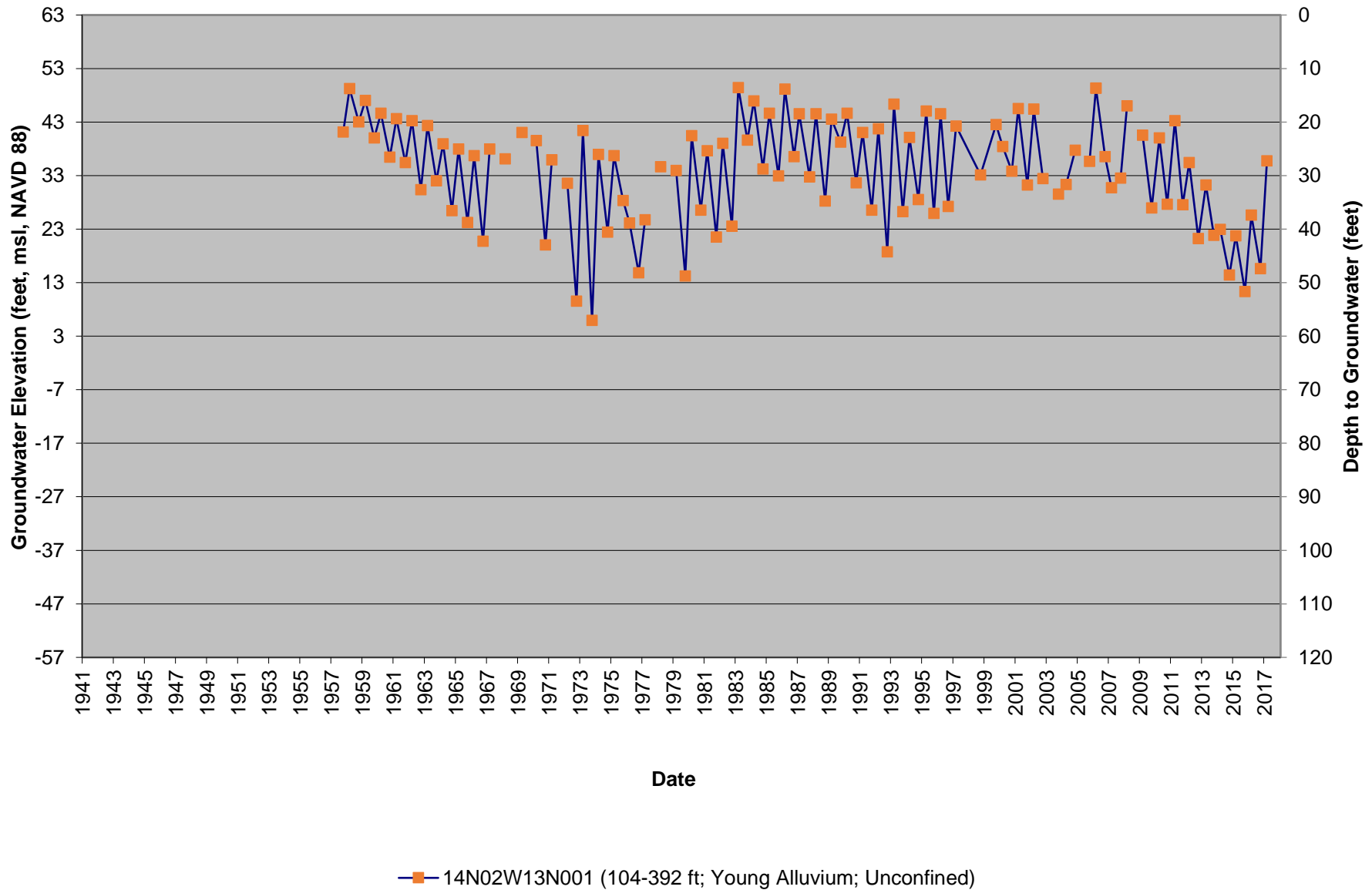


Figure A2-13. 14N02W29J001M Active Irrigation Well
Ground Surface Elevation 162.50 feet msl, NAVD 88

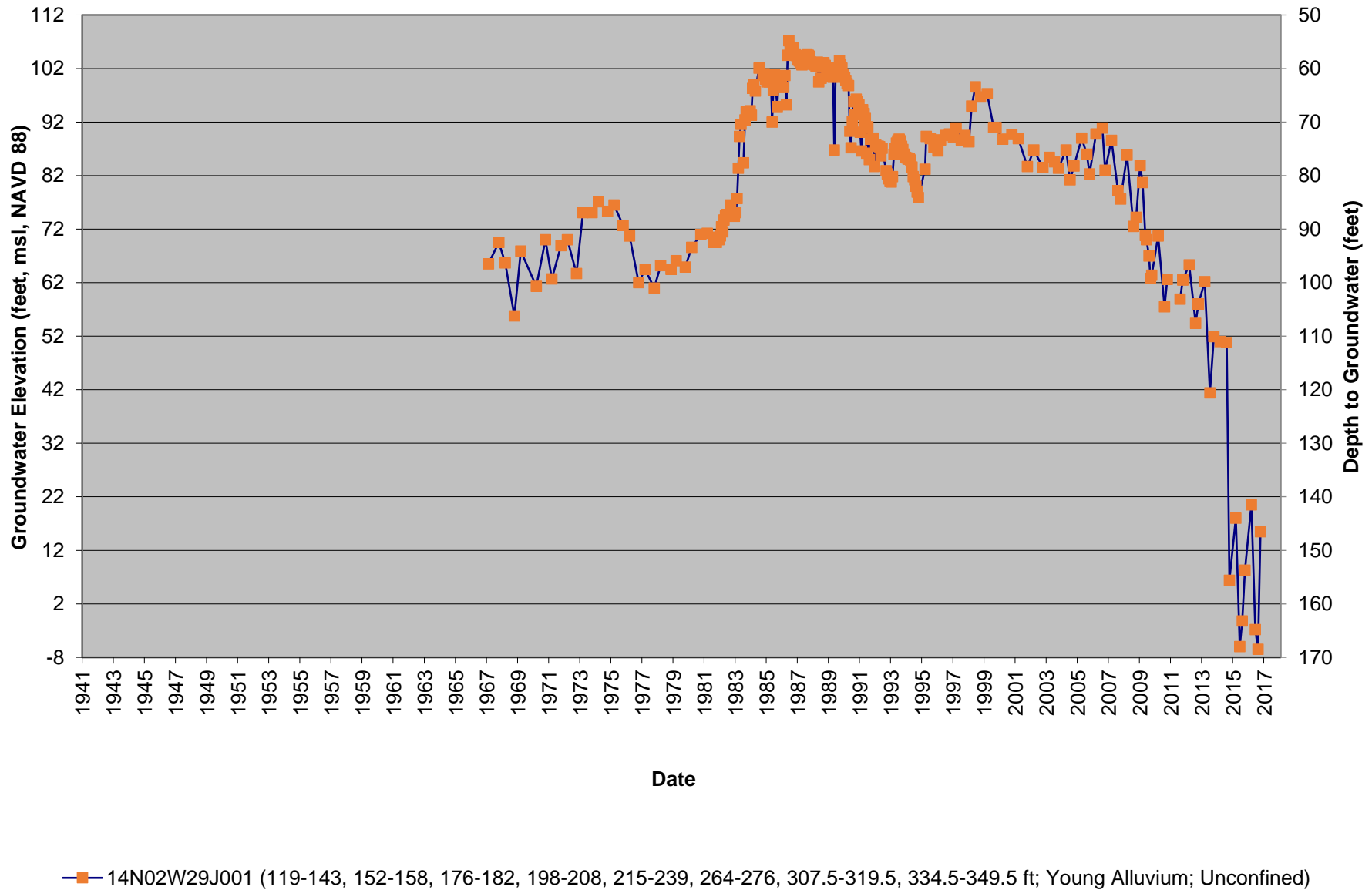


Figure A2-14. 14N03W14Q003M Active Irrigation Well
Ground Surface Elevation 172.52 feet msl, NAVD 88

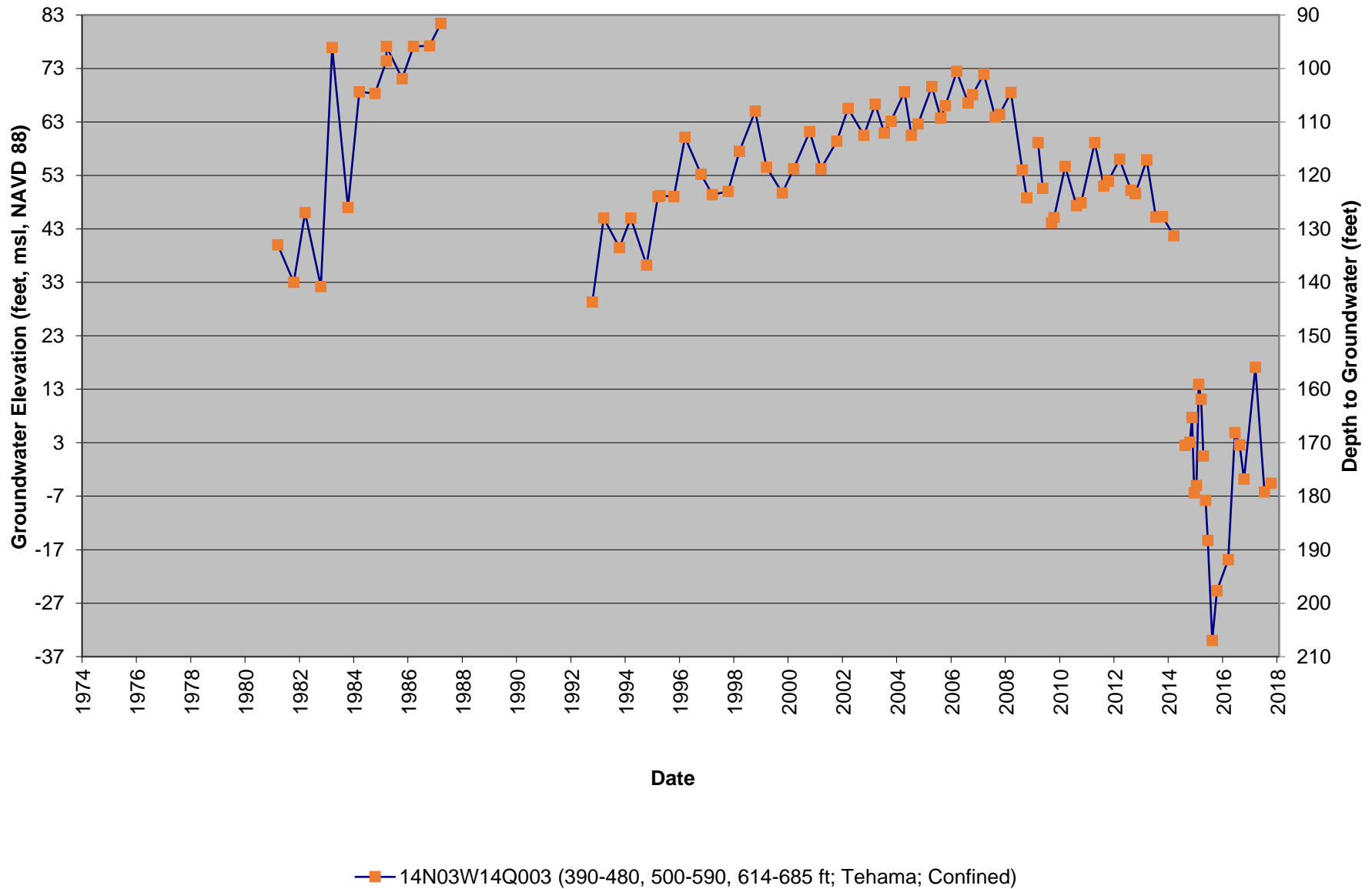


Figure A2-15. 14N03W24C001M Active Residential Well
Ground Surface Elevation 172.51 feet msl, NAVD 88

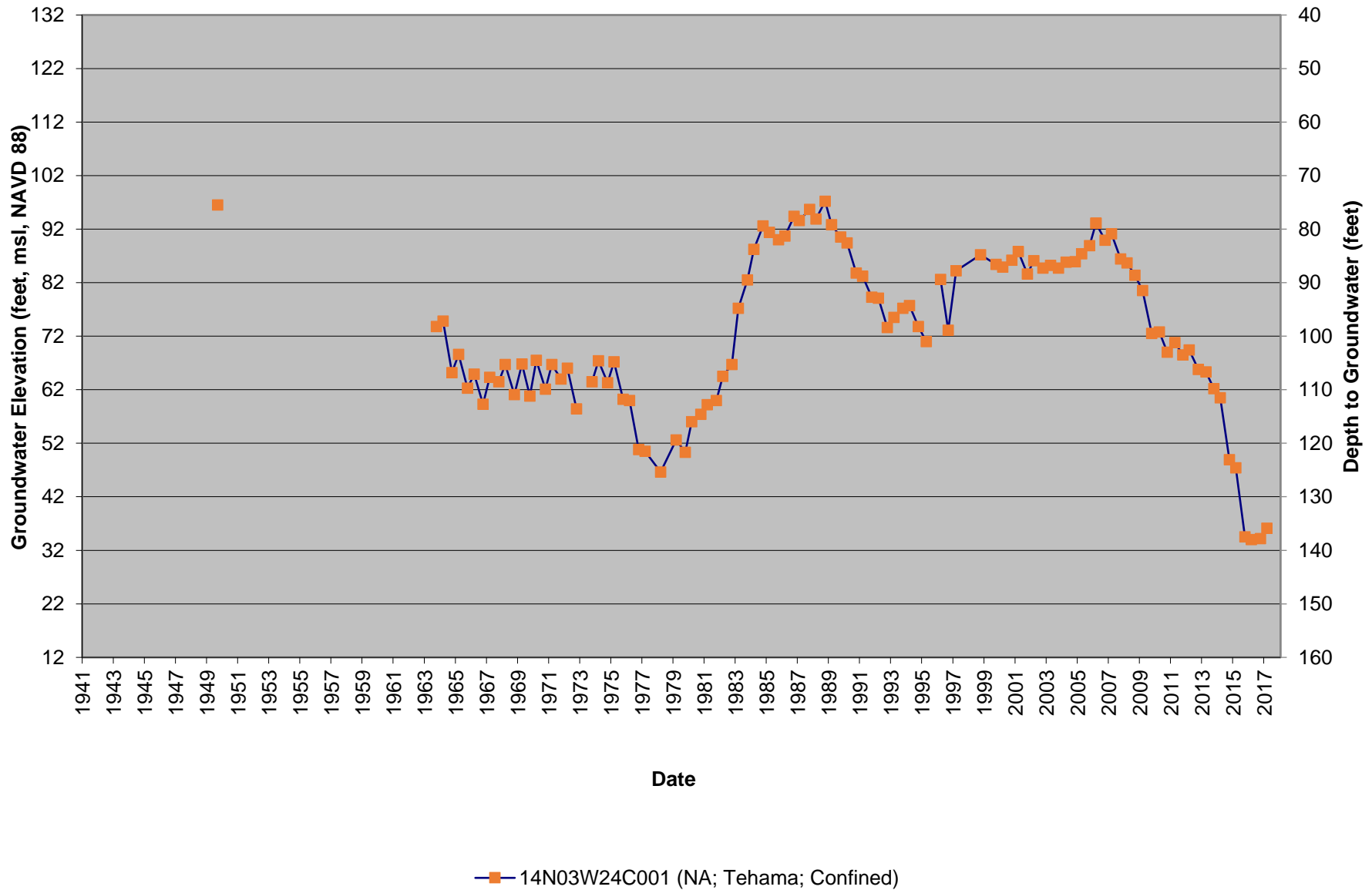


Figure A2-16. 15N01W05G001M Active Residential Well
Ground Surface Elevation 47.42 feet msl, NAVD 88

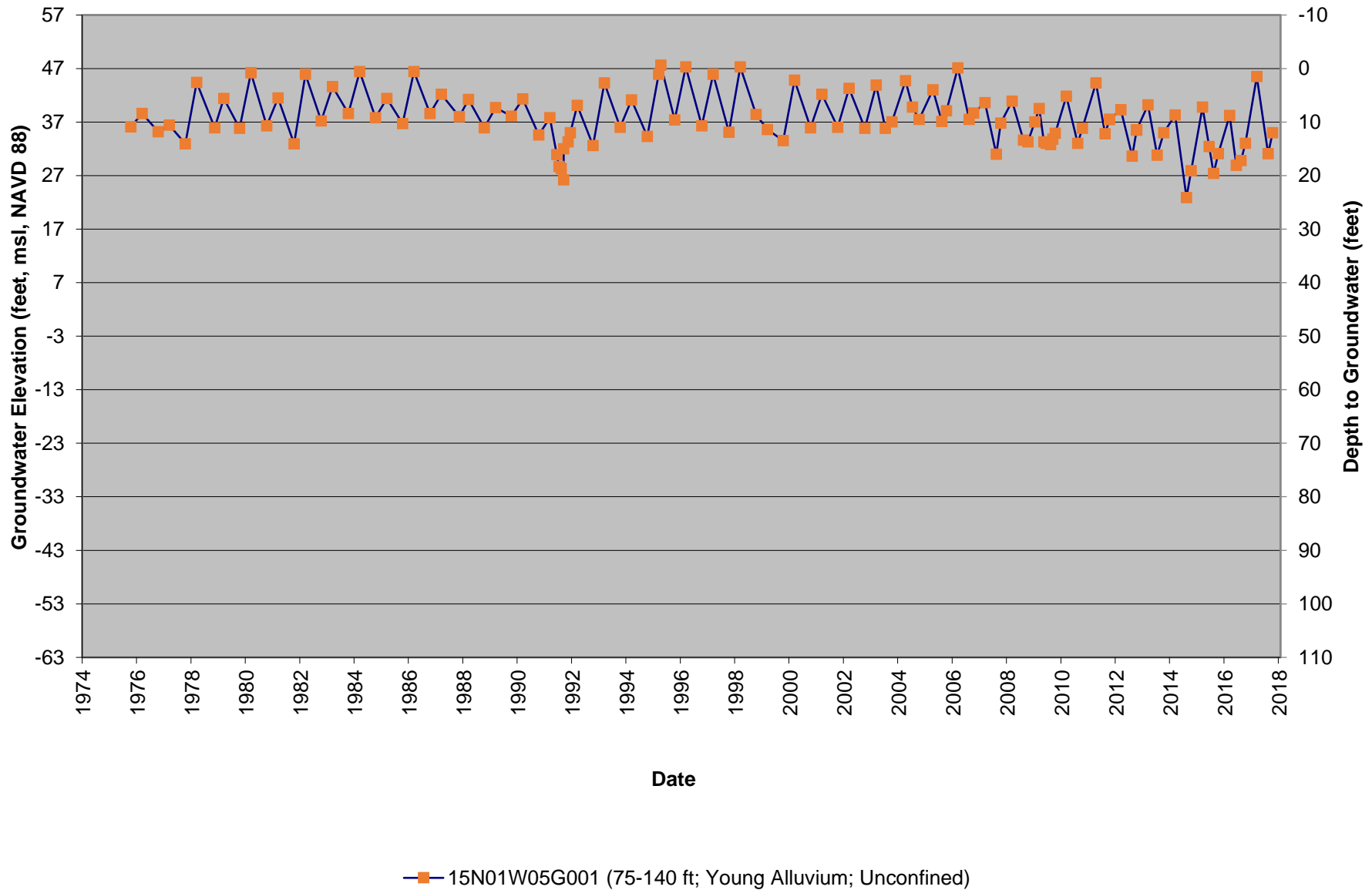


Figure A2-17. 15N02W19E001M Active Irrigation Well
Ground Surface Elevation 87.46 feet msl, NAVD 88

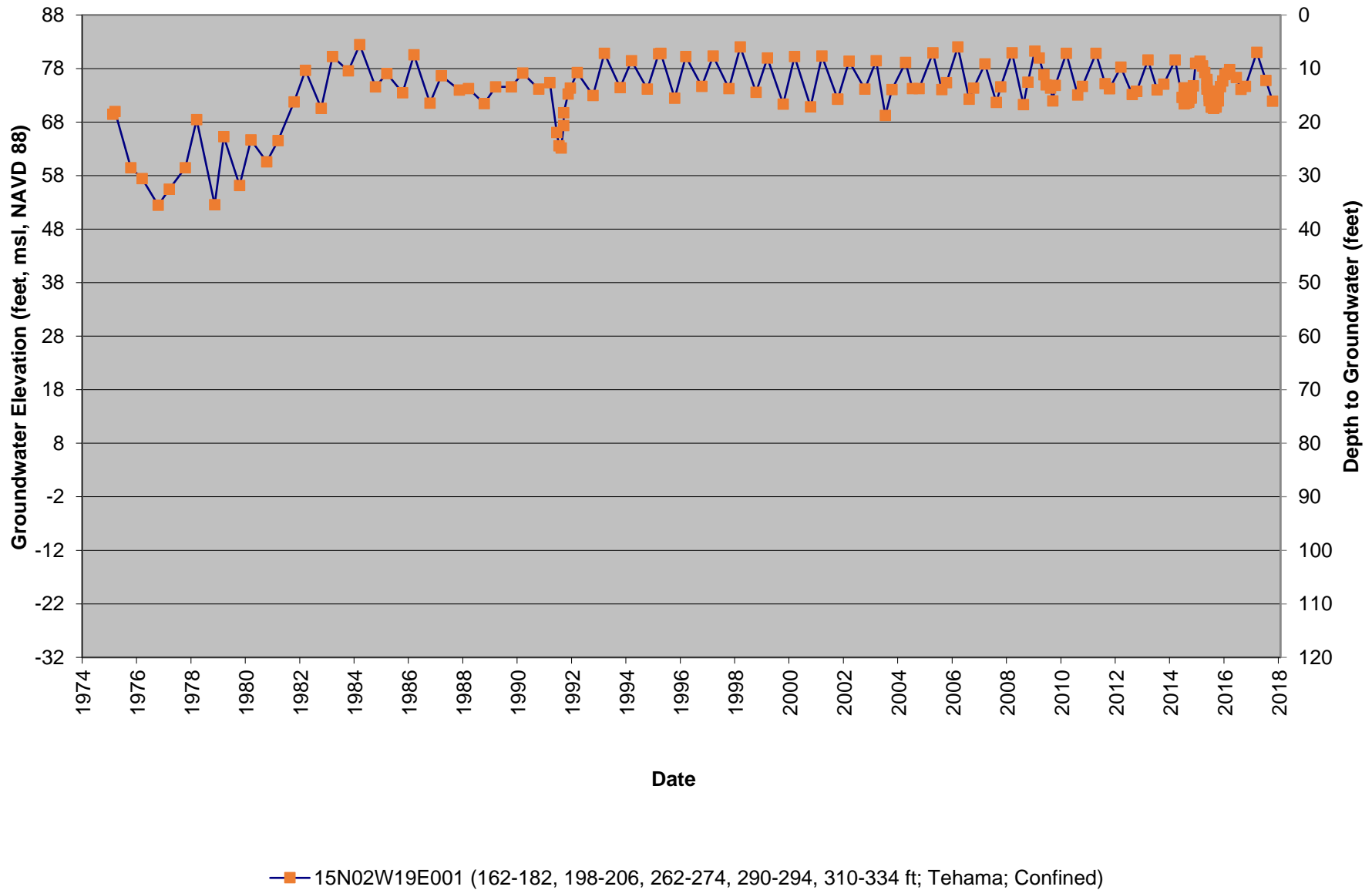


Figure A2-18. 15N03W08Q001M Active Irrigation Well
Ground Surface Elevation 115.58 feet msl, NAVD 88

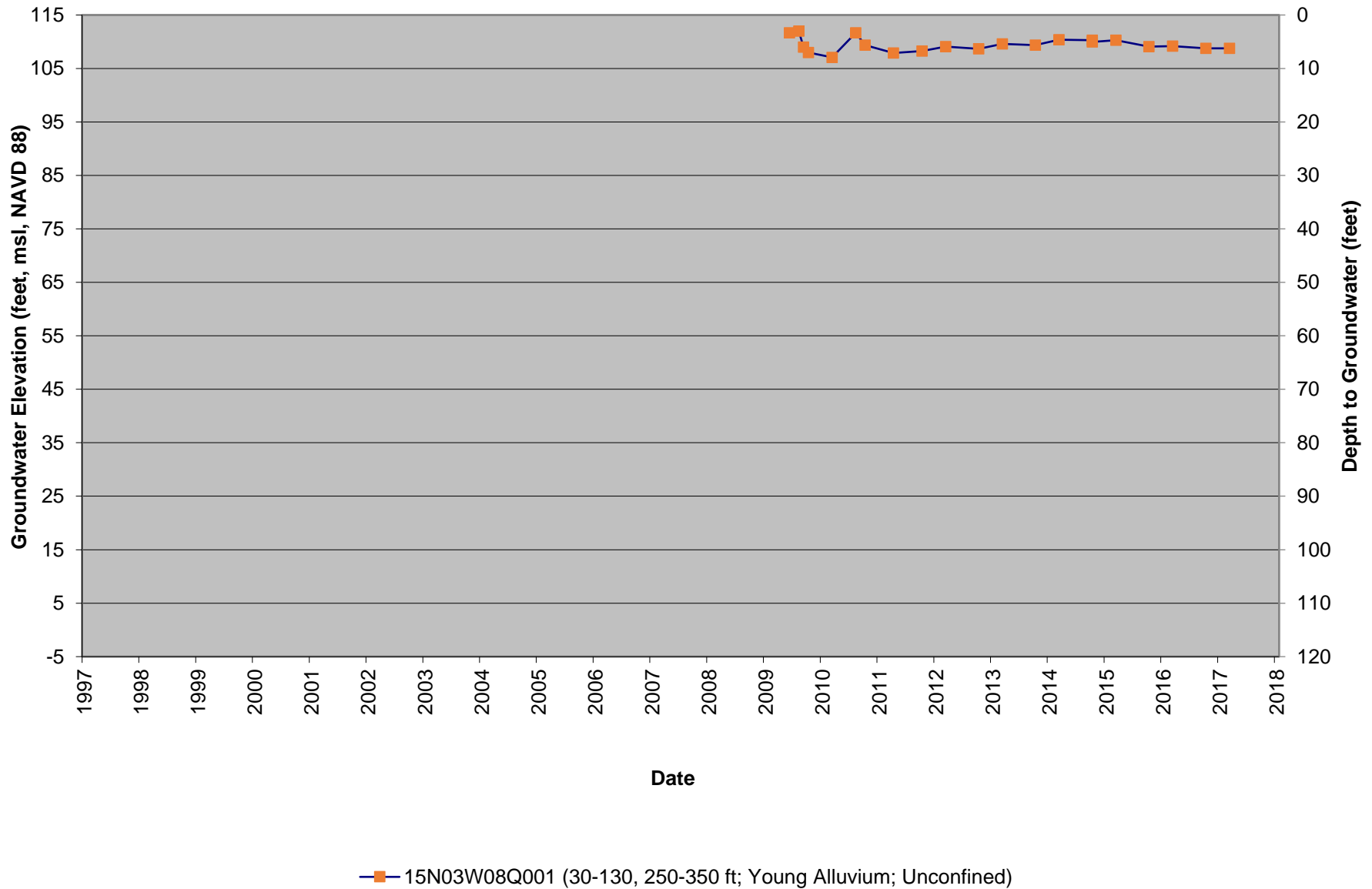


Figure A2-19. 15N03W20Q001-003M Active Observation Well Cluster
Ground Surface Elevation 128.56 feet msl, NAVD 88

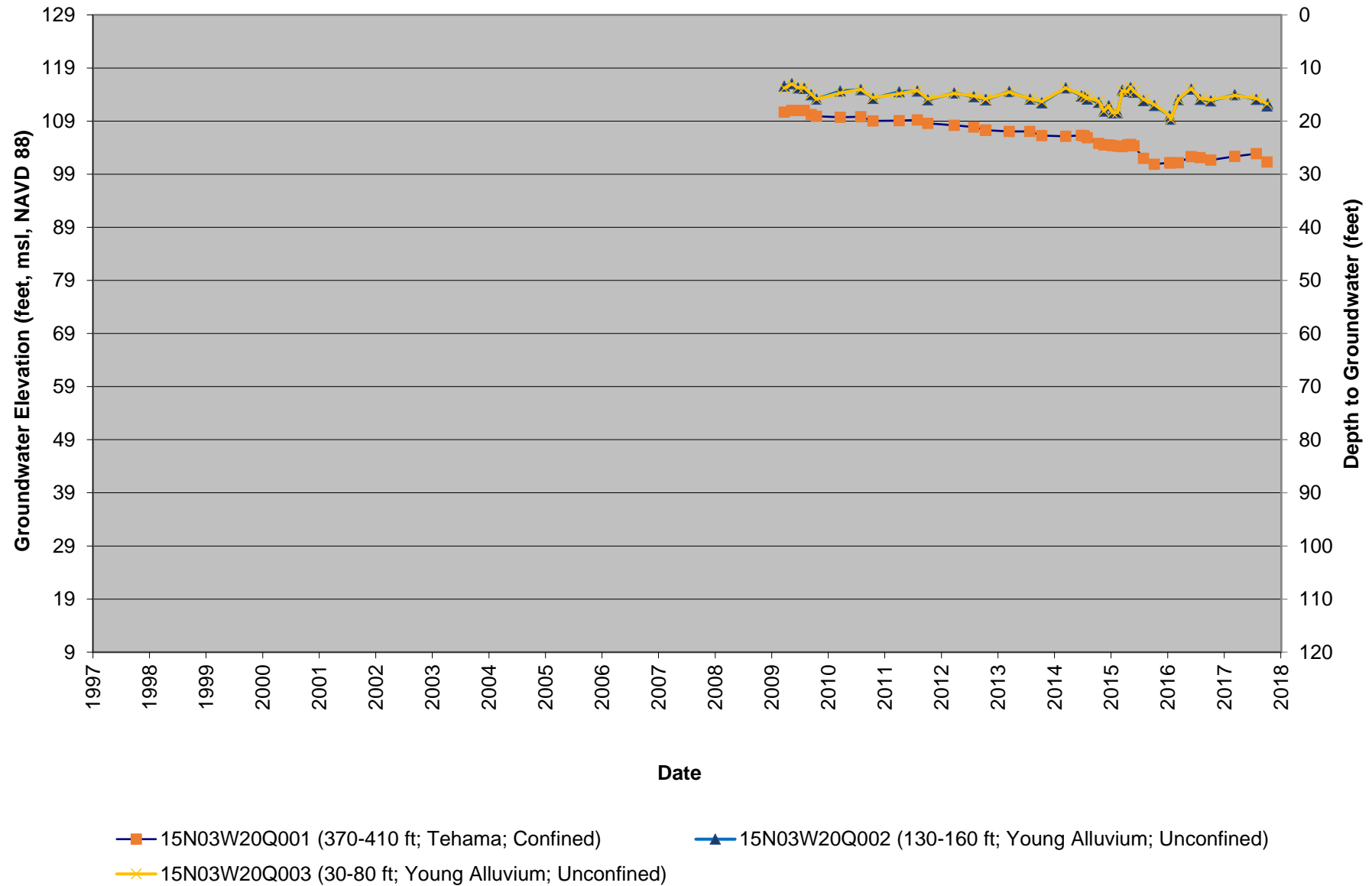


Figure A2-20. 16N02W05B001-003M Active Observation Well Cluster
Ground Surface Elevation 65.00 feet msl, NAVD 88

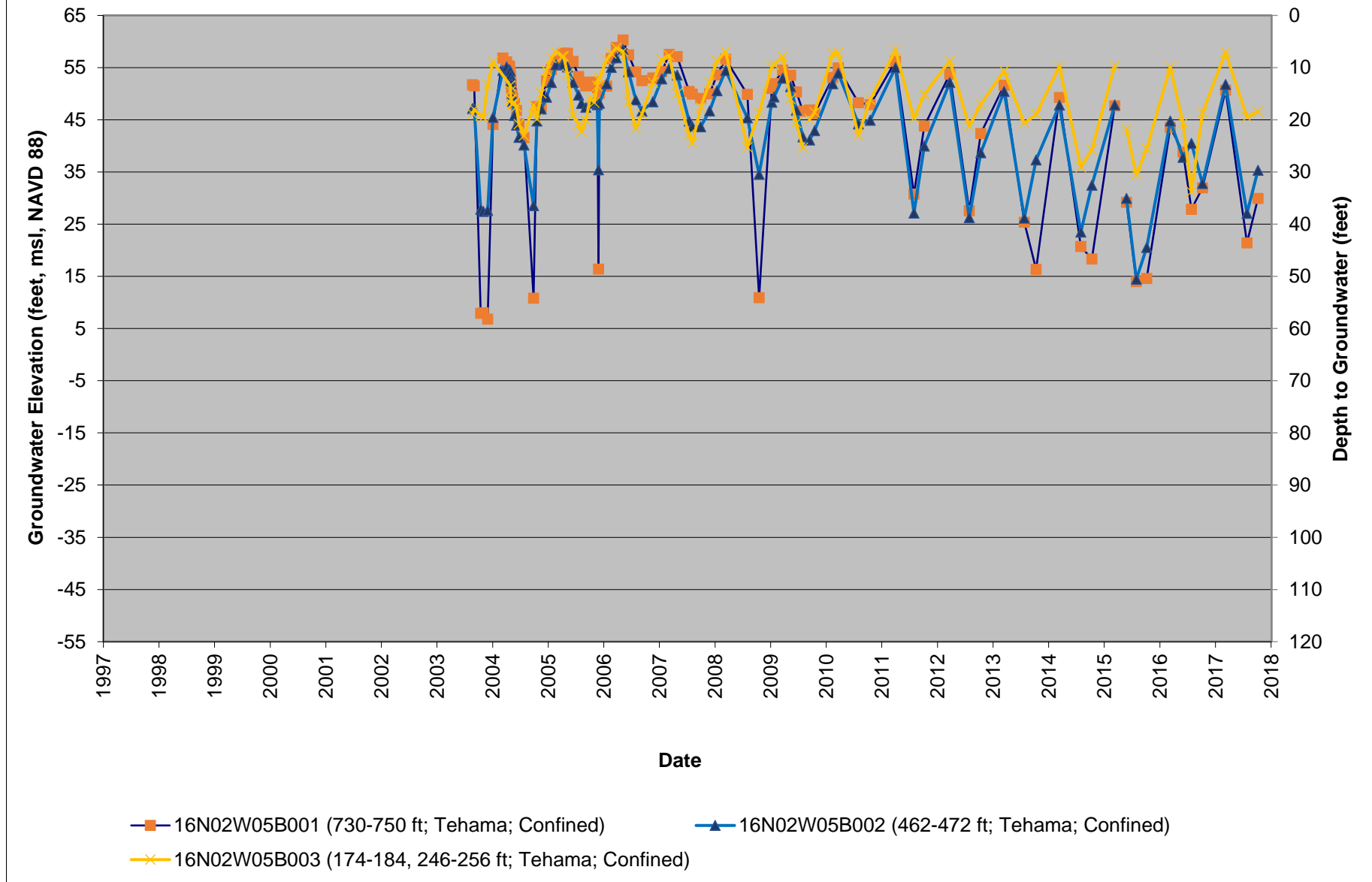


Figure A2-21. 16N02W25B002M Active Residential Well
Ground Surface Elevation 55.42 feet msl, NAVD 88

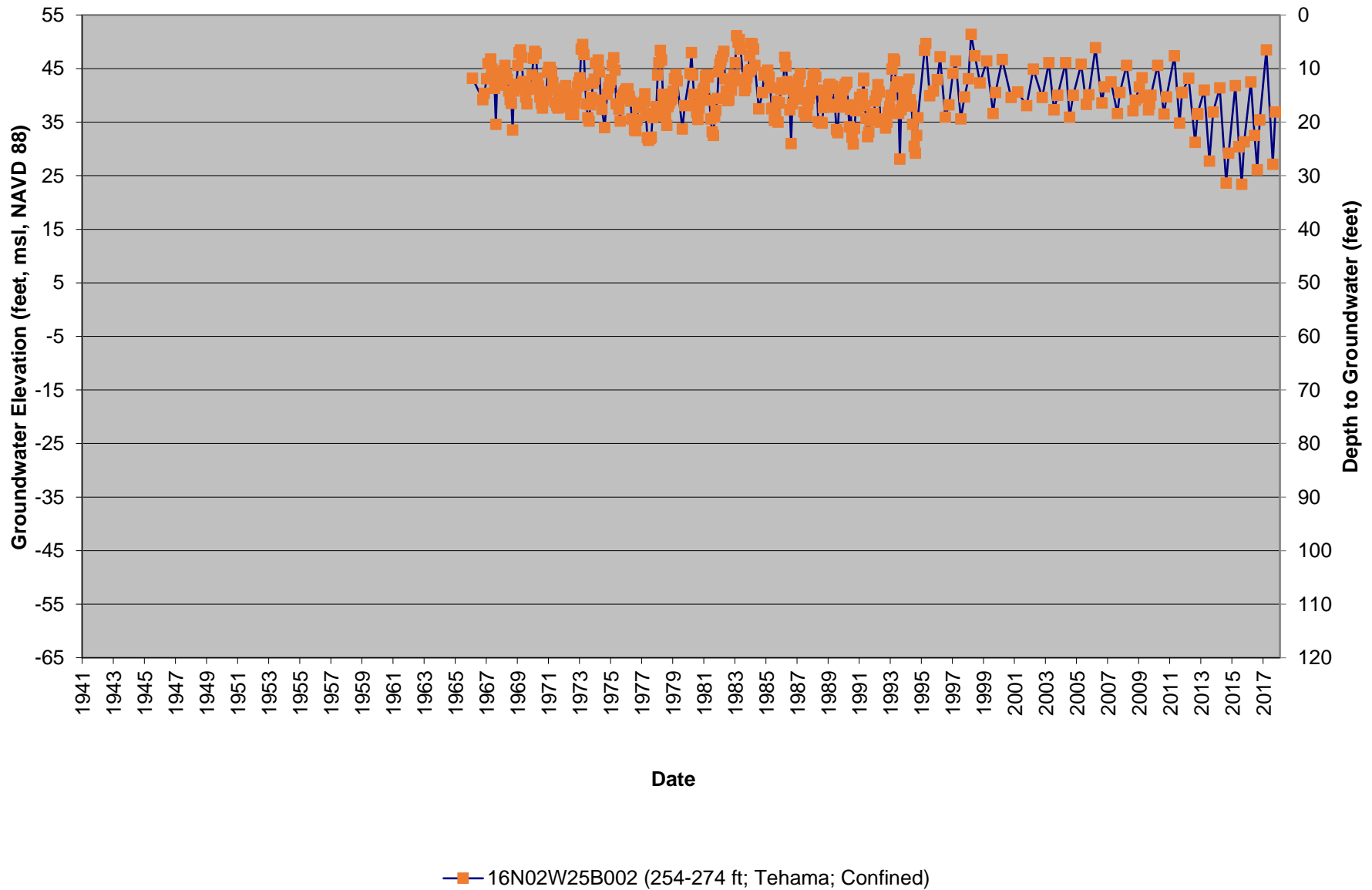


Figure A2-22. 16N03W14H003-006M Active Observation Well Cluster
Ground Surface Elevation 65.70 feet msl, NAVD 88

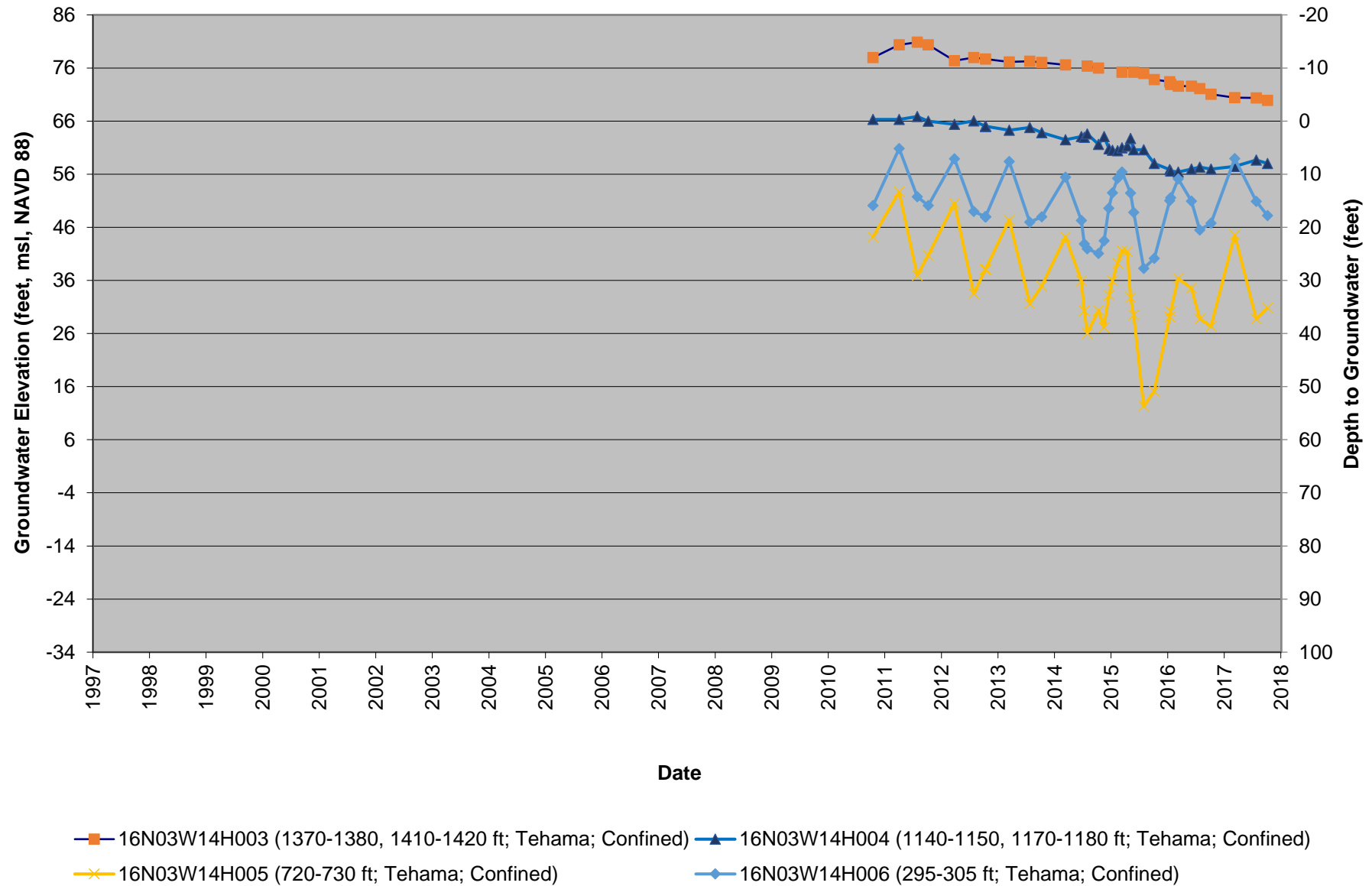


Figure A2-23. 16N03W35N002M Inactive Residential Well
Ground Surface Elevation 75.47 feet msl, NAVD 88

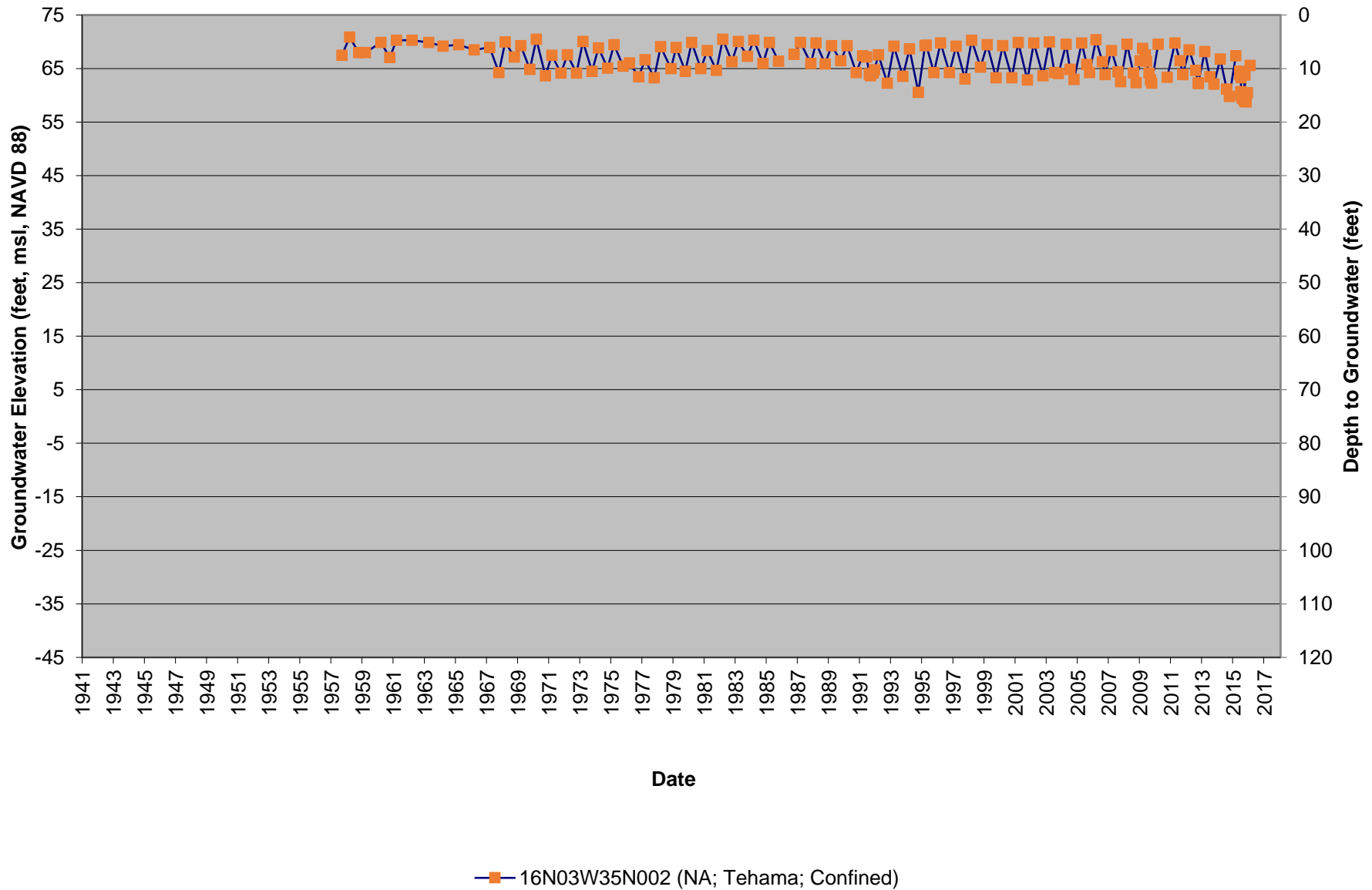


Figure A2-24. 16N04W02P001M Active Stockwatering Well
Ground Surface Elevation 162.53 feet msl, NAVD 88

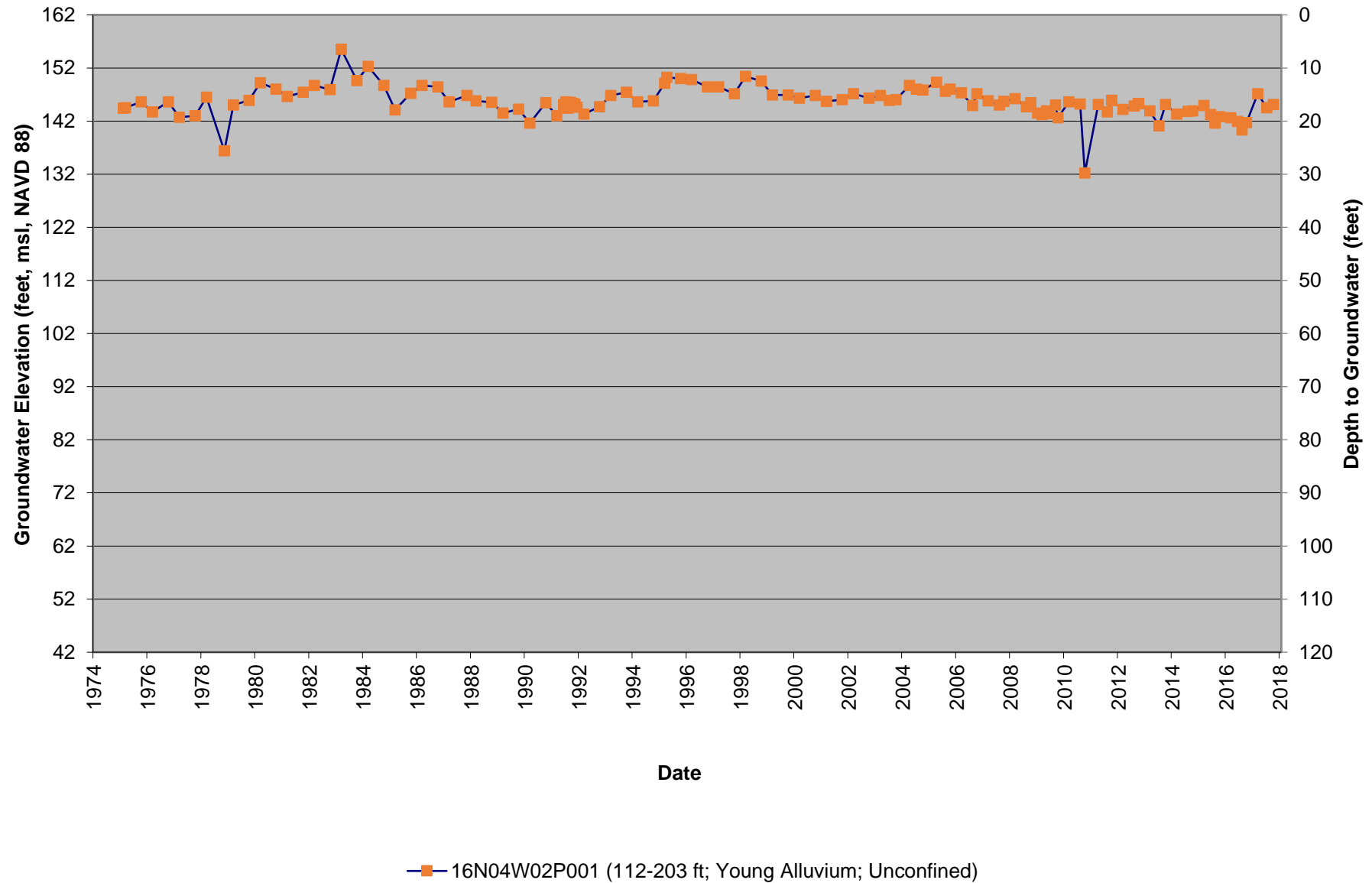


Figure A2-25. 17N01W10A001-004M Active Observation Well Cluster
Ground Surface Elevation 64.28 feet msl, NAVD 88

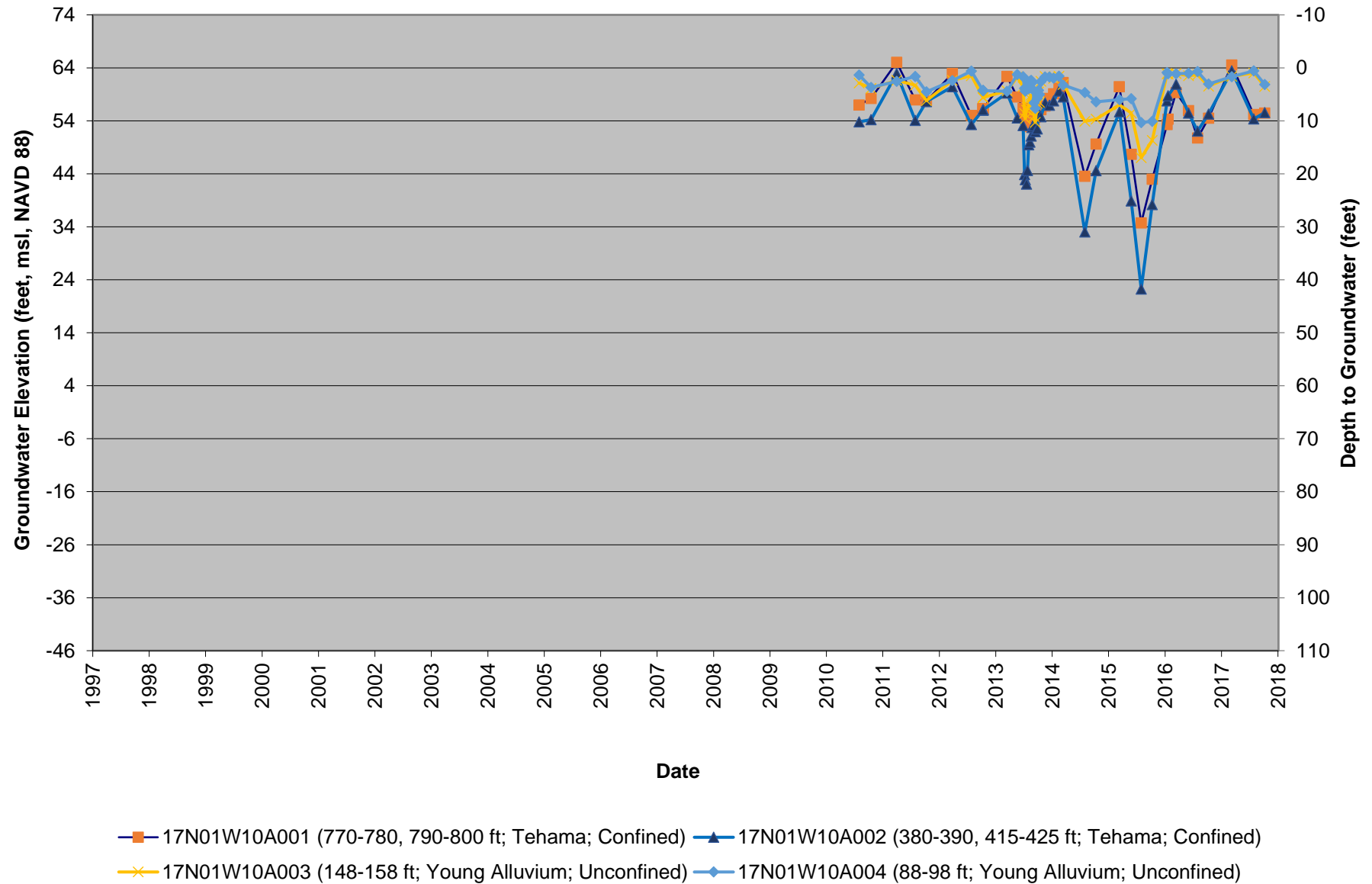


Figure A2-26. 17N01W27A001-003M Active Observation Well Cluster
Ground Surface Elevation 66.61 feet msl, NAVD 88

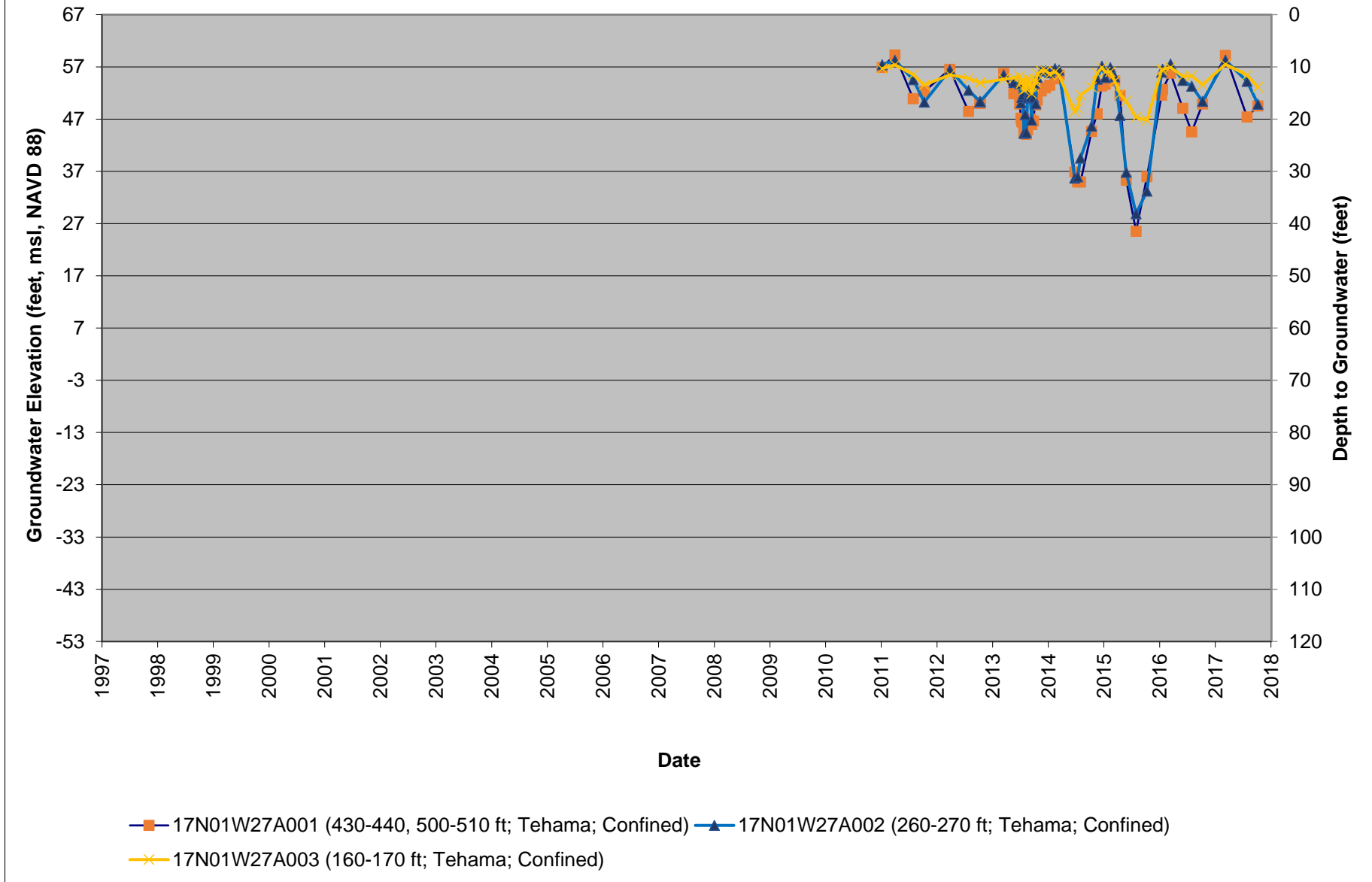


Figure A2-27. 17N02W09H002-004M Active Observation Well Cluster
Ground Surface Elevation 67.00 feet msl, NAVD 88

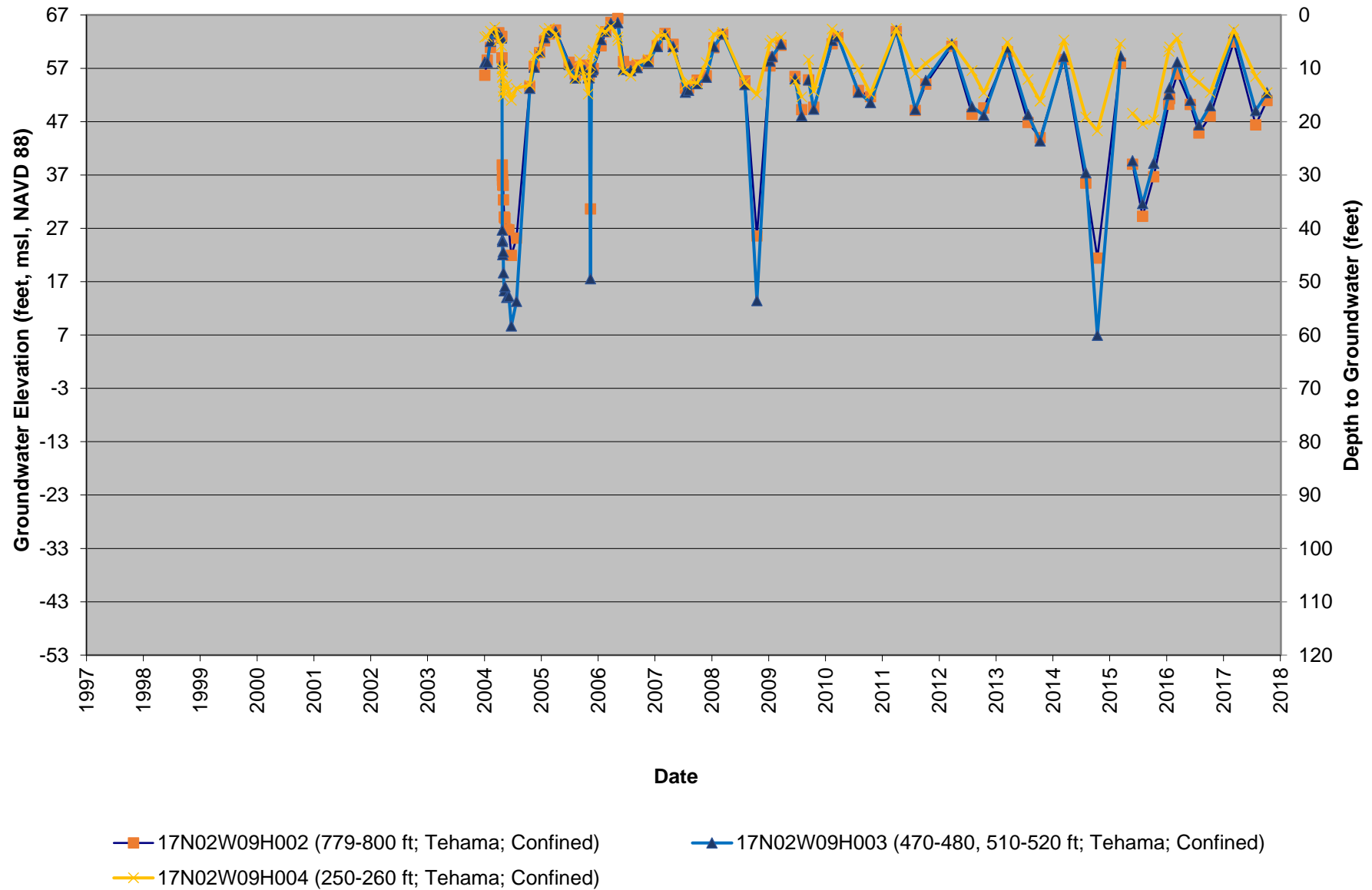


Figure A2-28. 17N02W30J002M Active Residential Well
Ground Surface Elevation 63.43 feet msl, NAVD 88

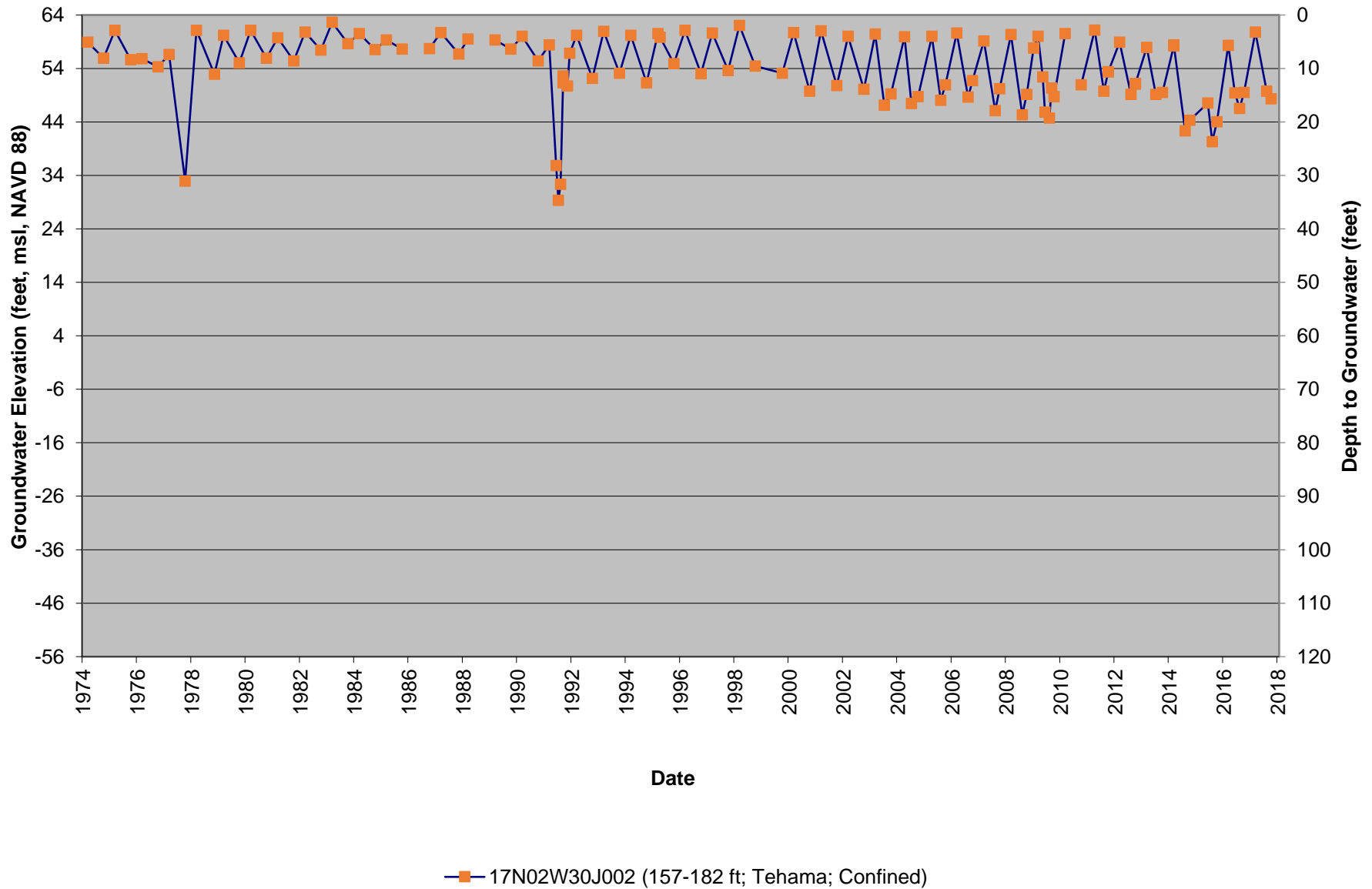


Figure A2-29. 17N03W08R001M Active Residential Well
Ground Surface Elevation 107.46 feet msl, NAVD 88

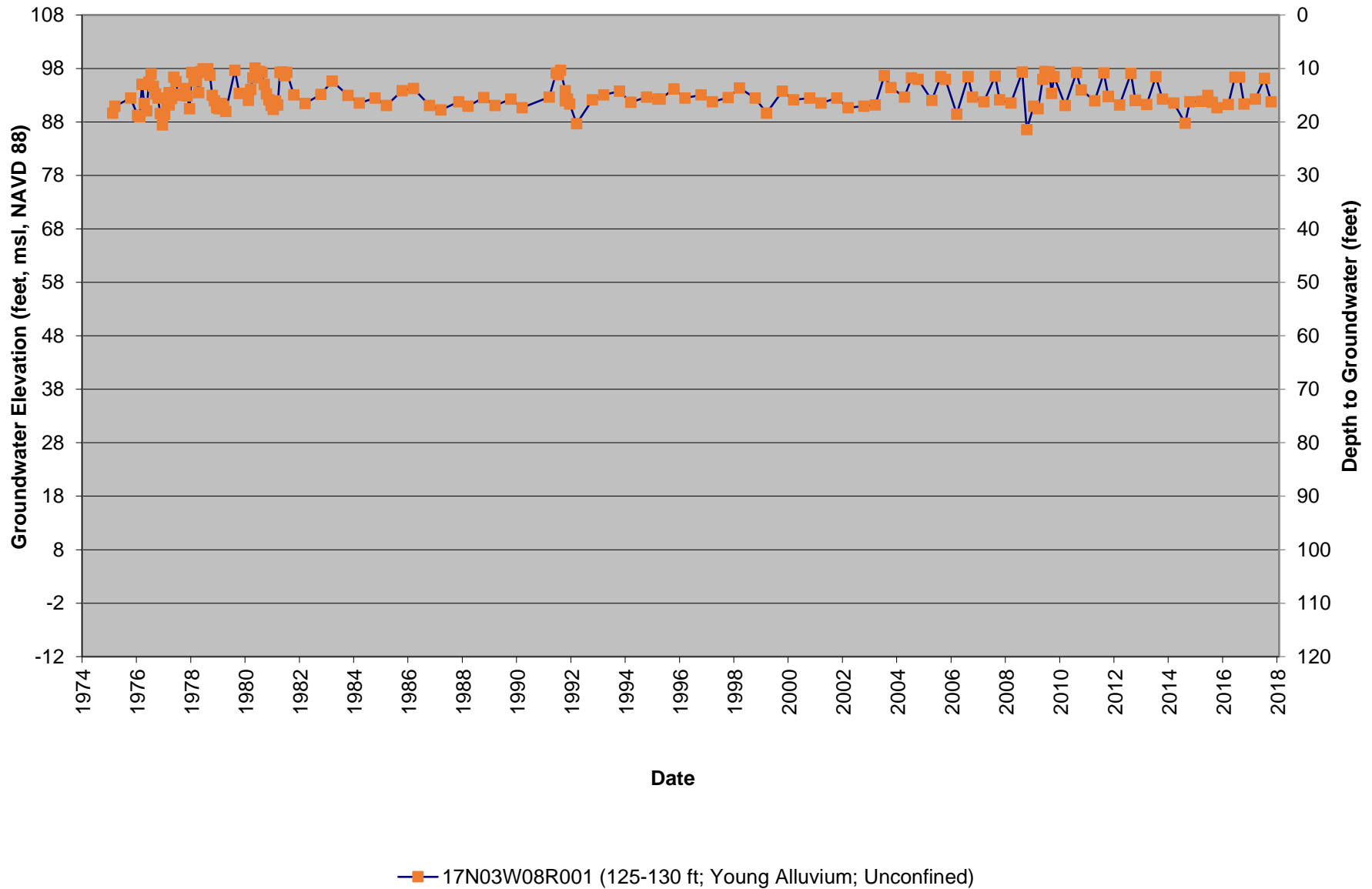


Figure A2-30. 17N03W32H001M Active Residential Well
Ground Surface Elevation 100.47 feet msl, NAVD 88

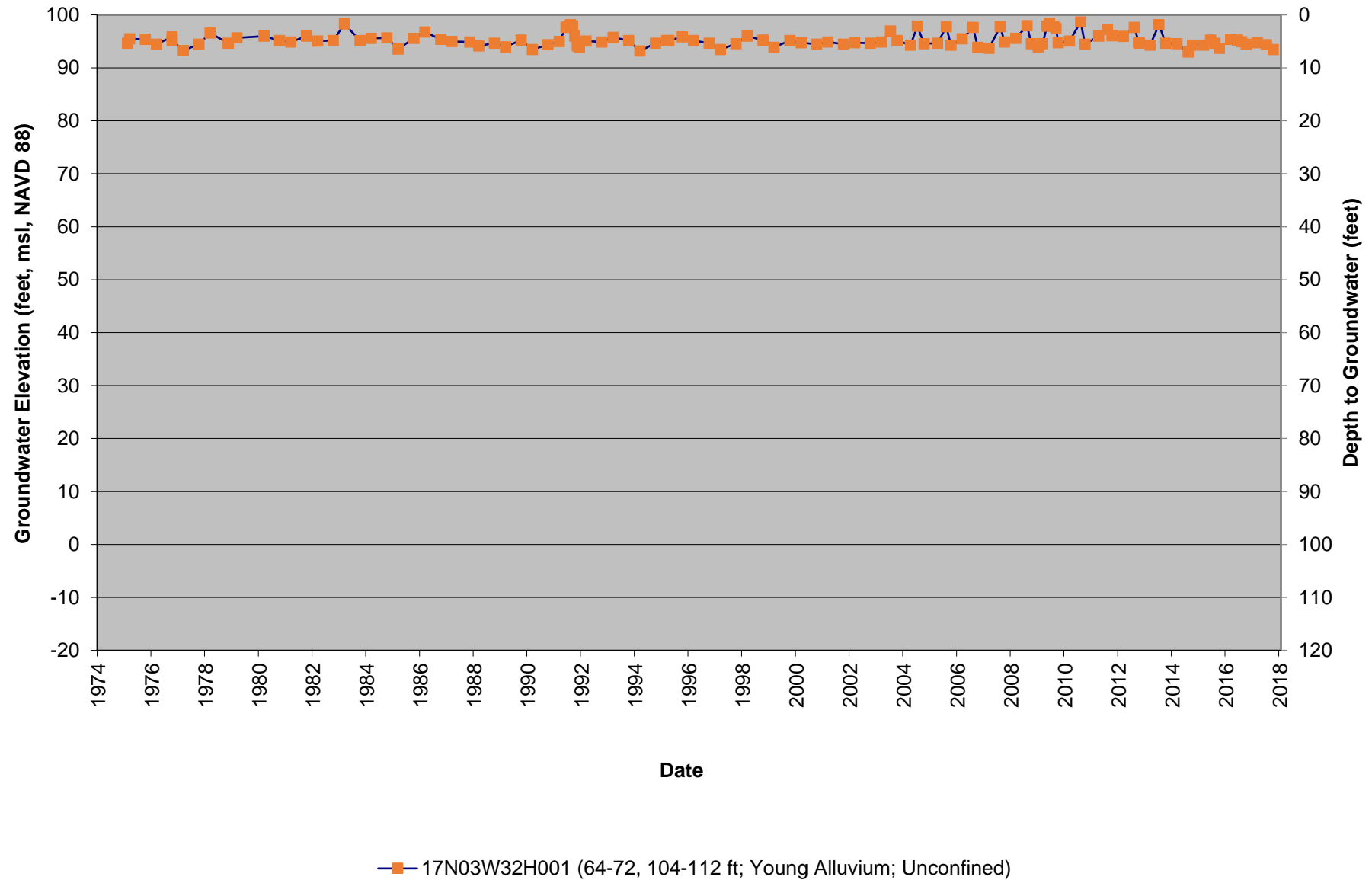


Figure A2-31. 18N02W36B001M Active Irrigation Well
Ground Surface Elevation 75.40 feet msl, NAVD 88

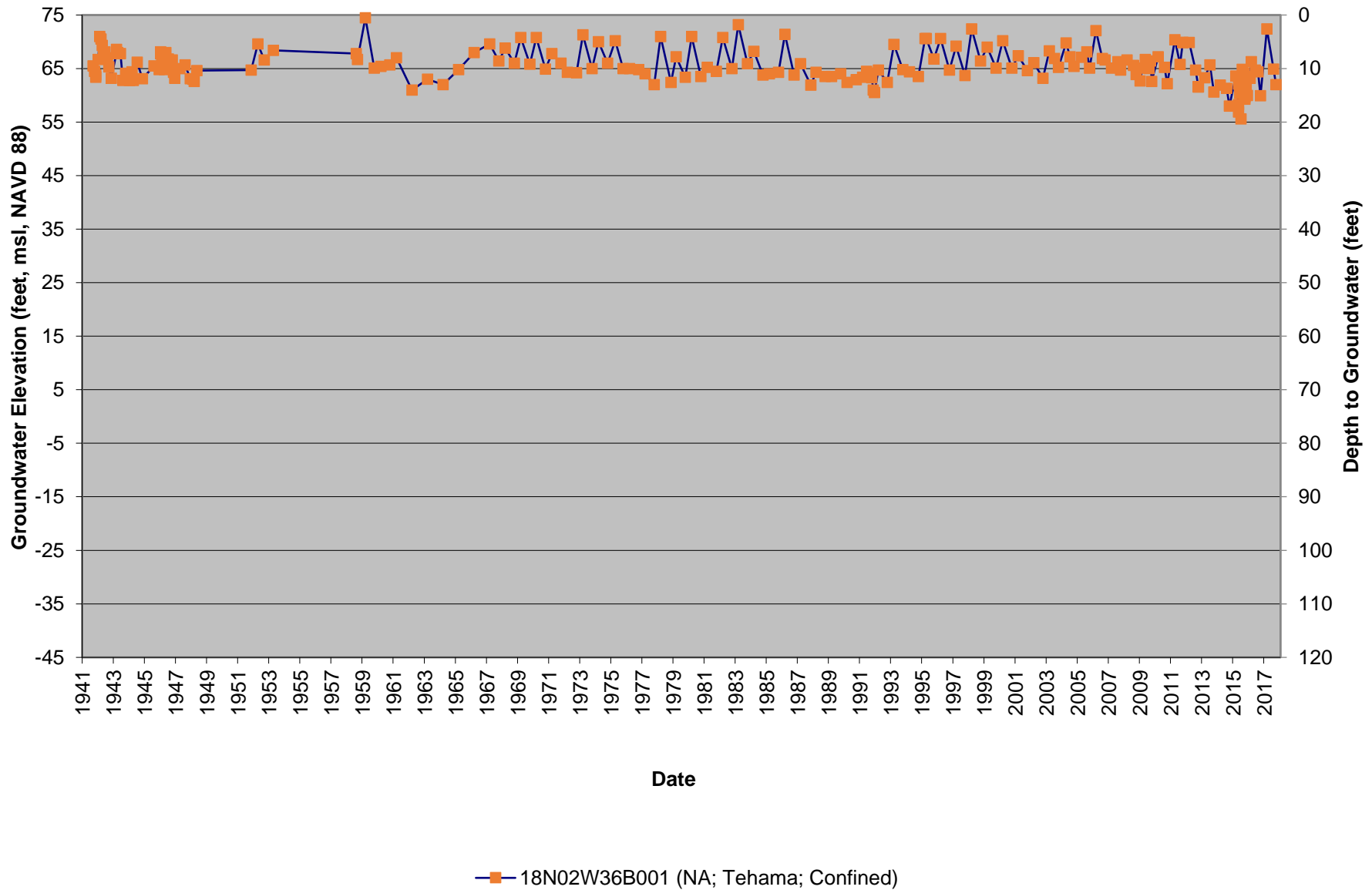


Figure A2-32. 18N01W02E001-003M Active Observation Well Cluster
Ground Surface Elevation 78.50 feet msl, NAVD 88

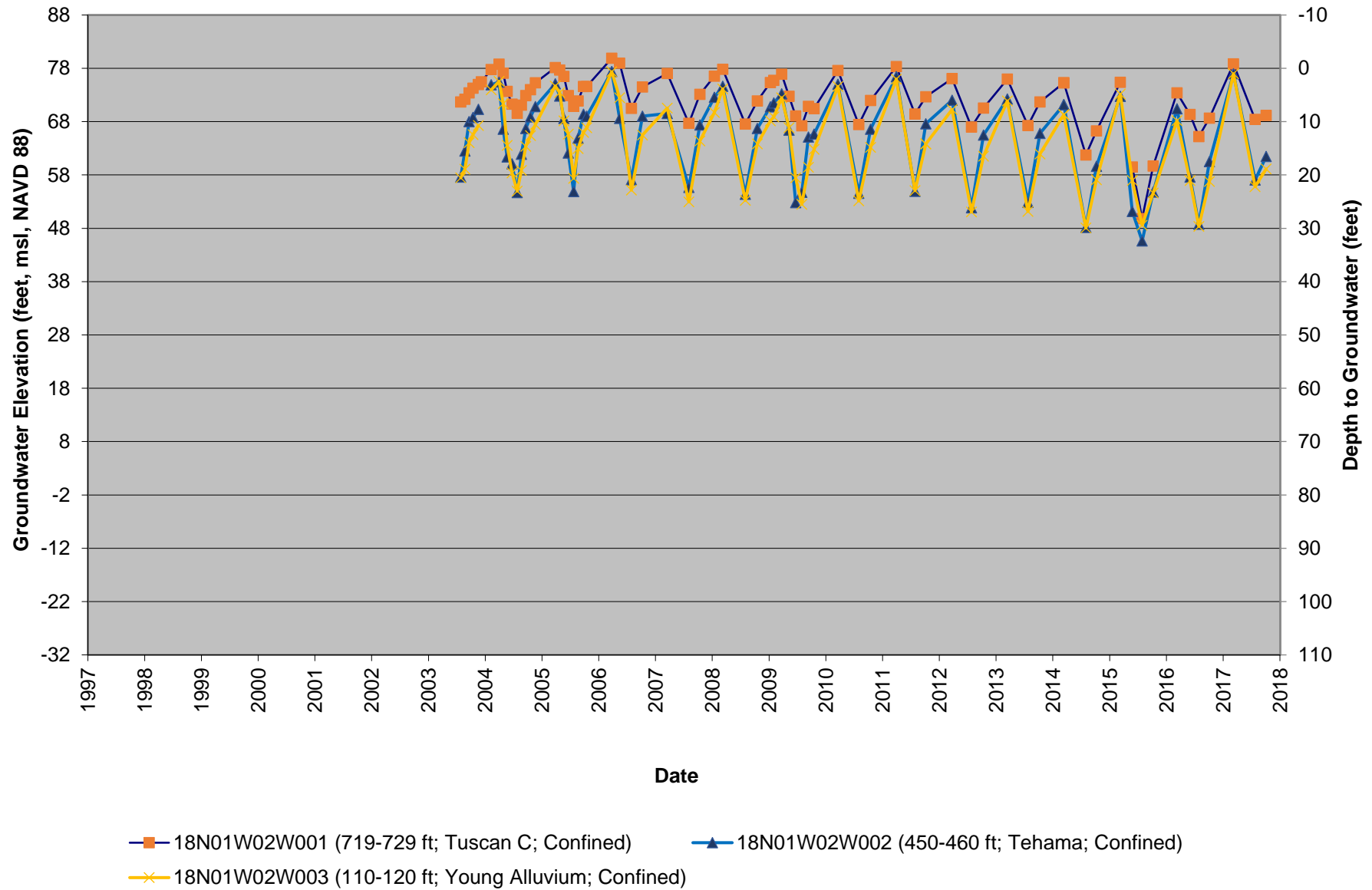


Figure A2-33. 18N02W18D001-004M Active Observation Well Cluster
Ground Surface Elevation 82.43 feet msl, NAVD 88

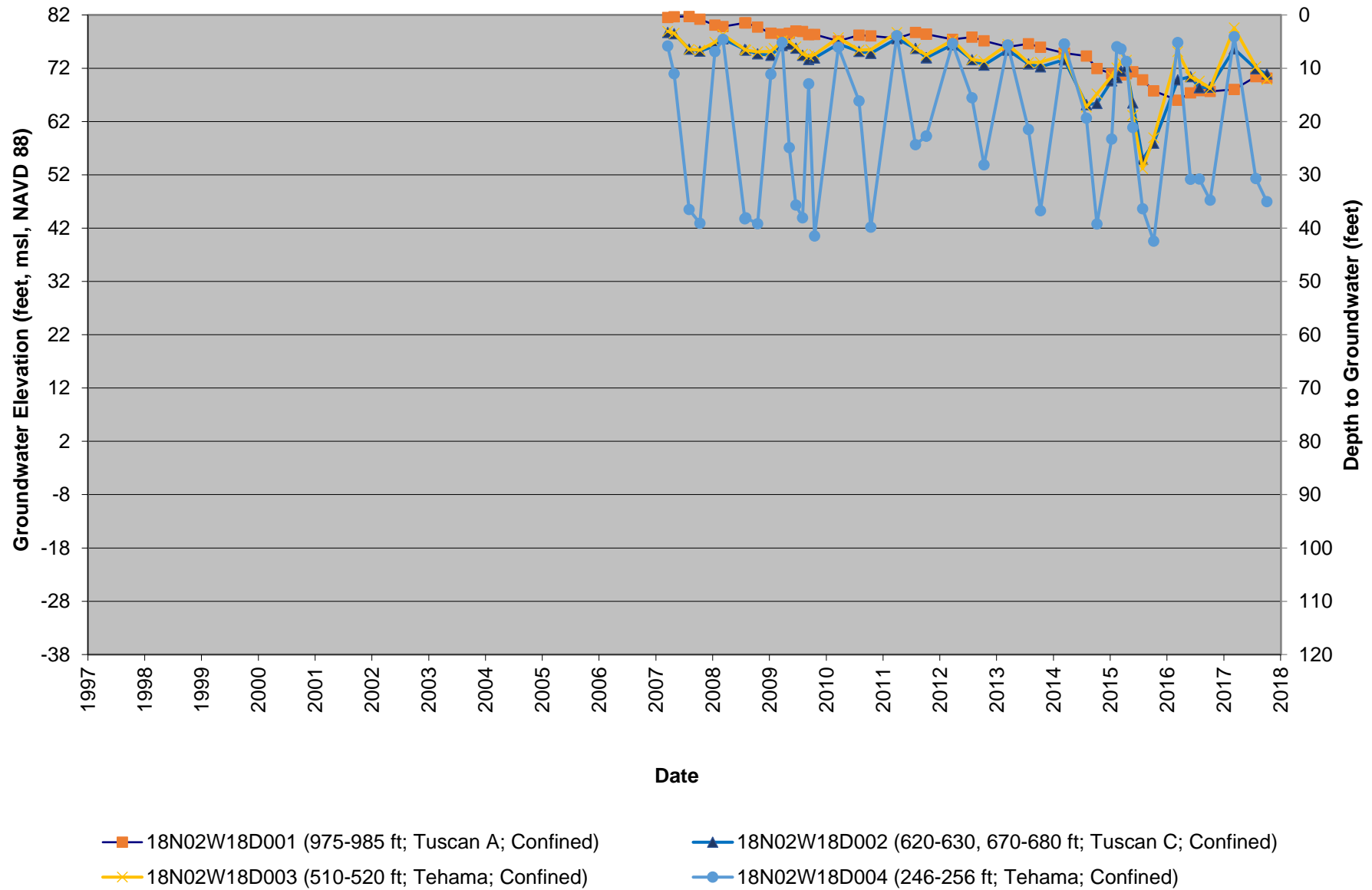


Figure A2-34. 19N01W22D004-007M Active Observation Well Cluster
Ground Surface Elevation 87.38 feet msl, NAVD 88

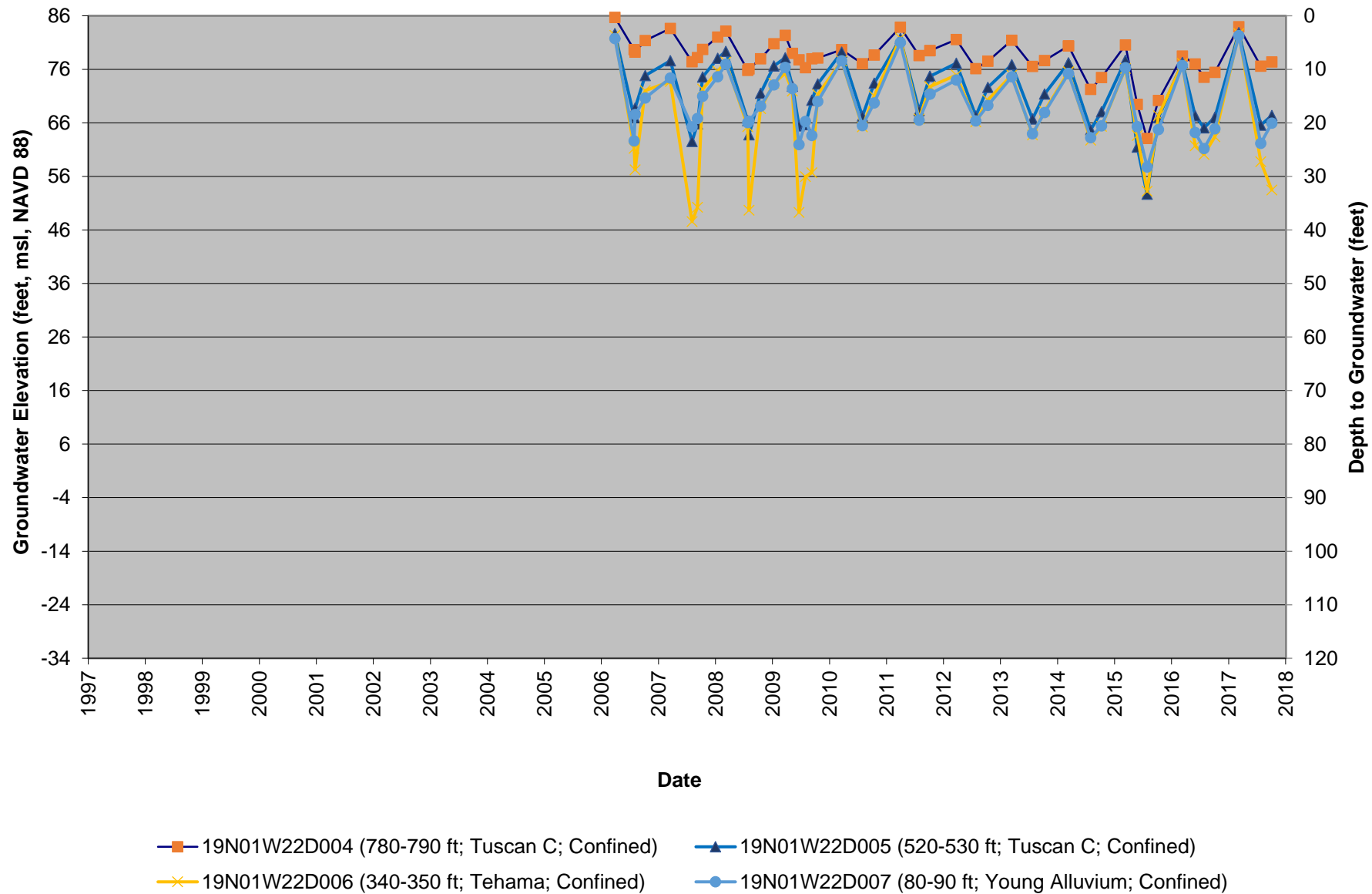


Figure A2-35. 19N02W08Q001-003M Active Observation Well Cluster
Ground Surface Elevation 108.36 feet msl, NAVD 88

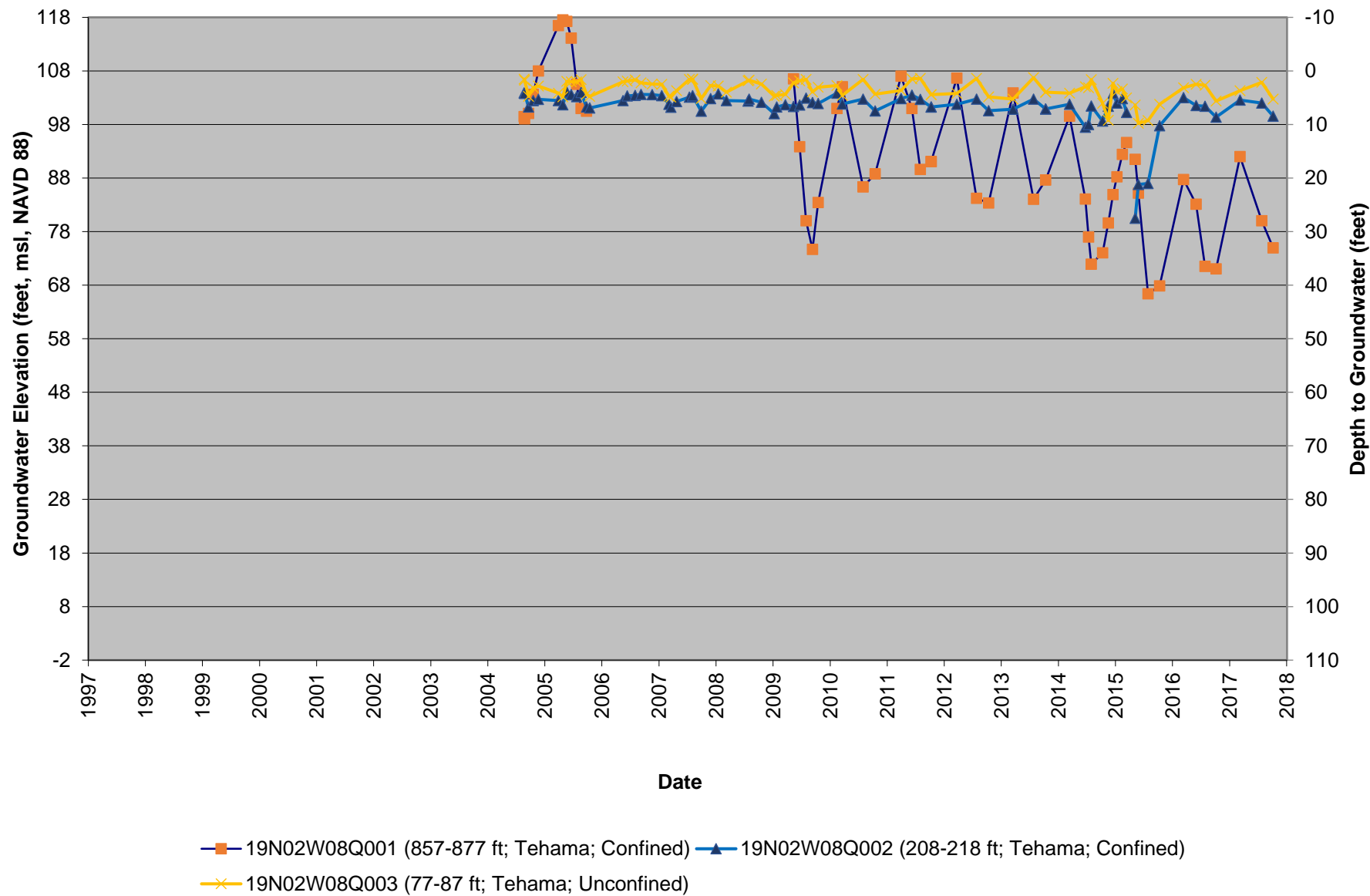


Figure A2-36. 19N02W33K001M Active Irrigation Well
Ground Surface Elevation 87.41 feet msl, NAVD 88

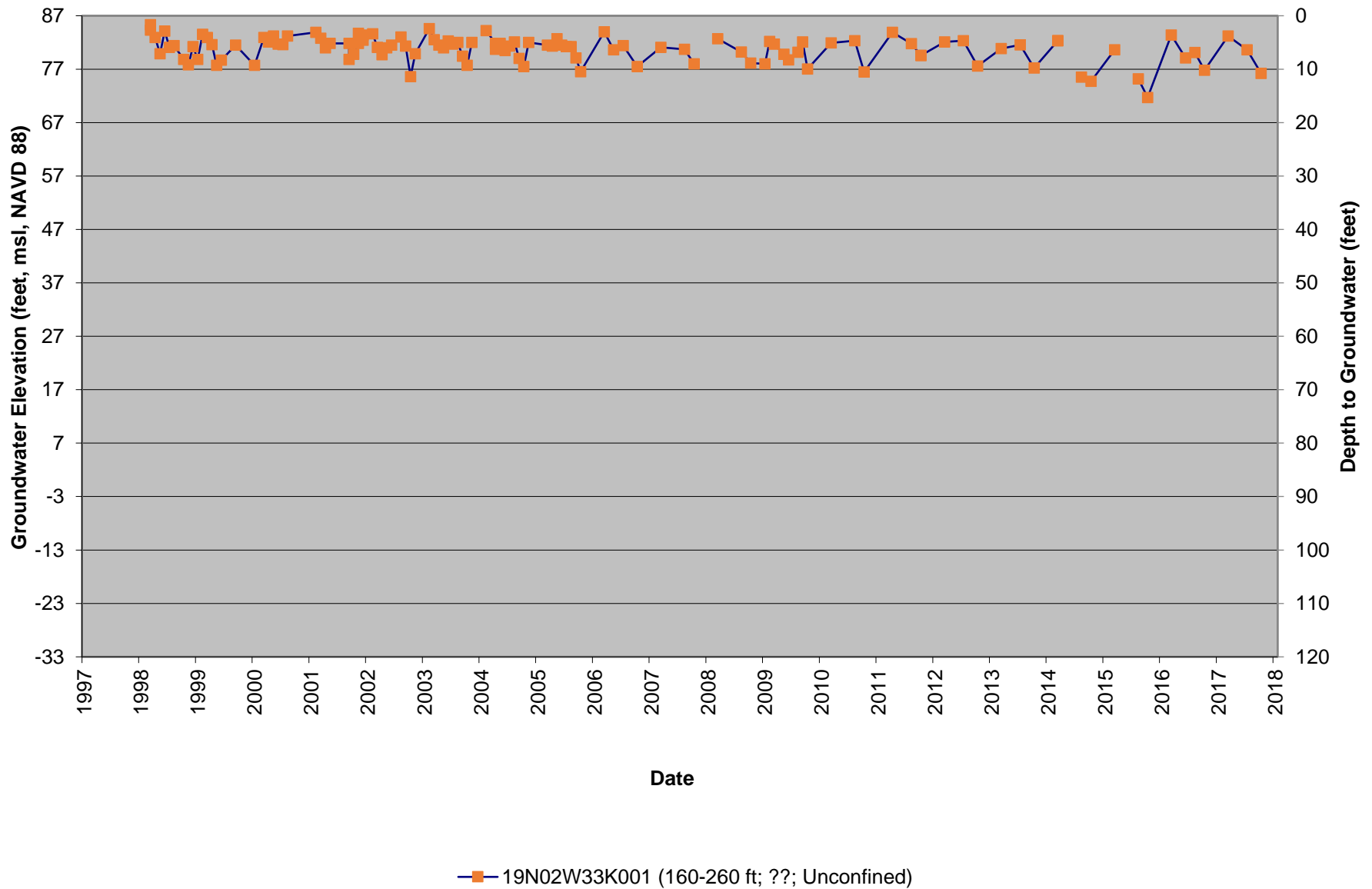


Figure A2-37. 19N04W14M002M Active Observation Well
Ground Surface Elevation 185.83 feet msl, NAVD 88

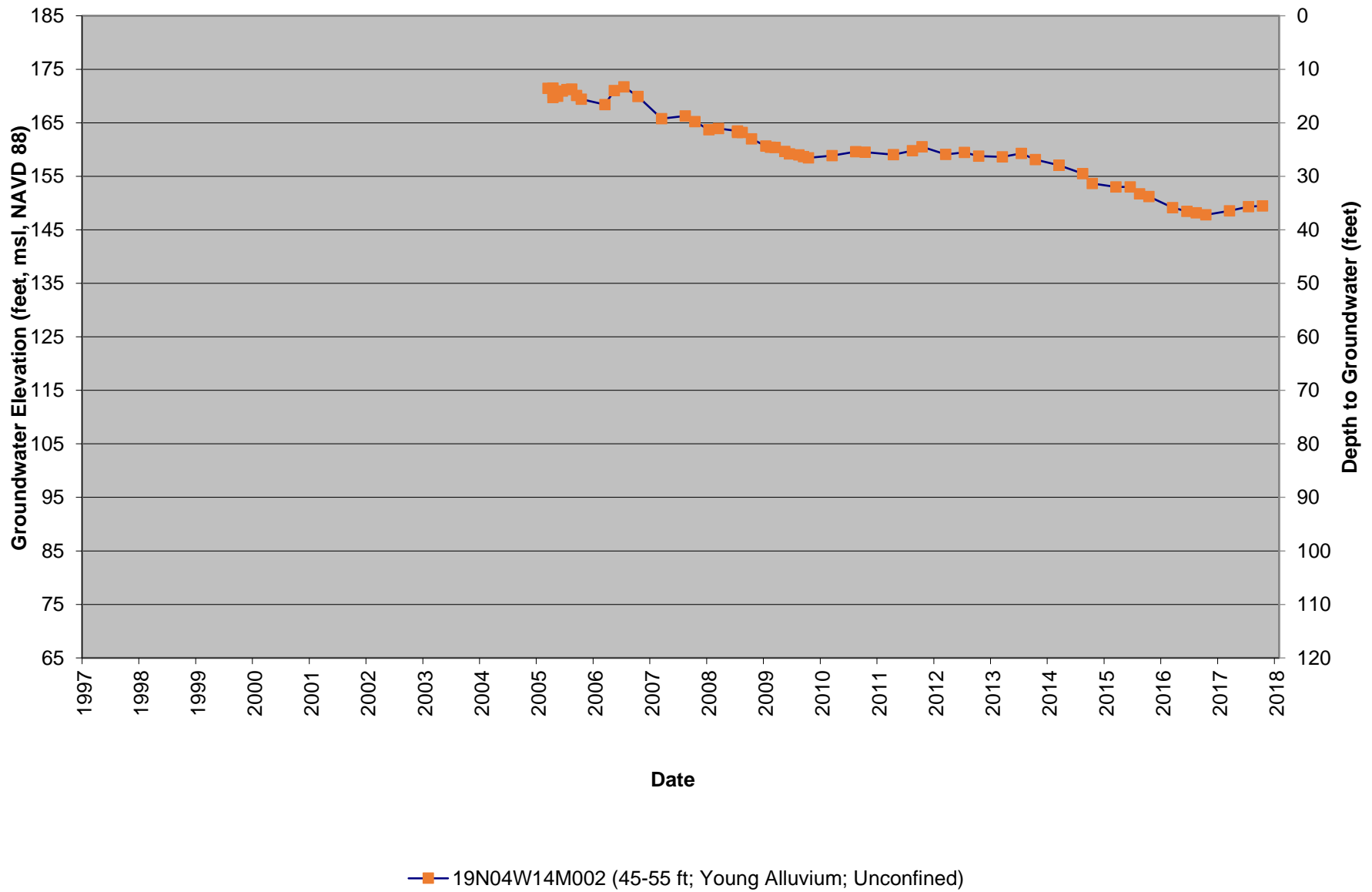


Figure A2-38. 20N02W11A001-003M Active Observation Well Cluster
Ground Surface Elevation 125.40 feet msl, NAVD 88

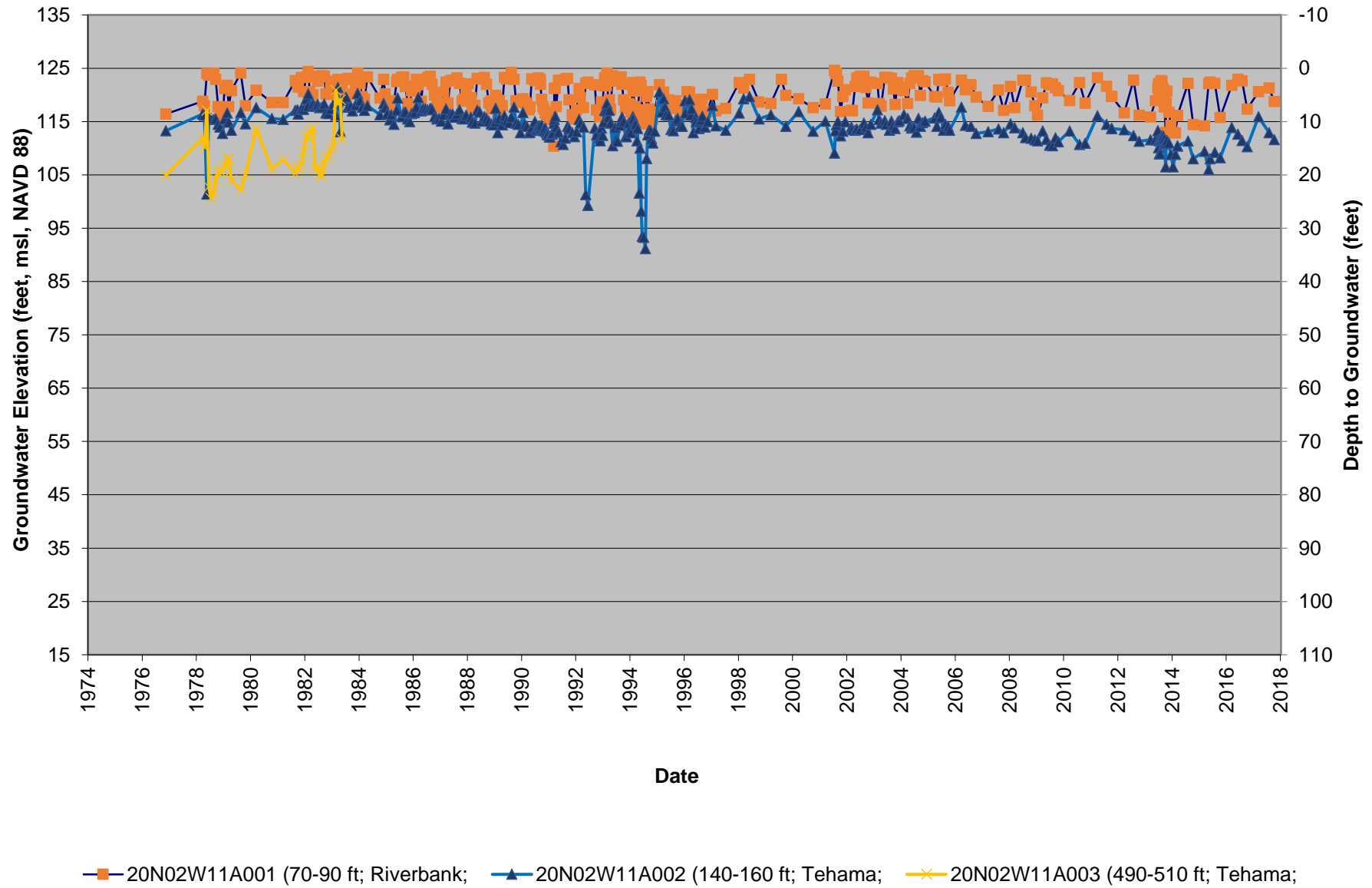


Figure A2-39. 20N02W18R005-008M Active Observation Well Cluster
Ground Surface Elevation 131.38 feet msl, NAVD 88

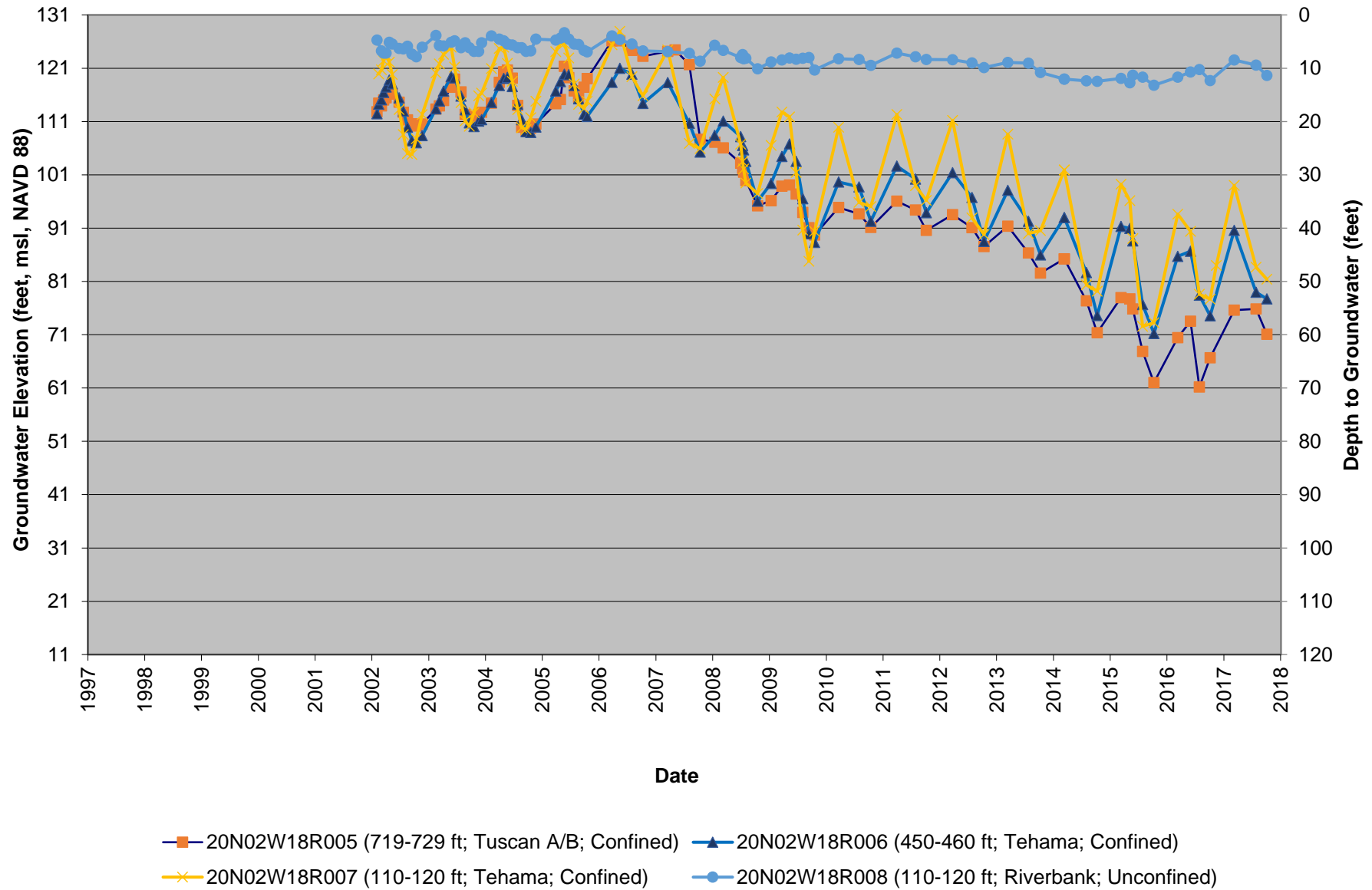


Figure A2-40. 20N02W25F001-004M Active Observation Well Cluster
Ground Surface Elevation 102.20 feet msl, NAVD 88

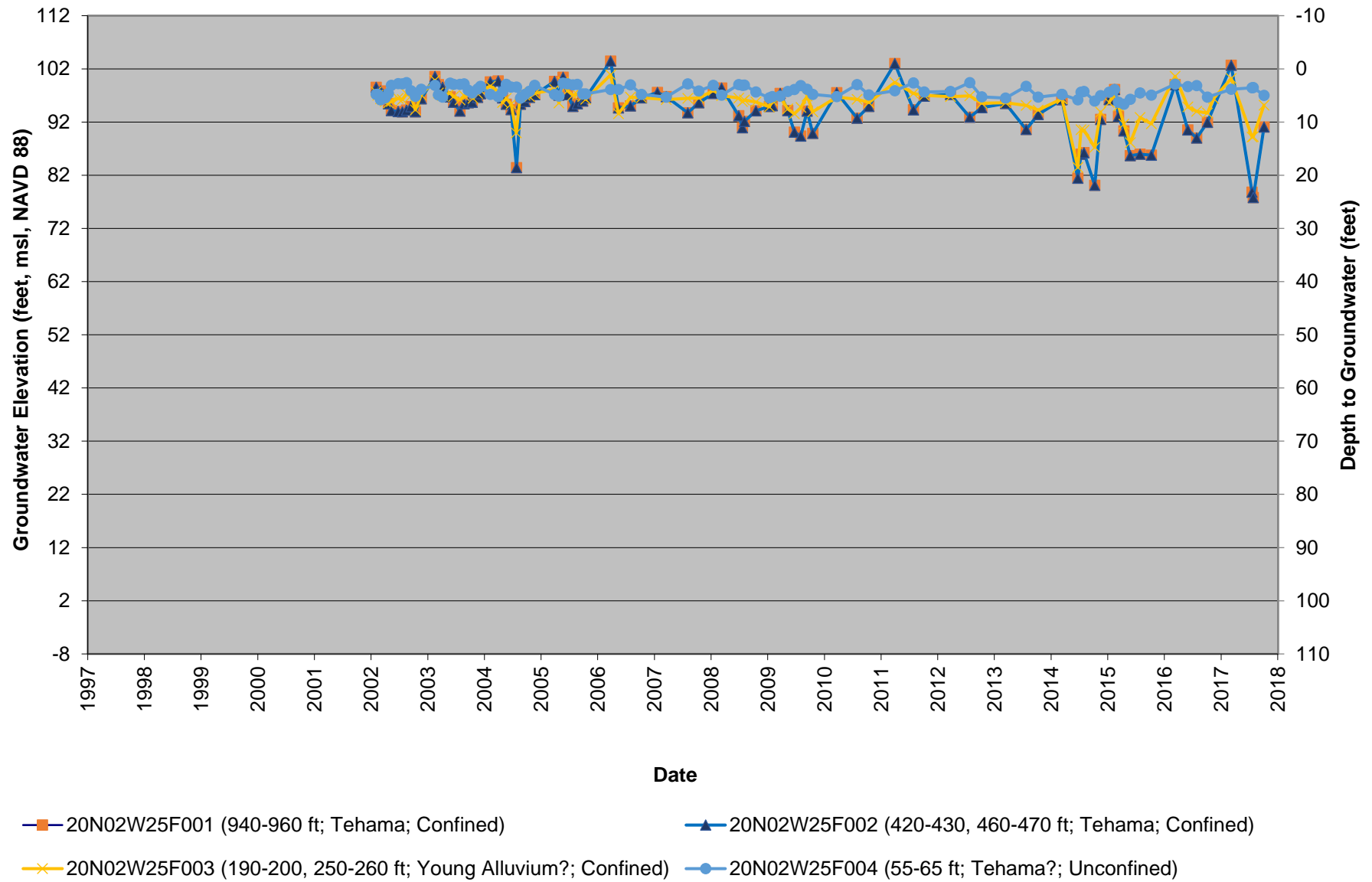


Figure A2-41. 20N02W33B001M Active Observation Well
Ground Surface Elevation 105.41 feet msl, NAVD 88

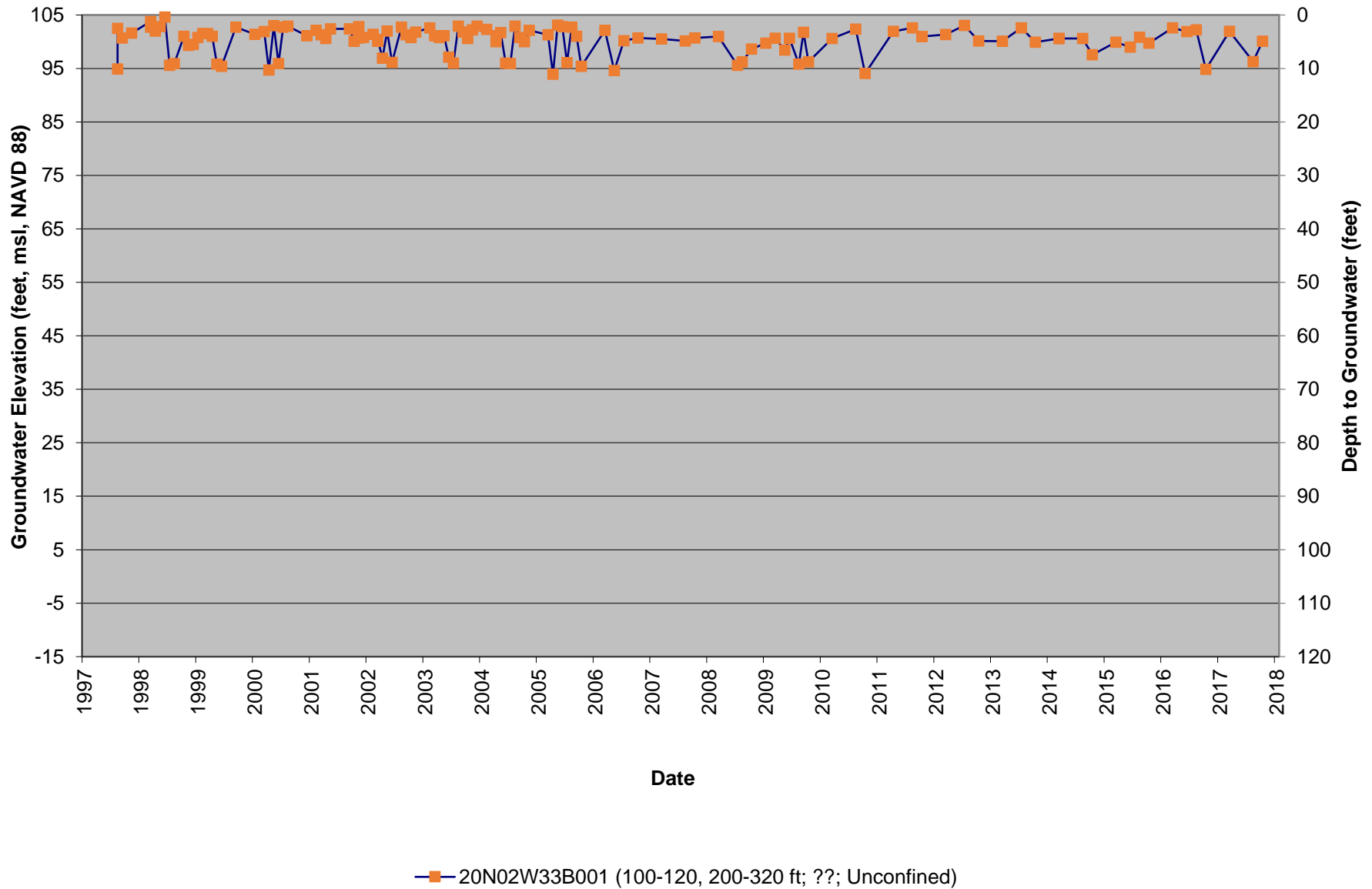


Figure A2-42. 20N03W07E001-004M Active Observation Well Cluster
Ground Surface Elevation 179.17 feet msl, NAVD 88

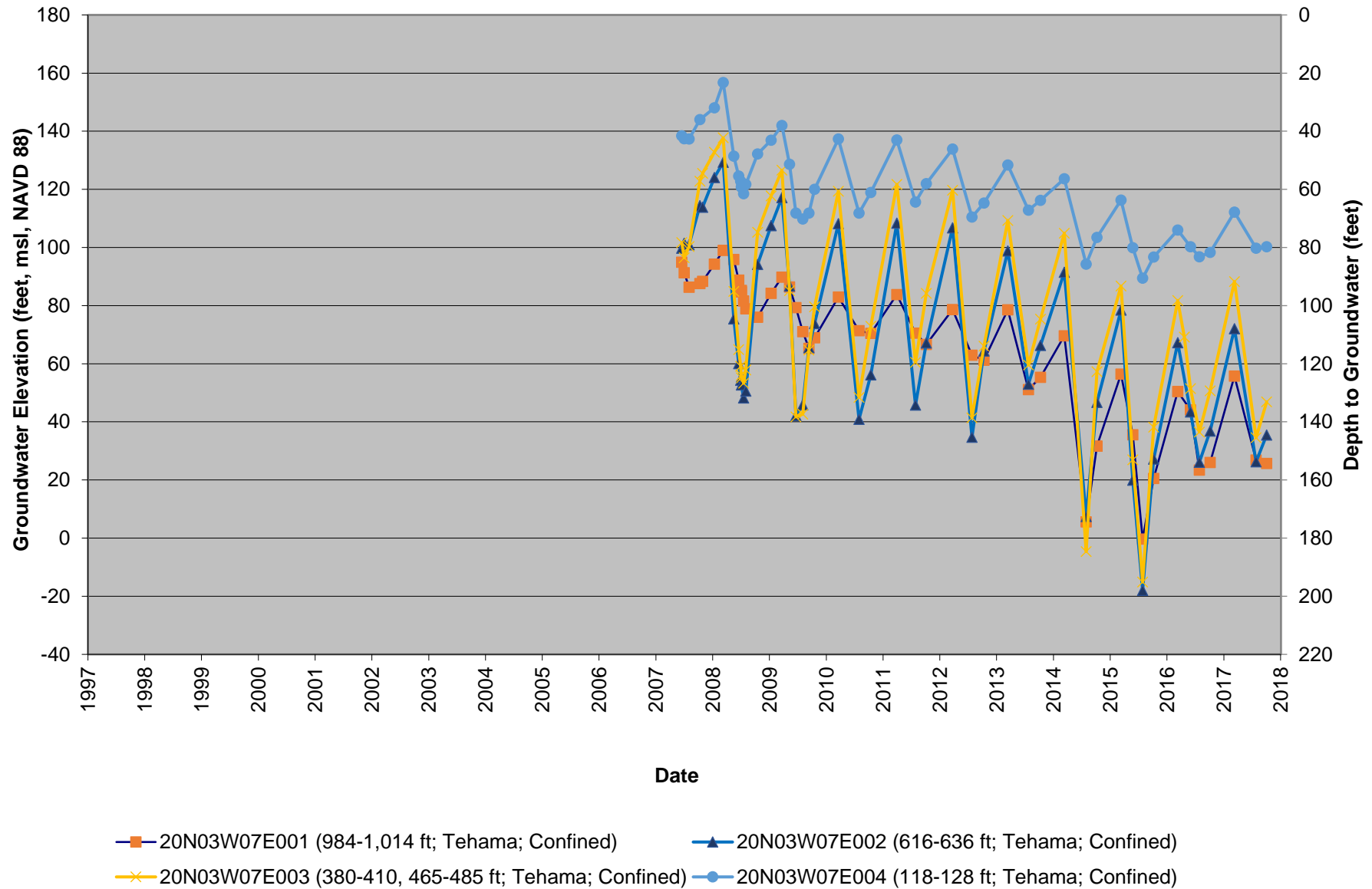


Figure A2-43. 21N02W01F001-004M Active Observation Well Cluster
Ground Surface Elevation 160.88 feet msl, NAVD 88

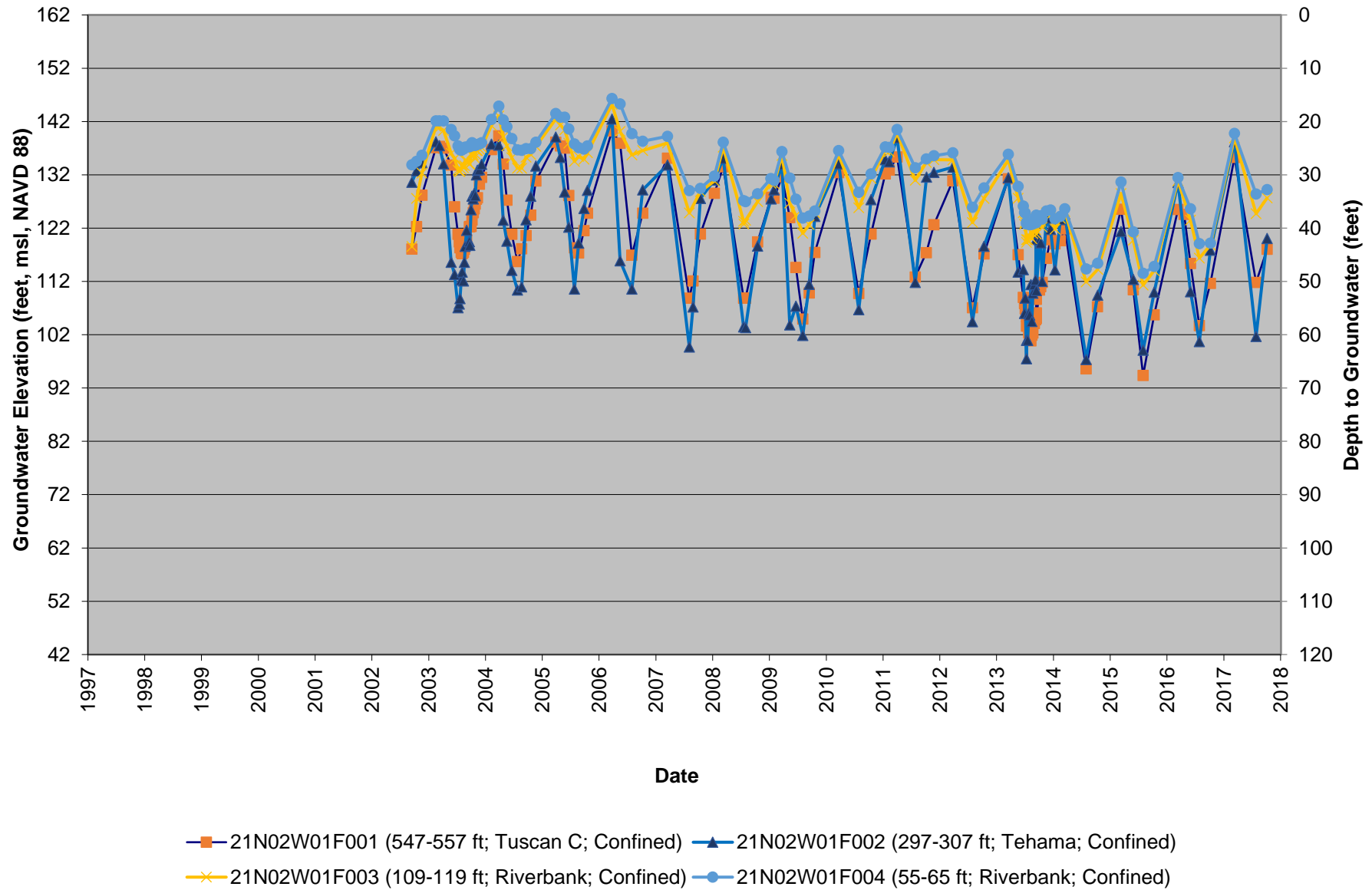


Figure A2-44. 21N02W04G002-005M Active Observation Well Cluster
Ground Surface Elevation 178.41 feet msl, NAVD 88

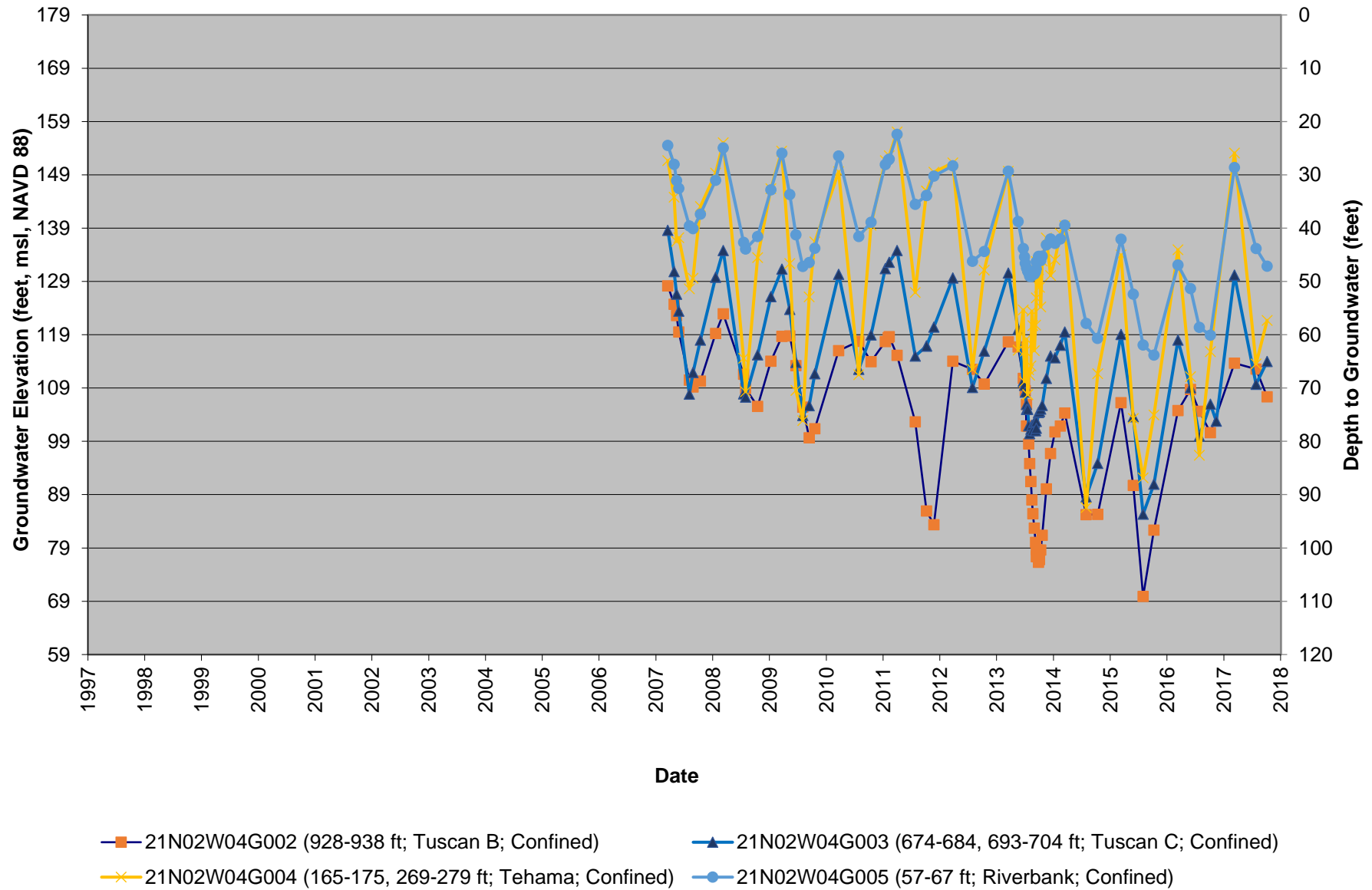


Figure A2-45. 21N02W05M001-003M Active Observation Well Cluster
Ground Surface Elevation 188.93 feet msl, NAVD 88

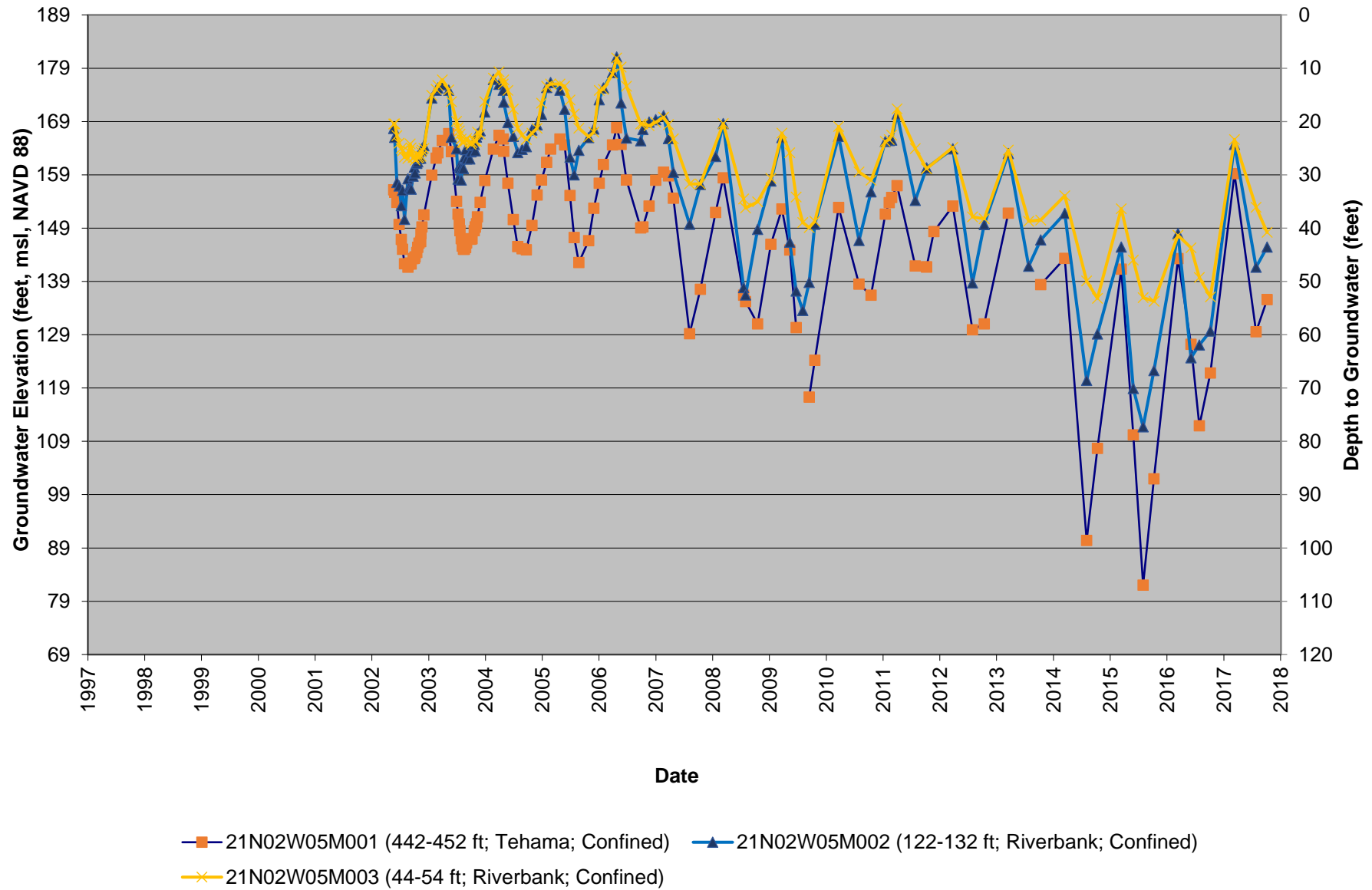


Figure A2-46. 21N02W33M001-003M Active Observation Well Cluster
Ground Surface Elevation 149.00 feet msl, NAVD 88

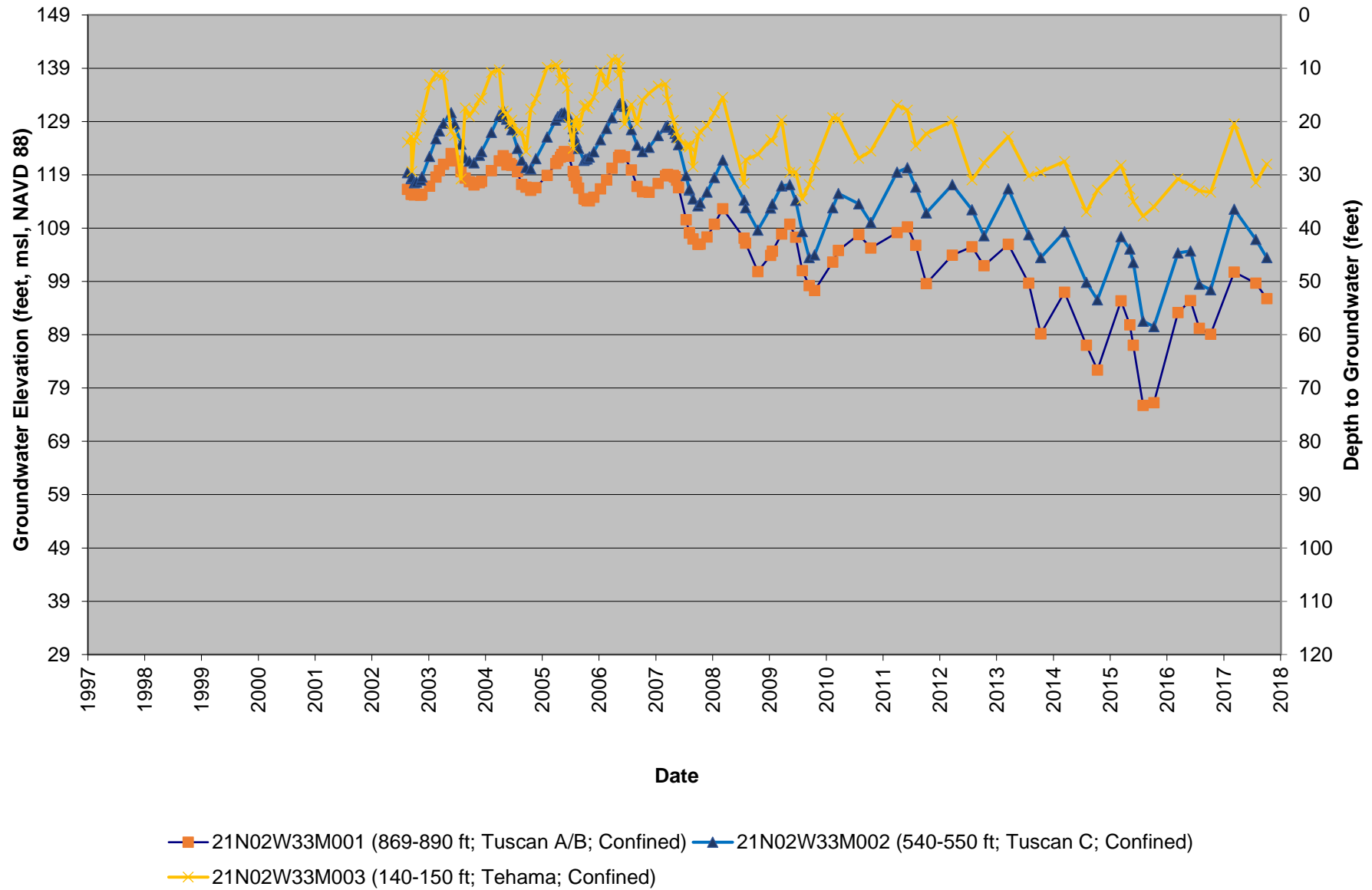


Figure A2-47. 21N02W36A002M Active Observation Well
Ground Surface Elevation 135.39 feet msl, NAVD 88

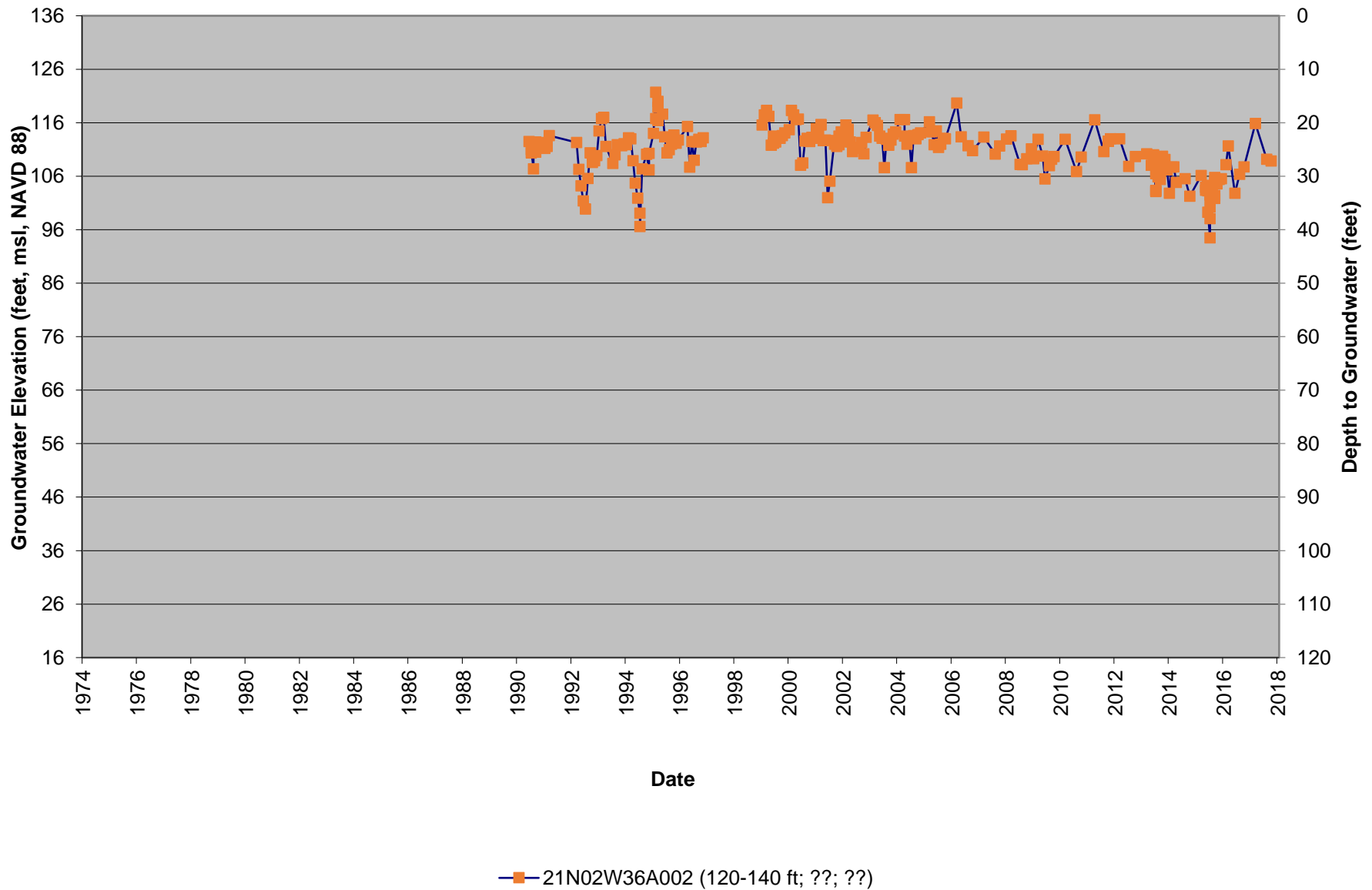


Figure A2-48. 21N03W01R002M Active Observation Well
Ground Surface Elevation 203.32 feet msl, NAVD 88

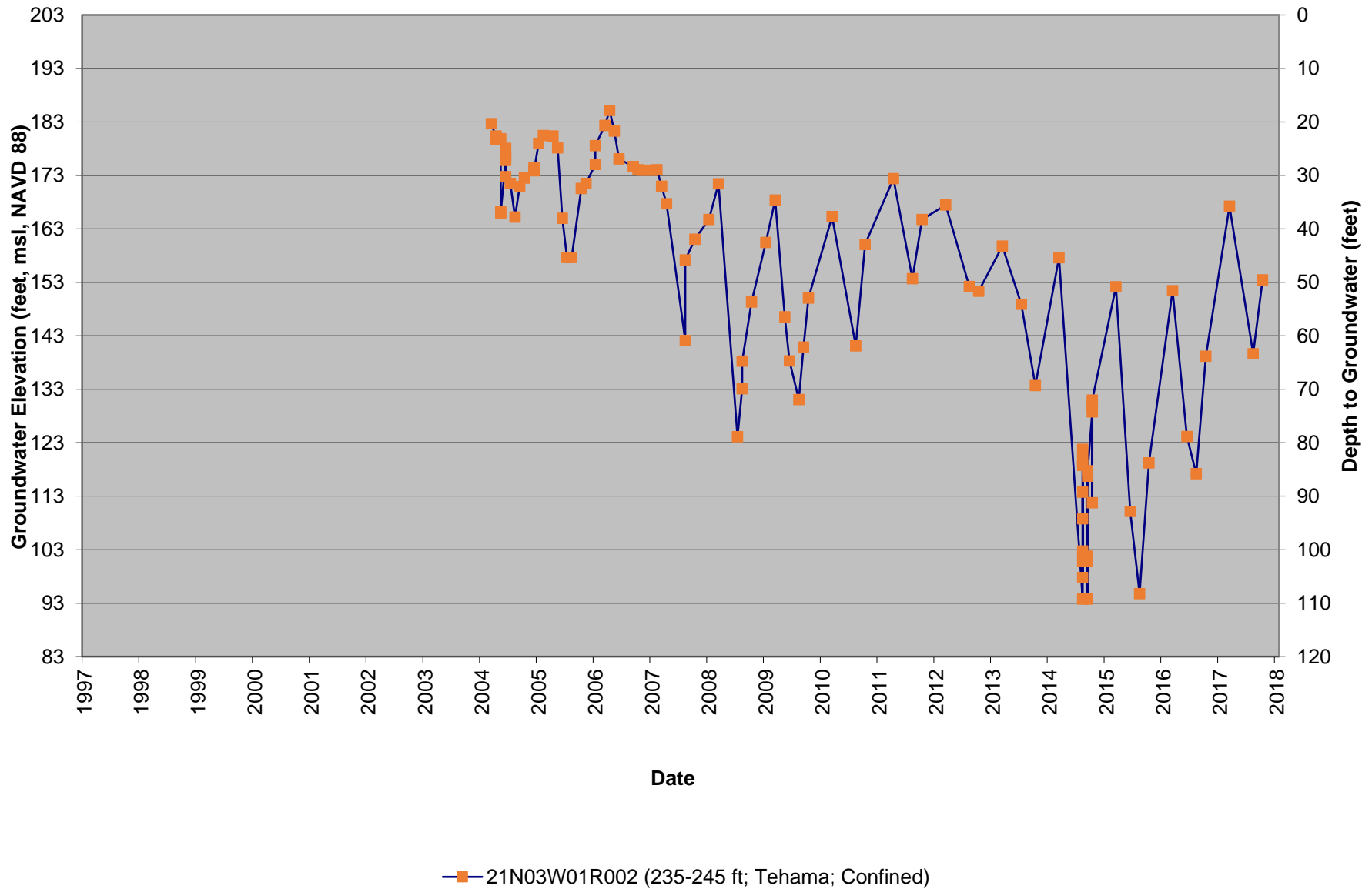


Figure A2-49. 21N03W23D001-003M Active Observation Well Cluster
Ground Surface Elevation 204.76 feet msl, NAVD 88

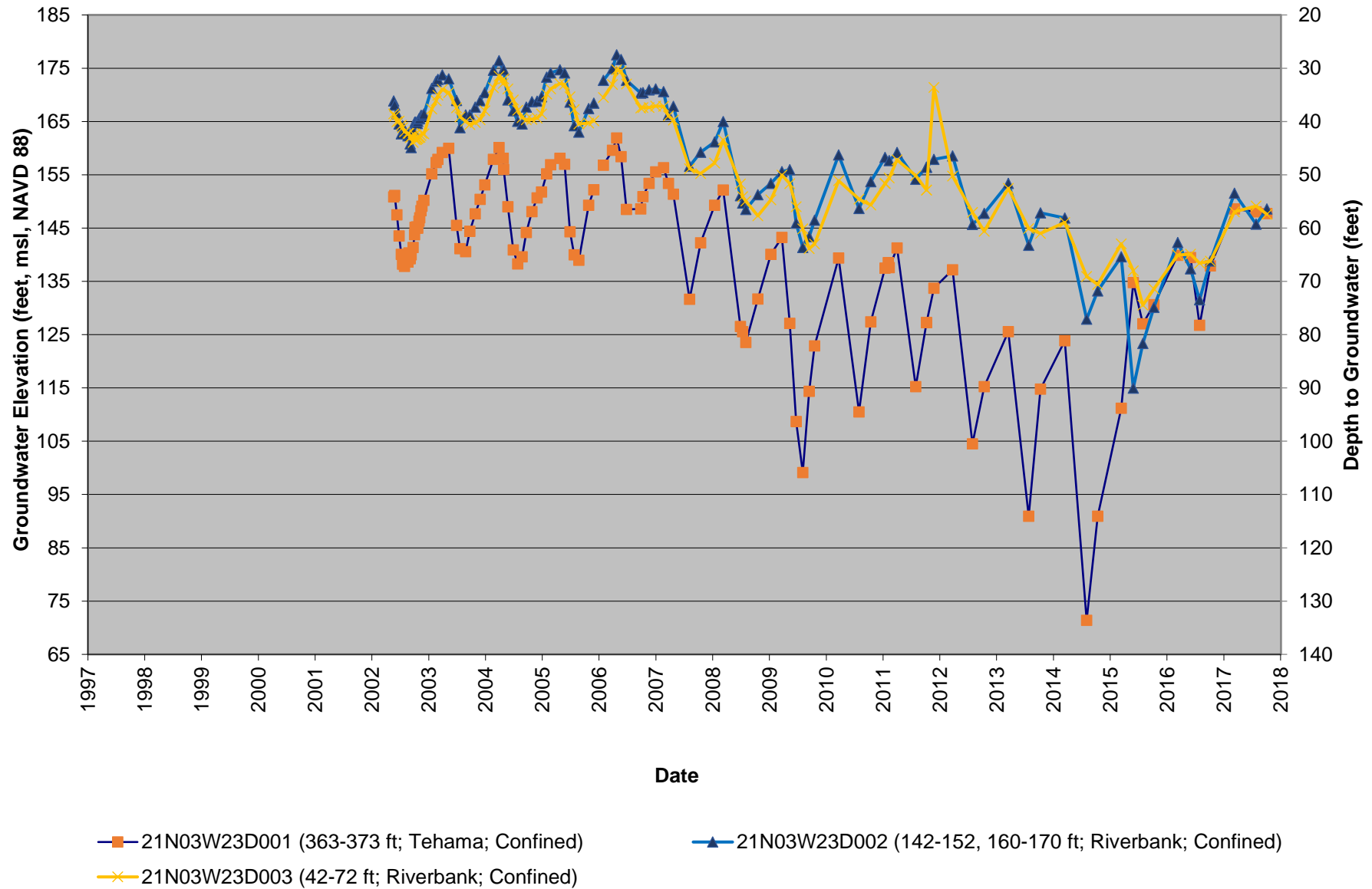


Figure A2-50. 21N03W34Q002-004M Active Observation Well Cluster
Ground Surface Elevation 166.65 feet msl, NAVD 88

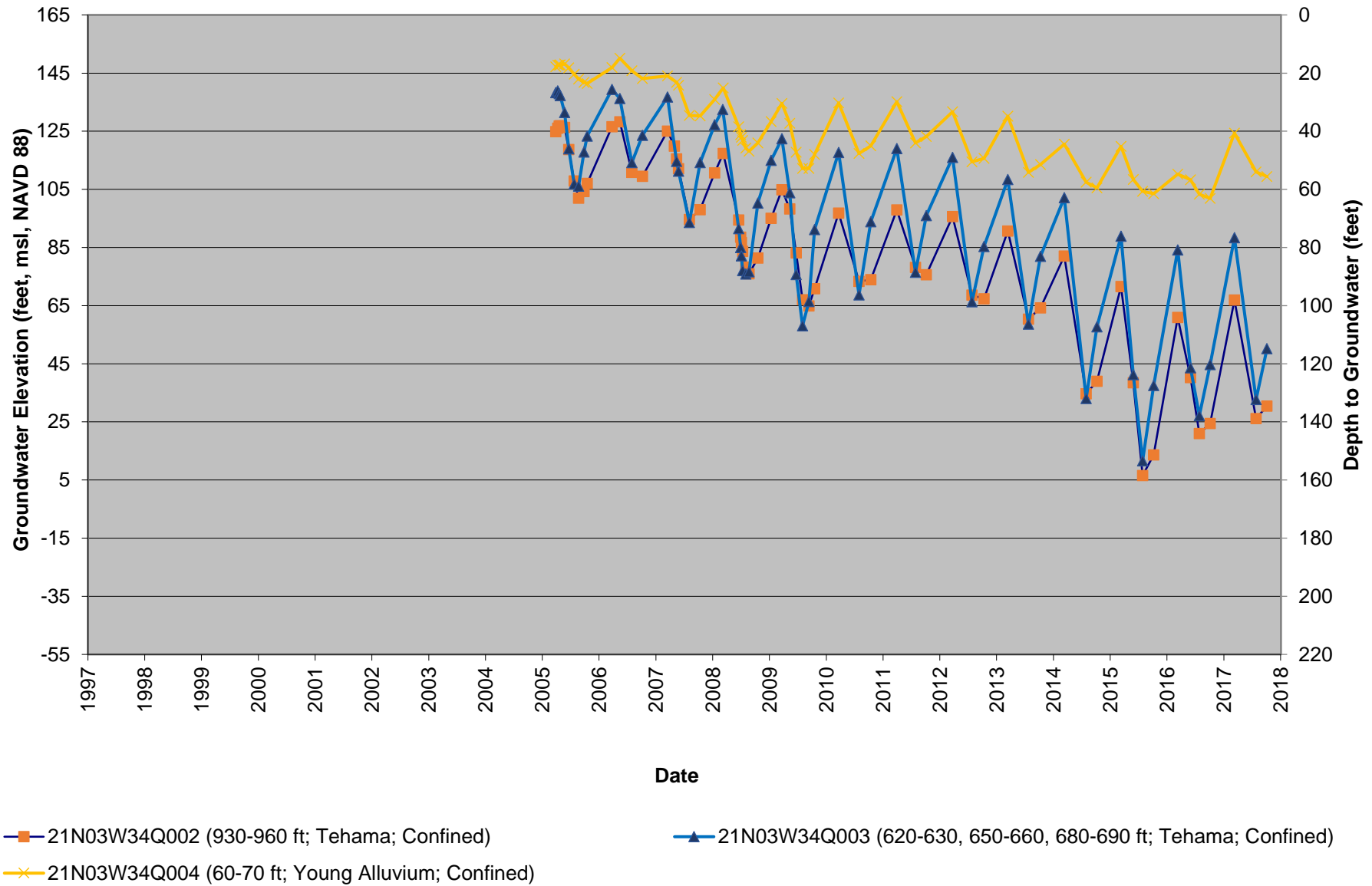


Figure A2-51. 21N04W12A002-004M Active Observation Well Cluster
Ground Surface Elevation 247.88 feet msl, NAVD 88

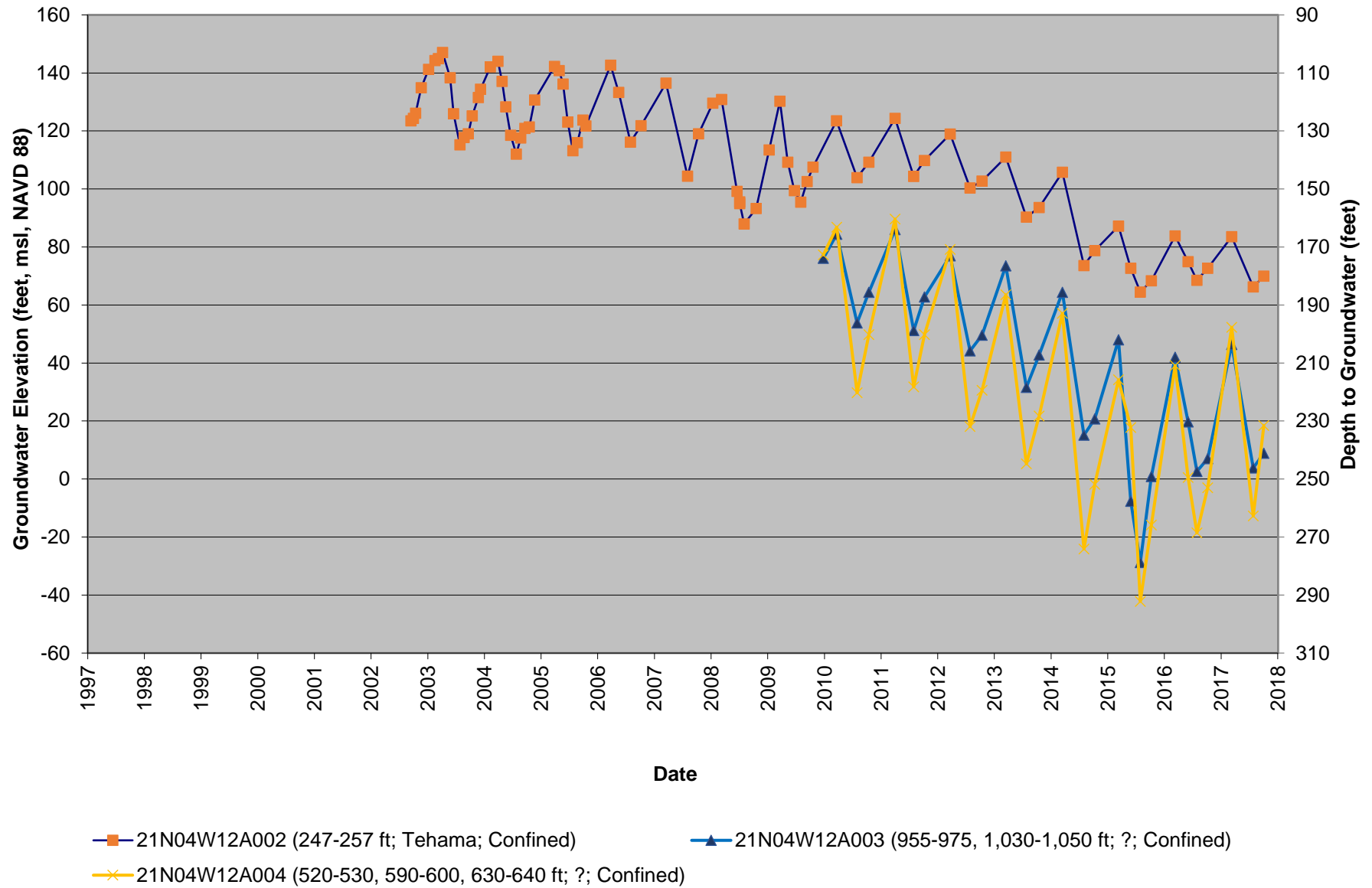


Figure A2-52. 22N01W29N001-004M Active Observation Well Cluster
Ground Surface Elevation 146.25 feet msl, NAVD 88

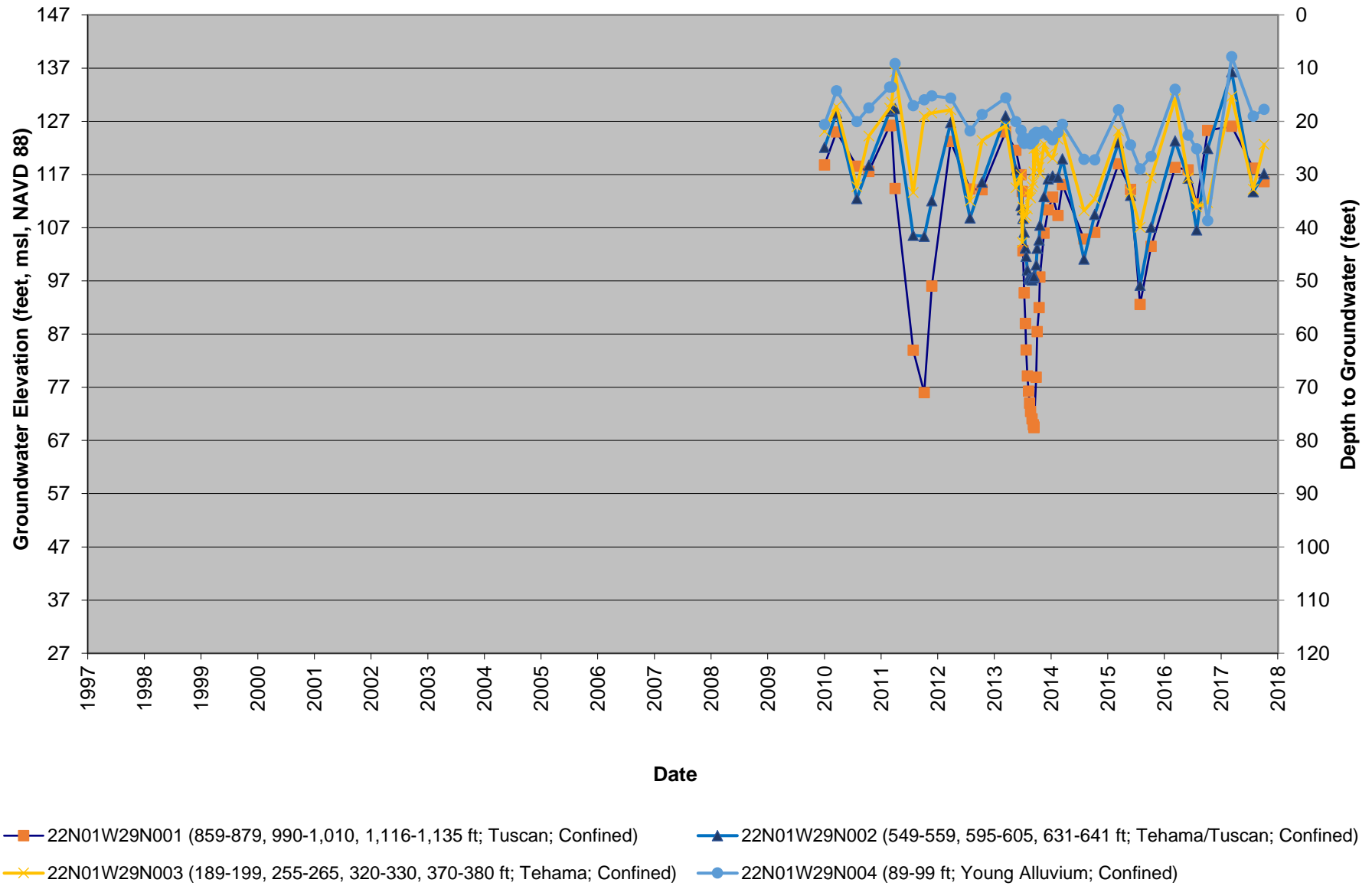


Figure A2-53. 22N02W01N001-004M Active Observation Well Cluster
Ground Surface Elevation 159.21 feet msl, NAVD 88

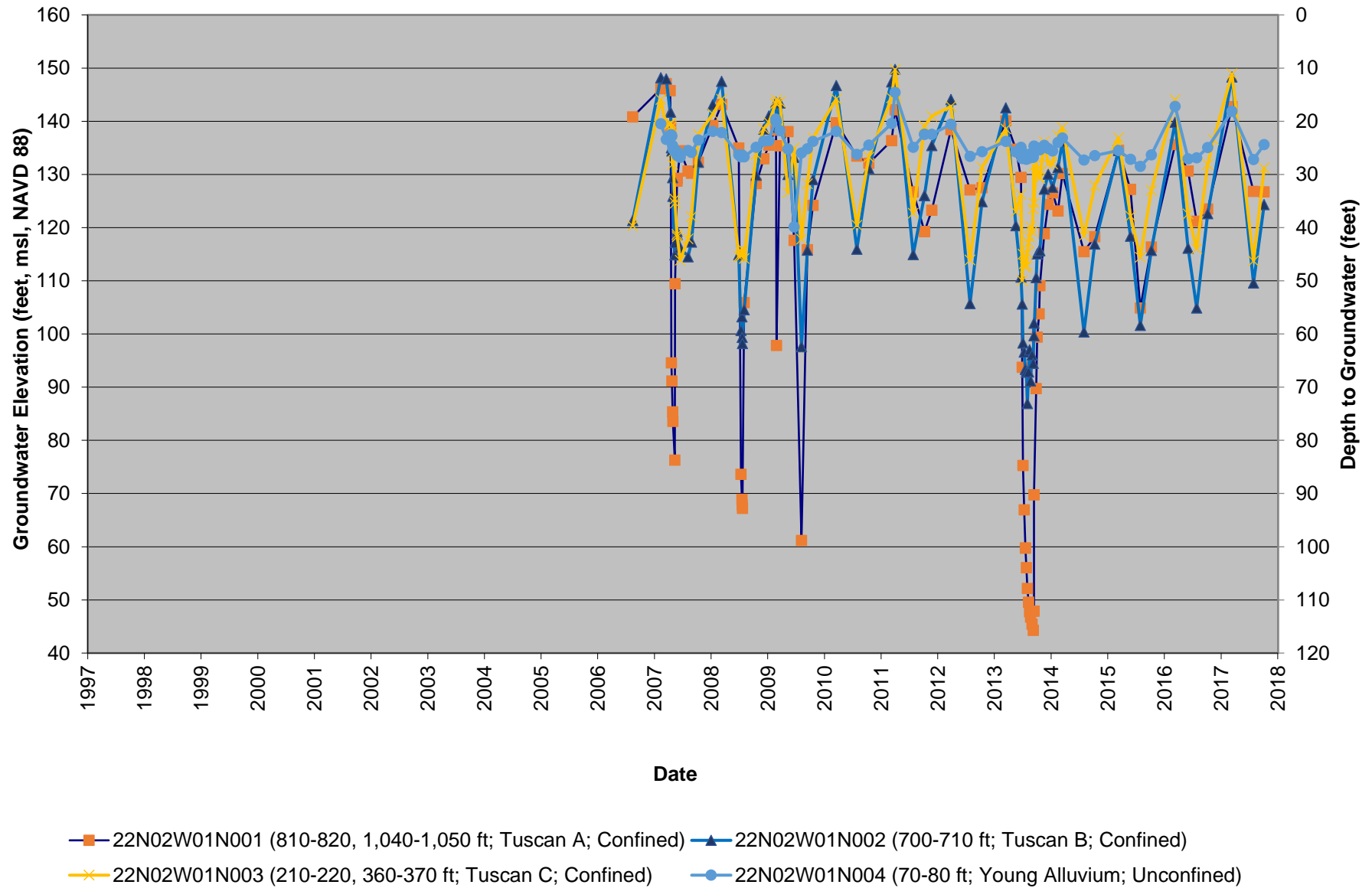


Figure A2-54. 22N02W15C002-05M Active Observation Well Cluster
Ground Surface Elevation 189.30 feet msl, NAVD 88

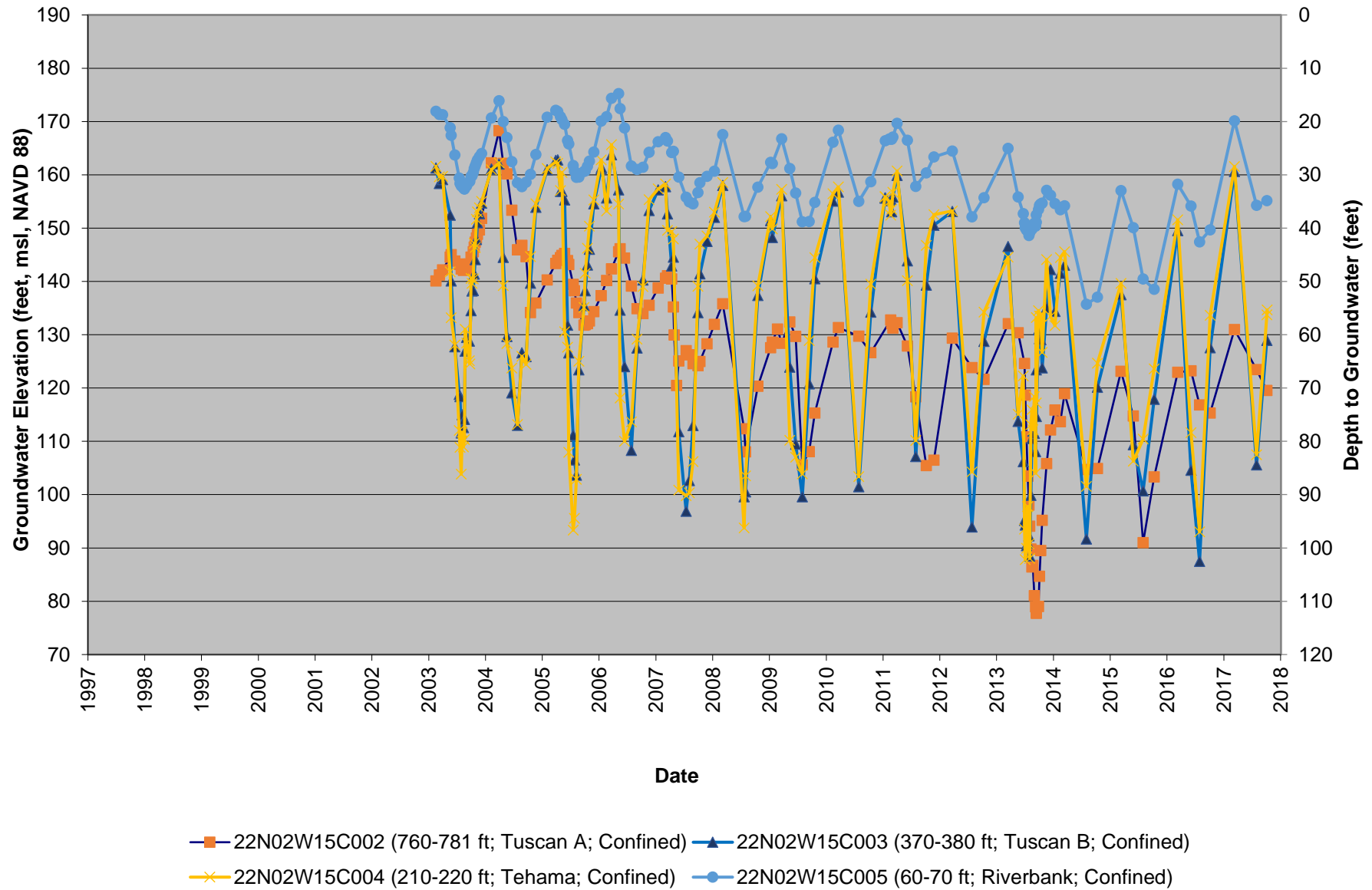


Figure A2-55. 22N02W18C001-004M Active Observation Well Cluster
Ground Surface Elevation 223.44 feet msl, NAVD 88

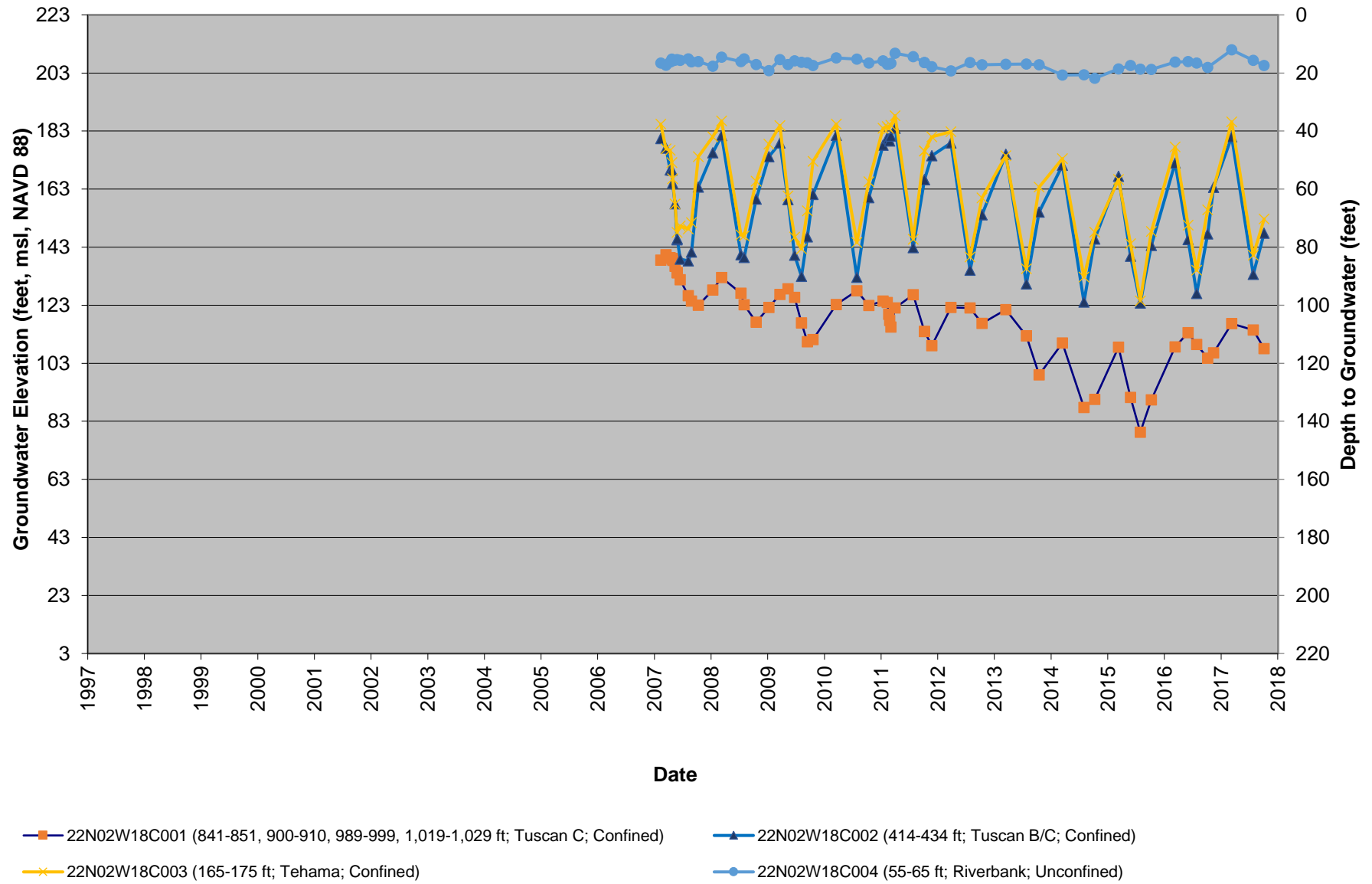


Figure A2-56. 22N02W30H002-004M Active Observation Well Cluster
Ground Surface Elevation 204.43 feet msl, NAVD 88

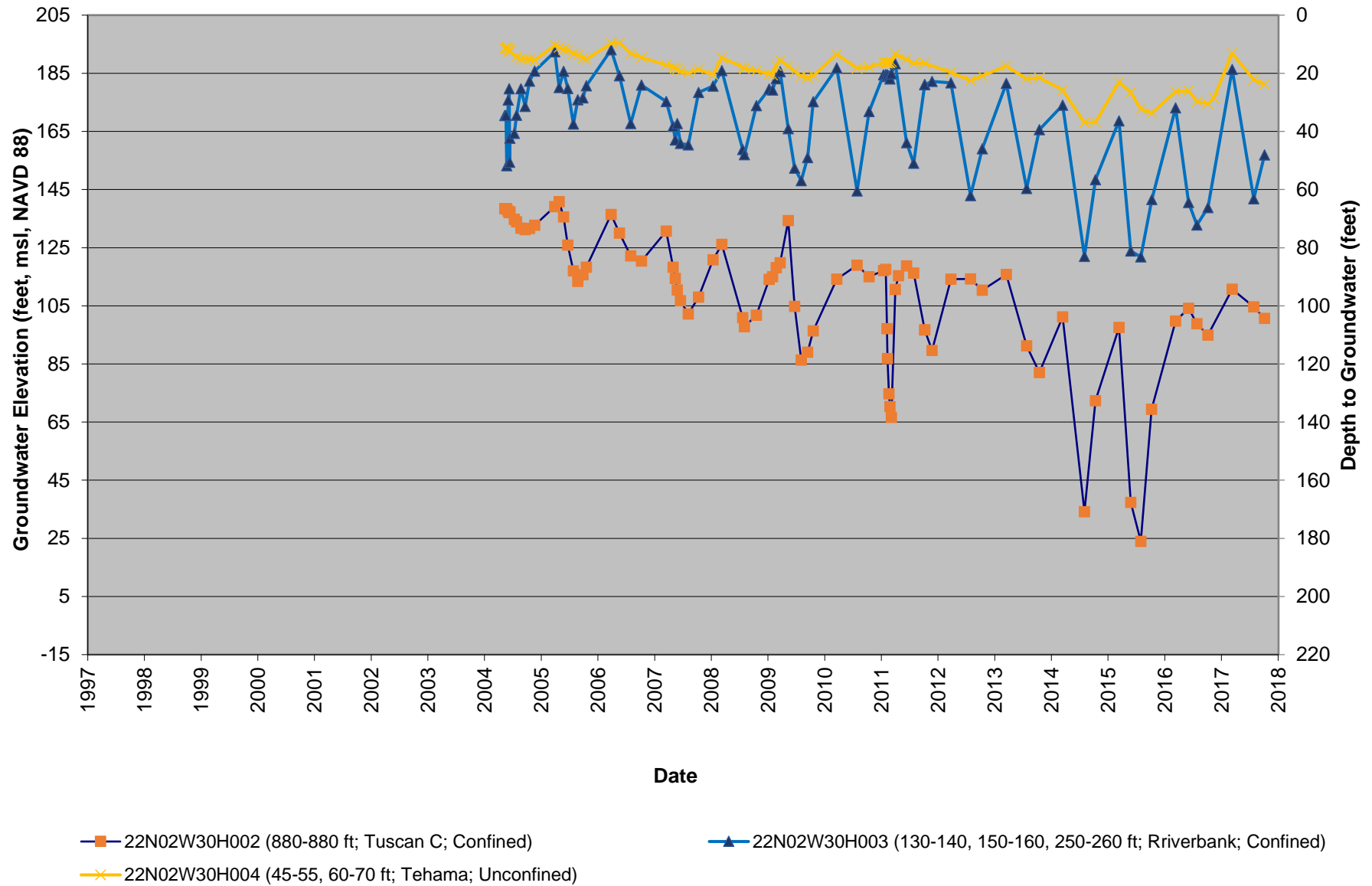


Figure A2-57. 22N03W01R001-003M Active Observation Well Cluster
Ground Surface Elevation 226.04 feet msl, NAVD 88

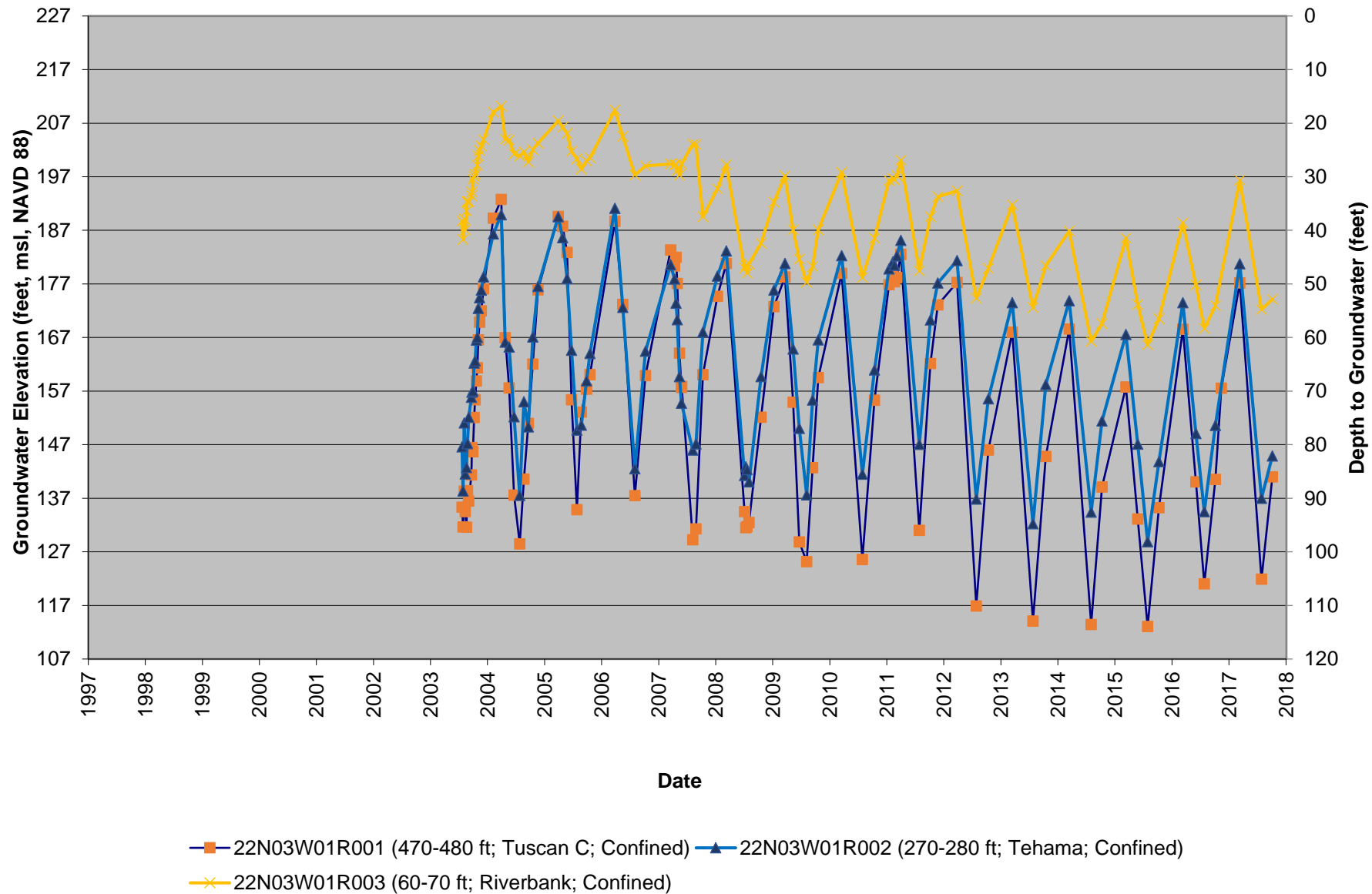


Figure A2-58. 22N03W24E001-003M Active Observation Well Cluster
Ground Surface Elevation 230.51 feet msl, NAVD 88

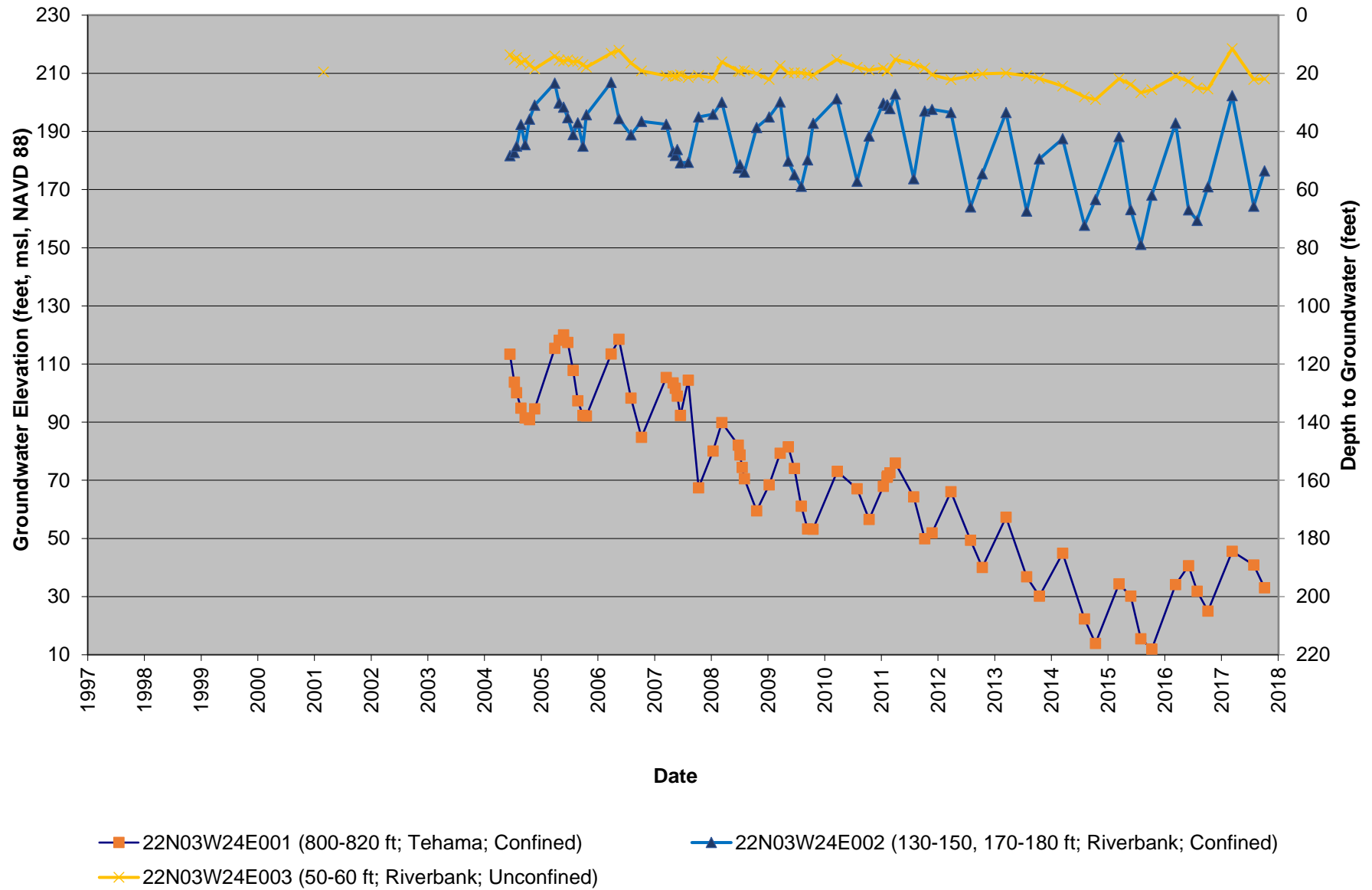
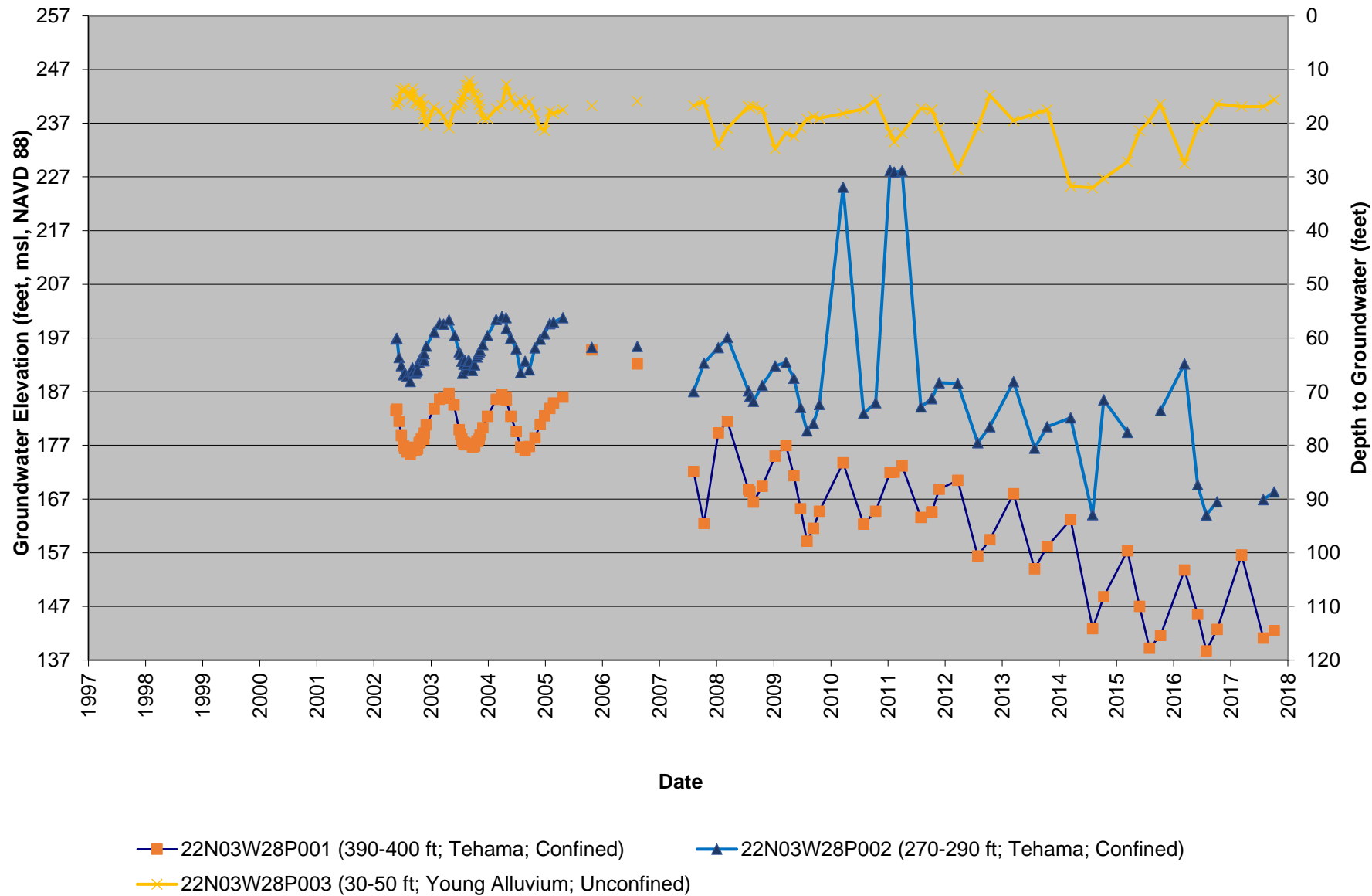
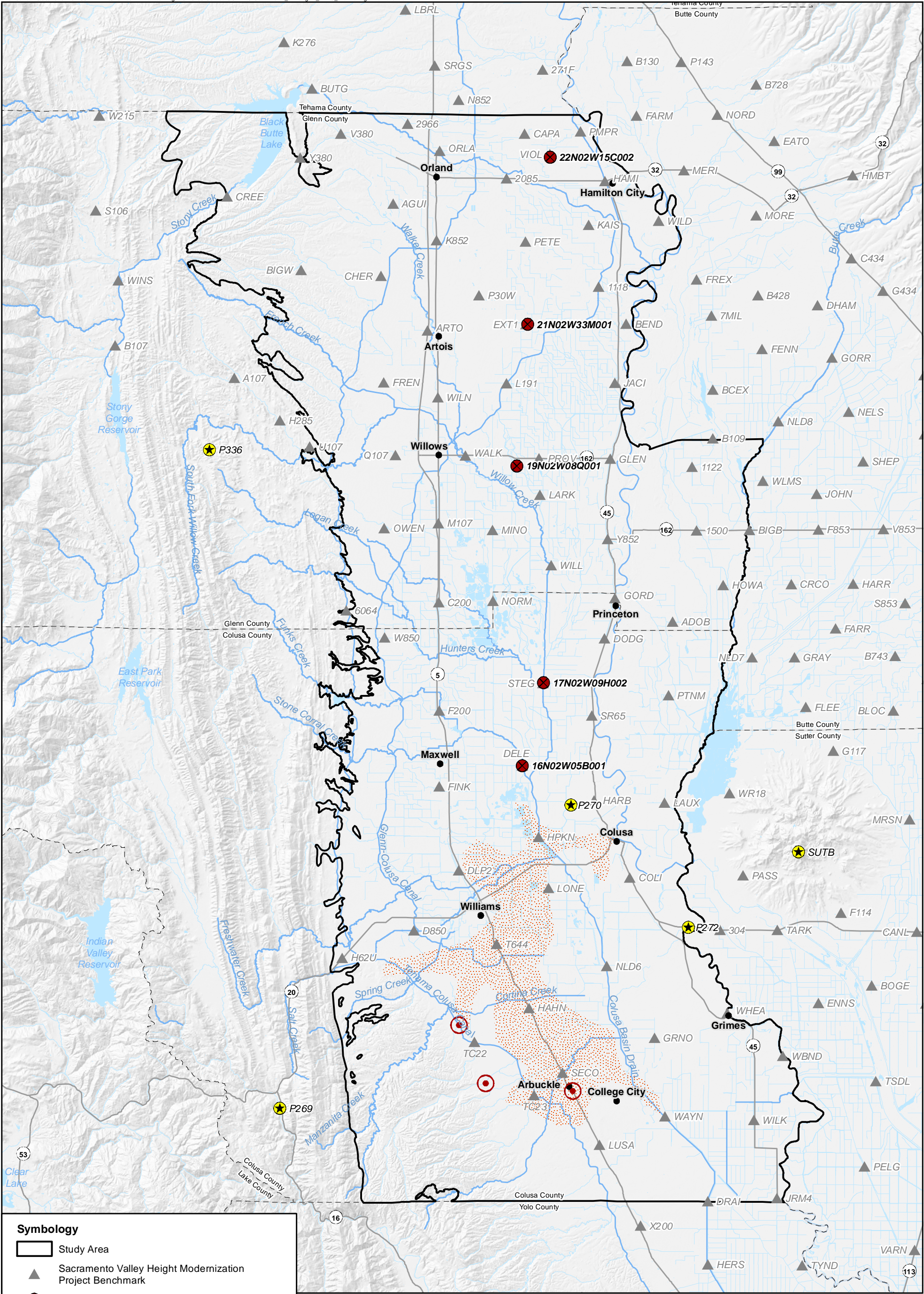


Figure A2-59. 22N03W28P001-003M Active Observation Well Cluster
Ground Surface Elevation 258.22 feet msl, NAVD 88



APPENDIX B

Extensometer Measurements



Symbology

- Study Area
- Sacramento Valley Height Modernization Project Benchmark
- Extensometer
- Continuous GPS Station
- Potential New Extensometer Location Proposed for the Land Subsidence Monitoring Network
- Approximate Areas of Land Subsidence Greater than 2-Inches (Farr et.al., 2015)

Datum: North American Datum of 1983, California State Plane Zone II, feet.

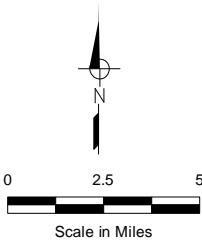


Figure B-1
Land Subsidence Monitoring Networks
Counties of Colusa and Glenn
Monitoring Network
Assessment Report

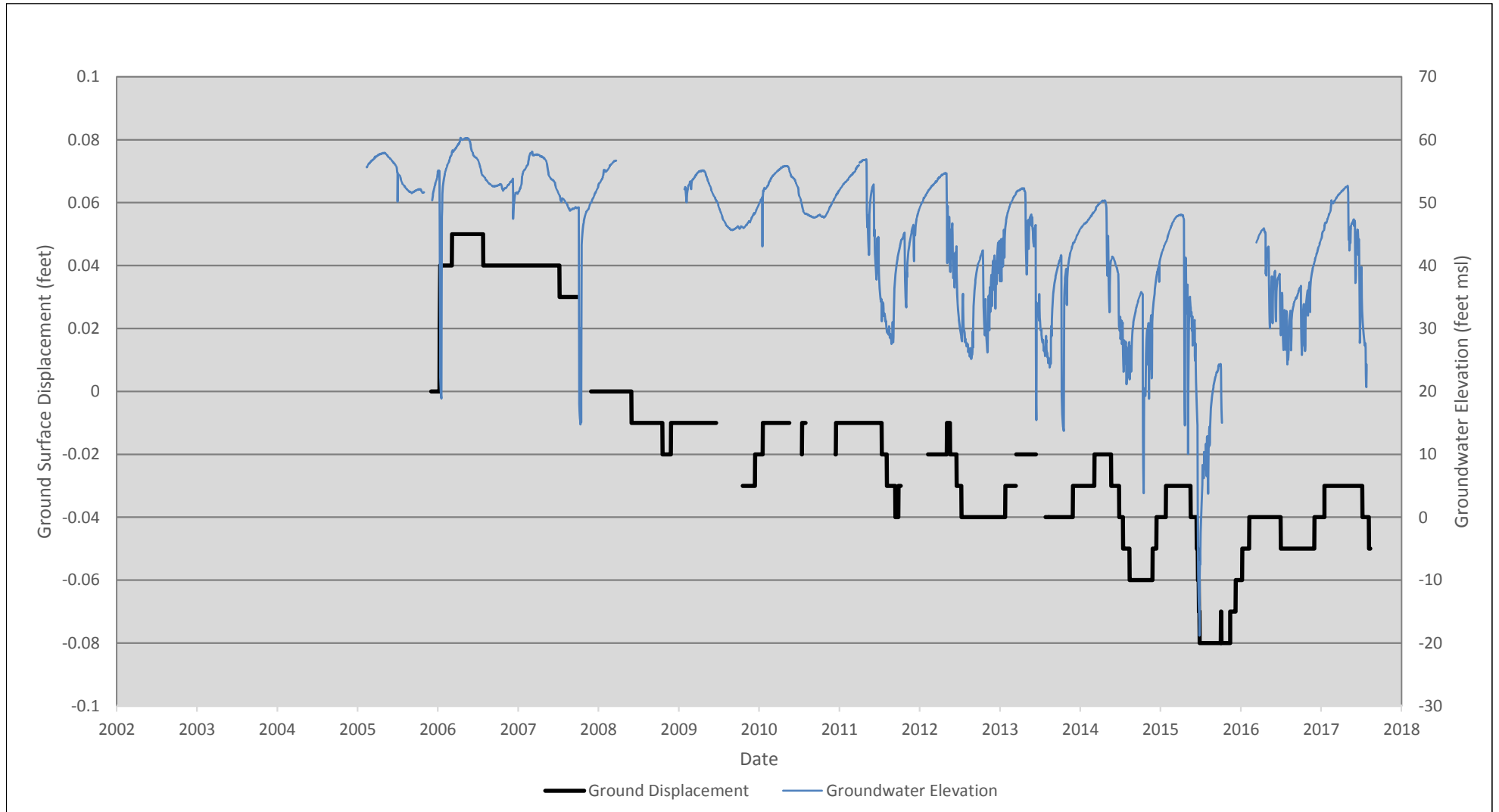


Figure B-2

**Land Subsidence from
Extensometer 16N02W05B001M**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



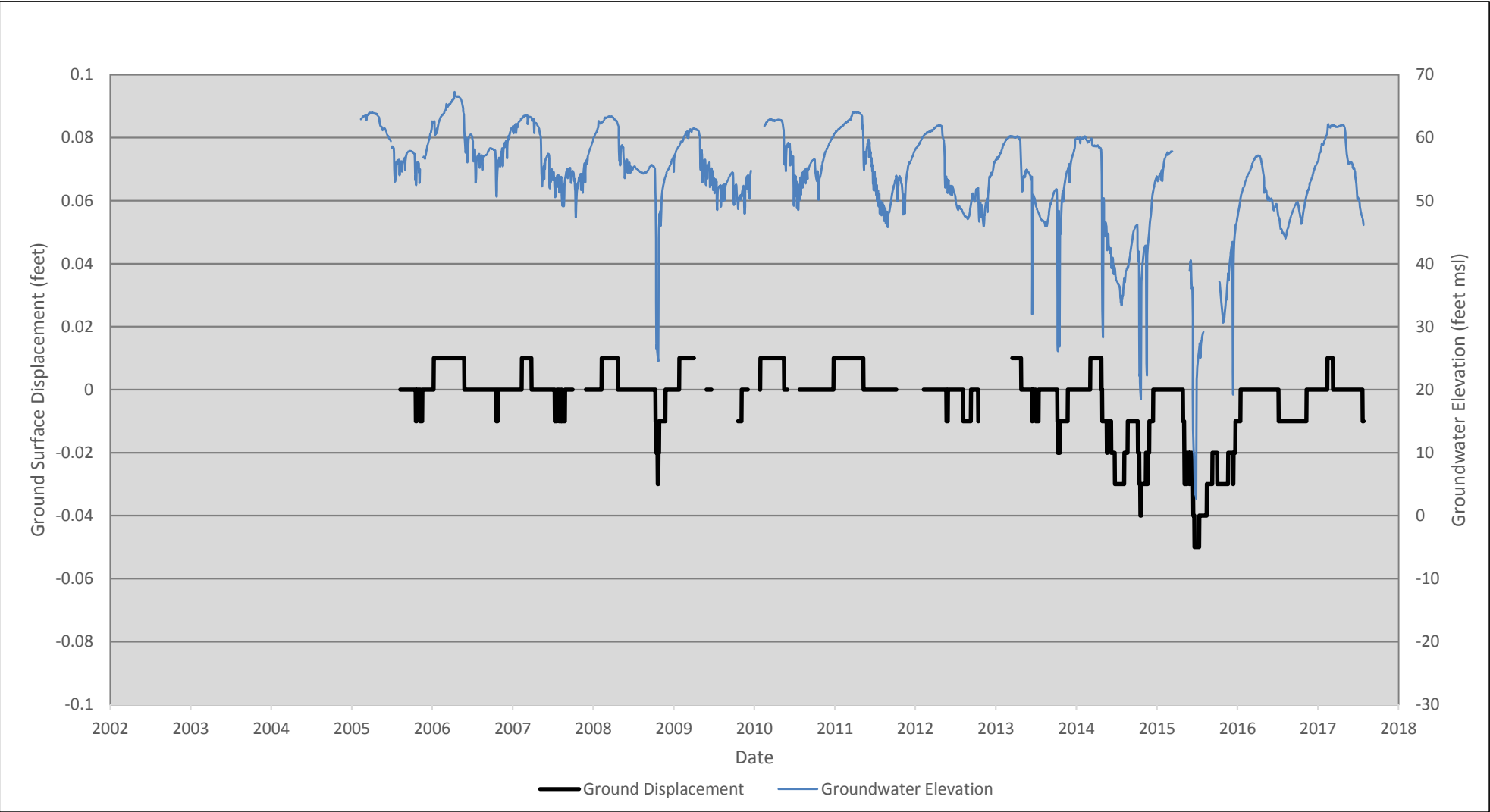


Figure B-3

**Land Subsidence from
Extensometer 17N02W09H002M**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



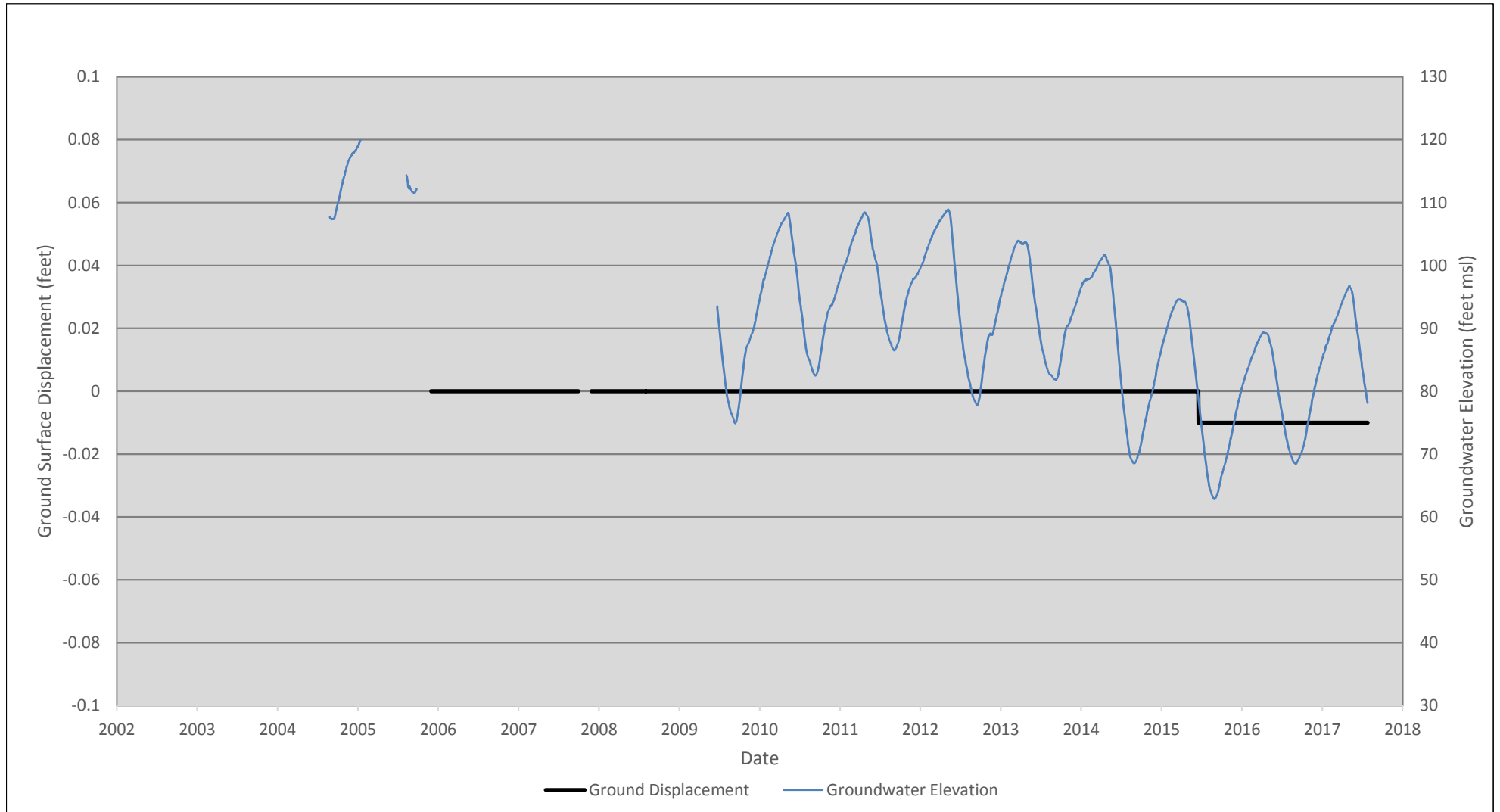


Figure B-4

**Land Subsidence from
Extensometer 19N02W08Q001M**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



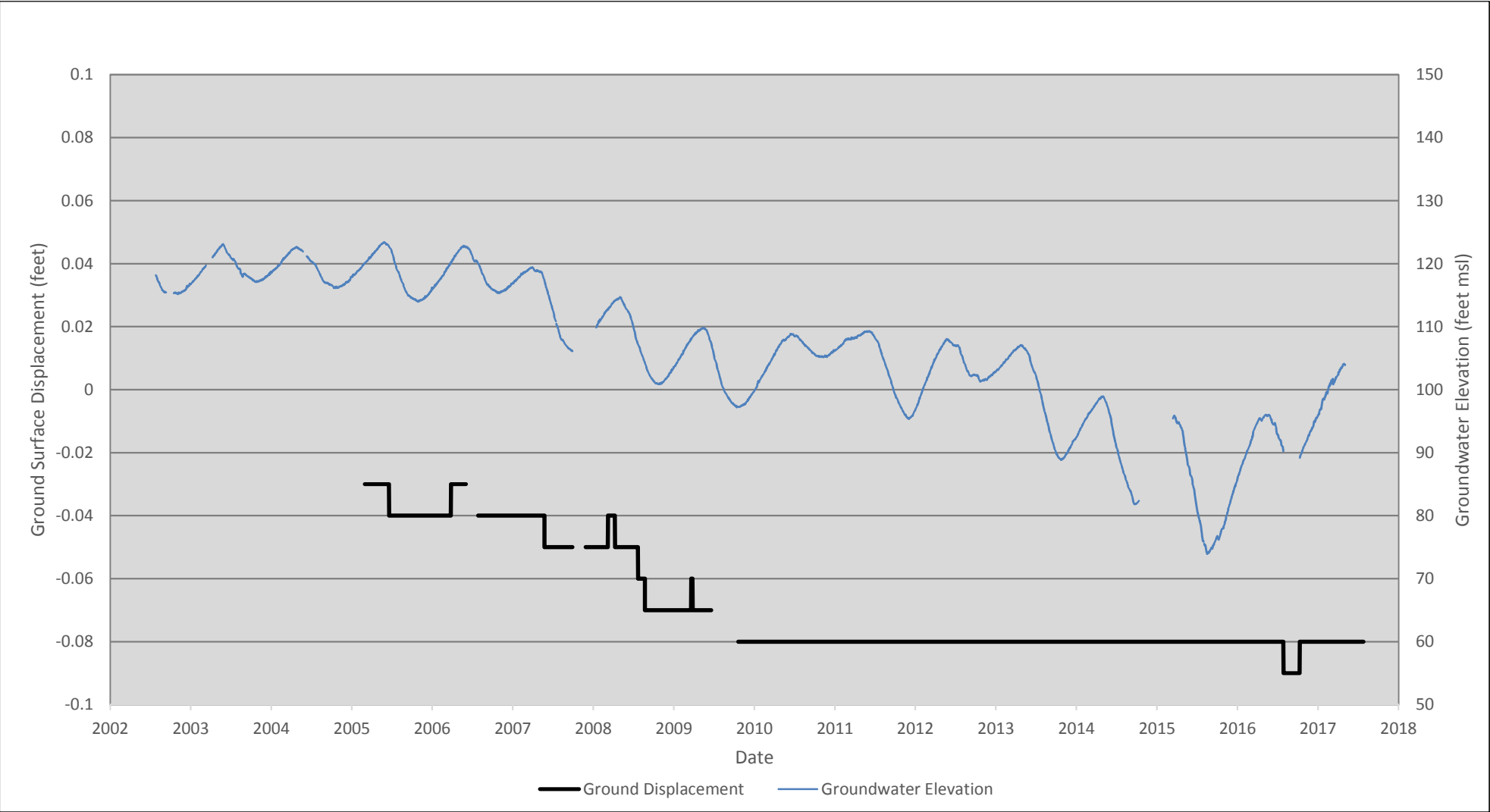


Figure B-5

**Land Subsidence from
Extensometer 21N02W33M001M**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



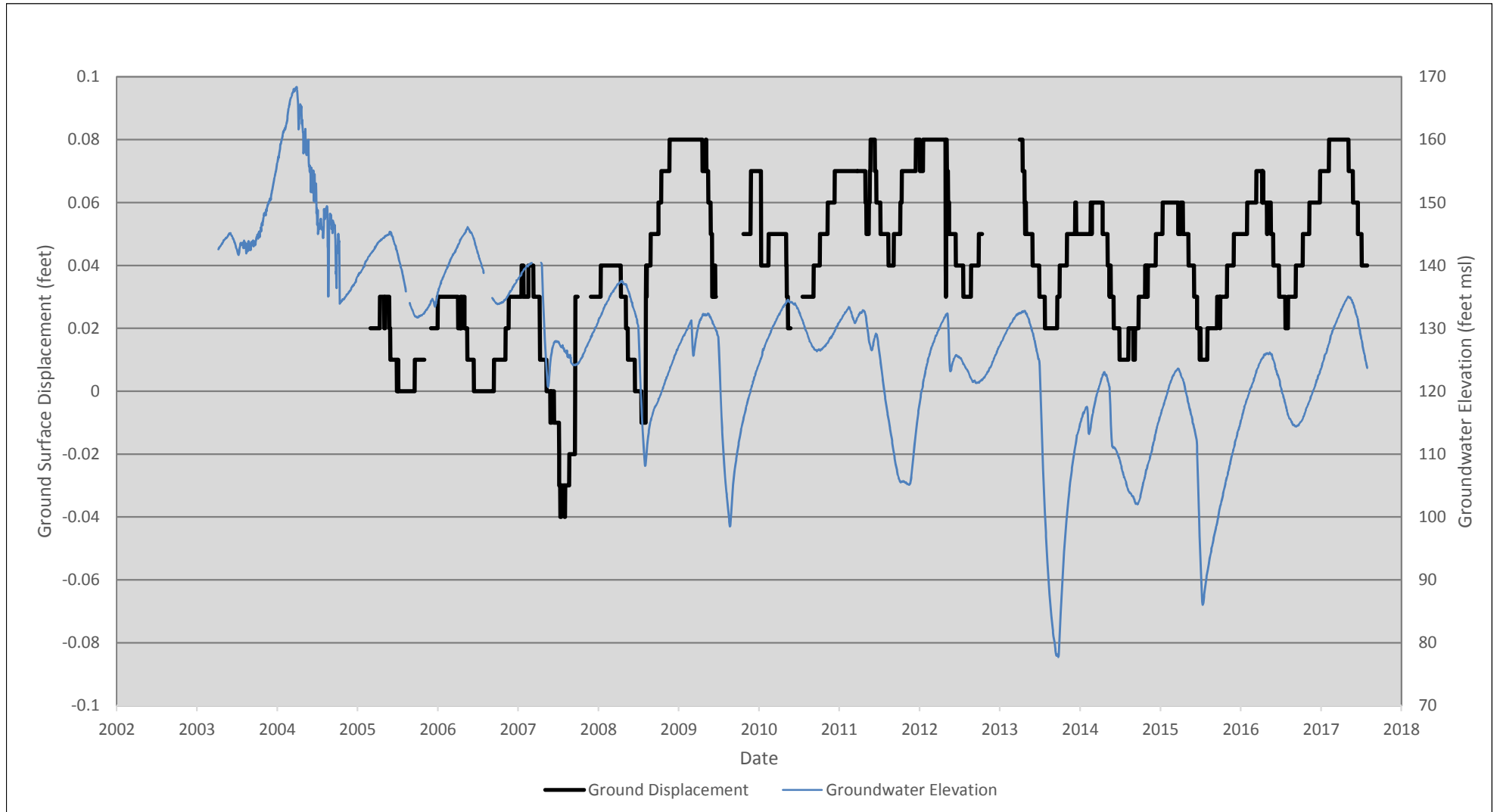


Figure B-6

**Land Subsidence from
Extensometer 22N02W15C002M**

Counties of Colusa and Glenn
Monitoring Network
Assessment Report



APPENDIX C

Emergency Regulation Reporting Standards

ARTICLE 3. Technical and Reporting Standards

§ 352. Introduction to Technical and Reporting Standards

This Article describes the monitoring protocols, standards for monitoring sites, and other technical elements related to the development or implementation of a Plan.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Section 10733.2, Water Code.

§ 352.2. Monitoring Protocols

Each Plan shall include monitoring protocols adopted by the Agency for data collection and management, as follows:

- (a) Monitoring protocols shall be developed according to best management practices.
- (b) The Agency may rely on monitoring protocols included as part of the best management practices developed by the Department, or may adopt similar monitoring protocols that will yield comparable data.
- (c) Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the Plan, and modified as necessary.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10727.2, 10728.2, 10729, and 10733.2, Water Code.

§ 352.4. Data and Reporting Standards

(a) The following reporting standards apply to all categories of information required of a Plan, unless otherwise indicated:

- (1) Water volumes shall be reported in acre-feet.
- (2) Surface water flow shall be reported in cubic feet per second and groundwater flow shall be reported in acre-feet per year.
- (3) Field measurements of elevations of groundwater, surface water, and land surface shall be measured and reported in feet to an accuracy of at least 0.1 feet relative to NAVD88, or another national standard that is convertible to NAVD88, and the method of measurement described.
- (4) Reference point elevations shall be measured and reported in feet to an accuracy of at least 0.5 feet, or the best available information, relative to NAVD88, or another national standard that is convertible to NAVD88, and the method of measurement described.
- (5) Geographic locations shall be reported in GPS coordinates by latitude and longitude in decimal degree to five decimal places, to a minimum accuracy of 30 feet, relative to NAD83, or another national standard that is convertible to NAD83.

(b) Monitoring sites shall include the following information:

- (1) A unique site identification number and narrative description of the site location.
- (2) A description of the type of monitoring, type of measurement taken, and monitoring frequency.
- (3) Location, elevation of the ground surface, and identification and description of the reference point.
- (4) A description of the standards used to install the monitoring site. Sites that do not conform to best management practices shall be identified and the nature of the divergence from best management practices described.

(c) The following standards apply to wells:

(1) Wells used to monitor groundwater conditions shall be constructed according to applicable construction standards, and shall provide the following information in both tabular and geodatabase-compatible shapefile form:

- (A) CASGEM well identification number. If a CASGEM well identification number has not been issued, appropriate well information shall be entered on forms made available by the Department, as described in Section 353.2.
- (B) Well location, elevation of the ground surface and reference point, including a description of the reference point.
- (C) A description of the well use, such as public supply, irrigation, domestic, monitoring, or other type of well, whether the well is active or inactive, and whether the well is a single, clustered, nested, or other type of well.
- (D) Casing perforations, borehole depth, and total well depth.
- (E) Well completion reports, if available, from which the names of private owners have been redacted.
- (F) Geophysical logs, well construction diagrams, or other relevant information, if available.
- (G) Identification of principal aquifers monitored.
- (H) Other relevant well construction information, such as well capacity, casing diameter, or casing modifications, as available.

(2) If an Agency relies on wells that lack casing perforations, borehole depth, or total well depth information to monitor groundwater conditions as part of a Plan, the Agency shall describe a schedule for acquiring monitoring wells with the necessary information, or demonstrate to the Department that such information is not necessary to understand and manage groundwater in the basin.

(3) Well information used to develop the basin setting shall be maintained in the Agency's data management system.

(d) Maps submitted to the Department shall meet the following requirements:

(1) Data layers, shapefiles, geodatabases, and other information provided with each map, shall be submitted electronically to the Department in accordance with the procedures described in Article 4.

(2) Maps shall be clearly labeled and contain a level of detail to ensure that the map is informative and useful.

(3) The datum shall be clearly identified on the maps or in an associated legend. (e)

Hydrographs submitted to the Department shall meet the following requirements:

(1) Hydrographs shall be submitted electronically to the Department in accordance with the procedures described in Article 4.

(2) Hydrographs shall include a unique site identification number and the ground surface elevation for each site.

(3) Hydrographs shall use the same datum and scaling to the greatest extent practical.

(f) Groundwater and surface water models used for a Plan shall meet the following standards:

(1) The model shall include publicly available supporting documentation.

(2) The model shall be based on field or laboratory measurements, or equivalent methods that justify the selected values, and calibrated against site-specific field data.

(3) Groundwater and surface water models developed in support of a Plan after the effective date of these regulations shall consist of public domain open-source software.

(g) The Department may request data input and output files used by the Agency, as necessary. The Department may independently evaluate the appropriateness of model results relied upon by the Agency, and use that evaluation in the Department's assessment of the Plan.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10727.2, 10727.6, and 10733.2, Water Code.

§ 352.6. Data Management System

Each Agency shall develop and maintain a data management system that is capable of storing and reporting information relevant to the development or implementation of the Plan and monitoring of the basin.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10727.2, 10728, 10728.2, and 10733.2, Water Code.

Table 1. Summary of GSP Data and Reporting Standards

Measurement Class	Data and Reporting Standard
Water Volume and Flow Measurements	
Water Volume	acre-feet
Surface Water Flow	cubic feet per second
Groundwater Flow	acre-feet per year
Field Elevation Measurements	
Groundwater Elevation	Measure and report to an accuracy of at least 0.1 feet relative to NAVD88, or another national standard convertible to NAVD88. Describe method of measurement.
Surface Water Elevation	
Land Surface Elevation	
Reference Point Elevations	Measure and report to an accuracy of at least 0.5 feet, or best available information, relative to NAVD88, or another national standard convertible to NAVD88. Describe method of measurement.
Geographic Locations	Report in GPS coordinates by latitude and longitude in decimal degree to five decimal places, to a minimum accuracy of 30 feet, relative to NAD83, or another national standard that is convertible to NAD83.
Monitoring Sites	Specify a unique site identification number and narrative description of the site location.
	Describe the type of monitoring, type of measurement taken, and monitoring frequency.
	Specify the location, elevation of the ground surface, and identification and description of the reference point.
	Describe the standards used to install the monitoring site. Sites that do not conform to best management practices shall be identified and the nature of the divergence from best management practices described.
Wells	Wells used to monitor groundwater conditions shall be constructed according to applicable construction standards, and shall provide the following information in both tabular and geodatabase-compatible shapefile form: -CASGEM well identification number. If a CASGEM well identification number has not been issued, appropriate well information shall be entered on forms made available by DWR, as described in Article 4, Procedures, of the Emergency Regulations. -Well location, elevation of the ground surface and reference point, including a description of the reference point. -A description of the well use, such as public supply, irrigation, domestic, monitoring, or other type of well, whether the well is active or inactive, and whether the well is a single, clustered, nested, or other type of well. -Casing perforations, borehole depth, and total well depth. -Well completion reports, if available, from which the names of private owners have been redacted. -Geophysical logs, well construction diagrams, or other relevant information, if available. -Identification of principal aquifers monitored. -Other relevant well construction information, such as well capacity, casing diameter, or casing modifications, as available.
	For wells that lack casing perforations, borehole depth, or total well depth information to monitor groundwater conditions as part of the GSP, the Agency shall describe a schedule for acquiring monitoring wells with the necessary information, or demonstrate to DWR that such information is not necessary to understand and manage groundwater in the basin.
	Well information used to develop the basin setting shall be maintained in the data management system.
Maps	Data layers, shapefiles, geodatabases, and other information provided with each map, shall be submitted electronically to DWR in accordance with Article 4, Procedures, of the Emergency Regulations.
	Maps shall be clearly labeled and contain a level of detail to ensure that the map is informative and useful.
	The datum shall be clearly identified on the maps or in an associated legend.
Hydrographs	Hydrographs shall be submitted electronically to DWR in accordance with the procedures described in Article 4, Procedures, of the Emergency Regulations.
	Hydrographs shall include a unique site identification number and the ground surface elevation for each site.
	Hydrographs shall use the same datum and scaling to the greatest extent practical.
Groundwater and Surface Water Models	The model shall include publicly available supporting documentation.
	The model shall be based on field or laboratory measurements, or equivalent methods that justify the selected values, and calibrated against site-specific field data.
	Groundwater and surface water models developed in support of the GSP after the effective date of the Emergency Regulations shall consist of public domain open-source software.
	DWR may request data input and output files used, as necessary. DWR may independently evaluate the appropriateness of model results and use that evaluation in the assessment of the GSP.
Data Management System	Develop and maintain a data management system that is capable of storing and reporting information relevant to the development or implementation of the GSP and monitoring of the basin.
Notes: <ol style="list-style-type: none"> 1. Reference: California Code of Regulations, Title 23, Division 2, Chapter 15, Subchapter 2, Groundwater Sustainability Plans, Article 4, Technical and Reporting Standards. 2. Monitoring protocols shall be developed according to best management practices. 3. The Agency may rely on monitoring protocols included as part of the best management practices developed by DWR, or may adopt similar monitoring protocols that will yield comparable data. 4. Monitoring protocols shall be reviewed at least every five years as part of the periodic evaluation of the GSP, and modified as necessary. 	

APPENDIX D

Well Completion Reports for Groundwater Monitoring Network Wells

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

SHEET 1 of 6
HOLE NO. LCB-4
ELEV. 25 (topo) FEET
DEPTH 1020 FEET

DRILL HOLE LOG

PROJECT Lower Colusa Basin Conjunctive Use DATE DRILLED 6/24-6/25/97
FEATURE Exploratory Boring ATTITUDE Vertical
LOCATION 12N/01E-06D* LOGGED BY F. Nasirian
CONTR. Eaton Drilling Co. DRILL RIG Ingersoll-Rand DEPTH TO WATER Not Determined
TH-400

* Near the south east corner of the intersection of County Line Road and the Colusa Basin Drain

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
0.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020'			
	CL				Drilled mostly with clear water, at times bentonite was added.
	GC	0.0-10.0' <u>Clay (CL)</u> : Brown, medium plasticity, moist.			
20.0		10.0-20.0' <u>Clayey Gravel (GC)</u> : Brown, about 5-10% clay, fine to medium, gravel wet.			The drill rods were 2-1/2" in diameter with a 4" collar at both ends.
	SP	20.0-40.0' <u>Sand (SP)</u> : Gray, less than 5% fines, fine to coarse grained sand.			
40.0		40.0-70.0' <u>Clay (CL)</u> : Brown, about 5-10% fine gravel, about 5-10% sand, moist			The collars would not allow any cuttings larger than 1/2 -3/4" size to come to the surface.
	CL				
60.0		70.0-245.0' <u>Clay (CH)</u> : Bluish-brown, high plasticity, moist.			Soils and geologic contacts were determined from logging the drill cuttings recovered from the shaker.
	CH				
80.0					
100.0					
120.0					
140.0		140.0-160.0' Clay with about 10-15% fine to coarse grained sand.			
160.0					

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

SHEET 2 OF 6
HOLE NO. LCB-4

PROJECT & FEATURE Lower Colusa Basin Conjunctive Use

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
160.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020.0' (cont'd)			
180.0	CH				
200.0		190.0-205.0' Bluish-gray, high plasticity. 205.0-230.0' Bluish-green, high plasticity.			
220.0	CH				
240.0		230.-240.0' About 10-15% sand and fine gravel.			
260.0	GP	245.0-280.0' <u>Gravel (GP)</u> : Gray, less than 5% fines, about 10-15% fine to coarse grained sand, mostly fine gravel.			
280.0		280.0-320.0' <u>Gravelly Clay g(CL)</u> : Grayish-brown, 15-20% sand, 20-25% fine to medium gravel.			
300.0	g(CL)	300.0-310.0' Reddish brown			
320.0	SP	320.0-330.0' <u>Sand (SP)</u> : Gray, fine to medium grained sand, about 5-10% fines. 330.0-355.0' <u>Gravel (GP)</u> : Gray, about 5-10% sand, fine to coarse grained gravel.			
340.0	GP/ GW				
360.0	SP	355.0-360.0' <u>Sand (SP)</u> : Gray, fine to medium grained.			

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

SHEET 3 OF 6

HOLE NO. LCB-4

PROJECT & FEATURE Lower Colusa Basin Conjunctive Use

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
360.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020.0' (cont'd)			
380.0	CH	360.0-395.0' <u>Clay (CH)</u> : Reddish-brown, high plasticity.			
					Added bentonite to the mud.
400.0		395.0-515.0' <u>Poorly Graded Gravel (GP)</u> : Gray, about 10-15% fine to coarse sand grained, up to ½" in diameter.			
	GP				
420.0					
440.0					
	GP				
460.0		460.0-480.0' <u>Clayey Gravel (GC)</u> : About 10-15% clay.			
	GC				
480.0		480.0-515.0' Mostly fine gravel.			
	GP				
500.0					
	GP				
520.0	ML	515.0-530.0' Silt with about 5-10% fine gravel.			
		530.0-720.0' <u>Clayey Gravel (GC)</u> : Gray, about 15-25% fines, mostly fine gravel.			
540.0	GC				
560.0					

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The Resources Agency
DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

SHEET 4 OF 6

HOLE NO. LCB-4

PROJECT & FEATURE Lower Colusa Basin Conjunctive Use

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
560.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020.0' (cont'd)			
580.0	GC				
600.0		600.0-620.0' Mostly fine to coarse grained sand.			
620.0	GC				
640.0					
660.0	GC/ CL	650.0-680.0' About 40-50% sand and gravel.			
680.0					
700.0	GC	700.0-720.0' About 10-15% fines, gravel up to 3/4" in diameter.			
720.0		720.0-1,000.0' <u>Sandy Clay s(CL)</u> : Gray about 15-25% fine to medium grain sand, less than 5% fine gravel.			
740.0	s(CL)				
760.0					

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The Resources Agency
DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

SHEET 5 OF 6

HOLE NO. LCB-4

PROJECT & FEATURE Lower Colusa Basin Conjunctive Use

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
760.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020.0' (cont'd)			
	s(CL)				
780.0					
	CL	780.0-800.0' Mostly lean clay less than 5% sand.			
800.0					
		810.0-820.0' About 25-30% sand, fine to medium grained.			
820.0					
	s(CL)				
840.0					
860.0		860.0-900.0' About 35-40% sand mostly fine to medium grained.			
880.0					
900.0	s(CL)	900.0-940.0' About 30-40% sand, mostly fine to medium grained.			
920.0					
940.0		940.0-960.0' Mostly clay with almost no sand.			
	CL				
960.0					

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DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

SHEET 6 OF 6

HOLE NO. LCB-4

PROJECT & FEATURE Lower Colusa Basin Conjunctive Use

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
960.0		<u>Holocene/Pleistocene Sediments</u> 0.0-1020.0' (cont'd)			
980.0	s(CL)	980.0-1020.0' Mostly clay with some sandy clay chips.			
1000.0					
1020.0		Hole bottomed @ 1020.0'			
1040.0					

Company:
 ATON DRILLING COMPANY
 Well #:

MR RECLAMATION LCB-4

Date: 06-25-1997

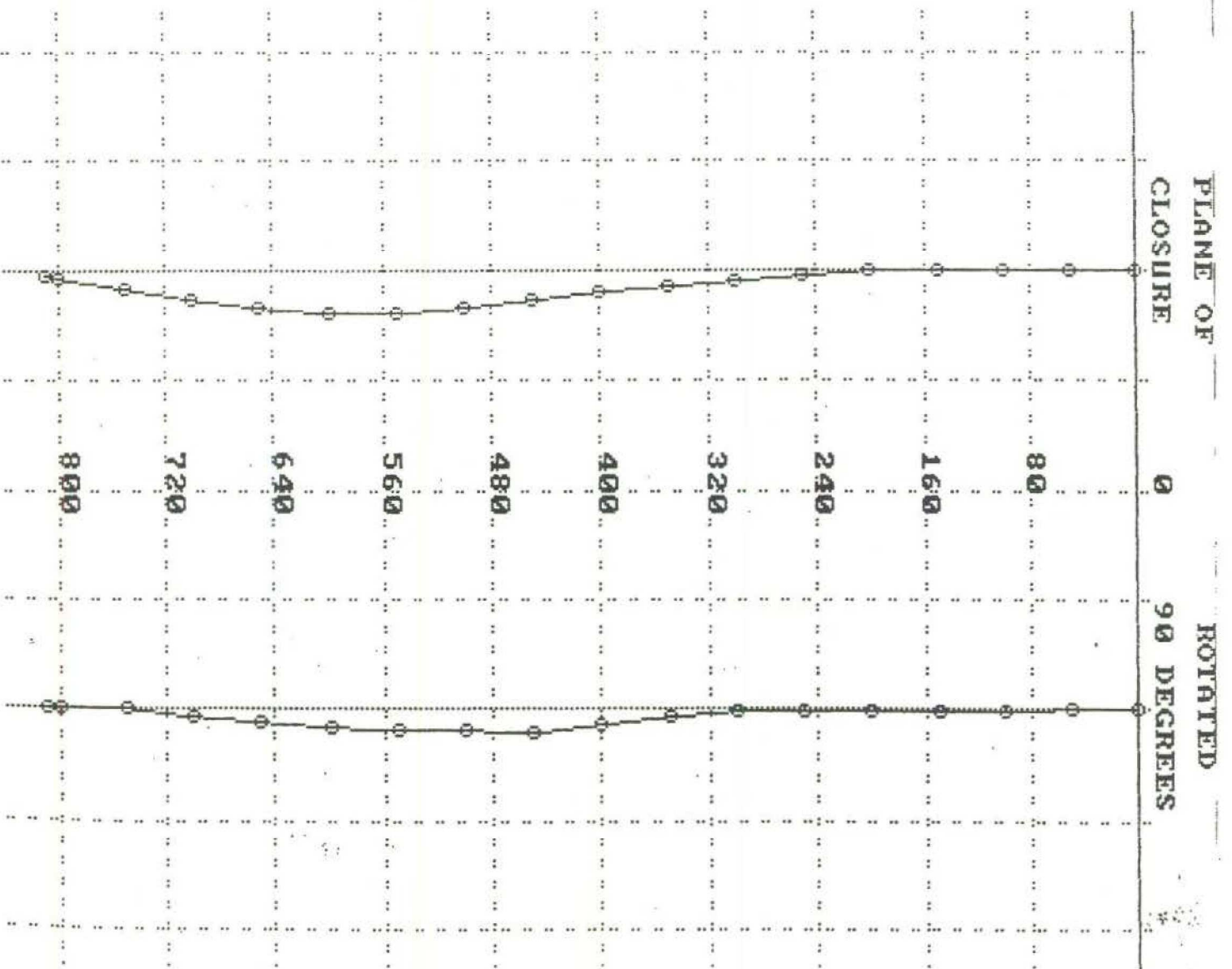
VERTICAL SECTION

Vertical Scale = 80 Ft/Div
Horizontal Scale = 8 Ft/Div

CLOSURE

Distance: 0.55 FEET
Bearing: 255.7 DEGREES
L.U.D.: 809.95 FEET

Calc. Method:



Company: EATON DRILLING COMPANY

PLAN VIEW

Well #: DWR RECLAMATION LCB-4

Date: 06-25-1997

Scale = 1.25 Feet per Division

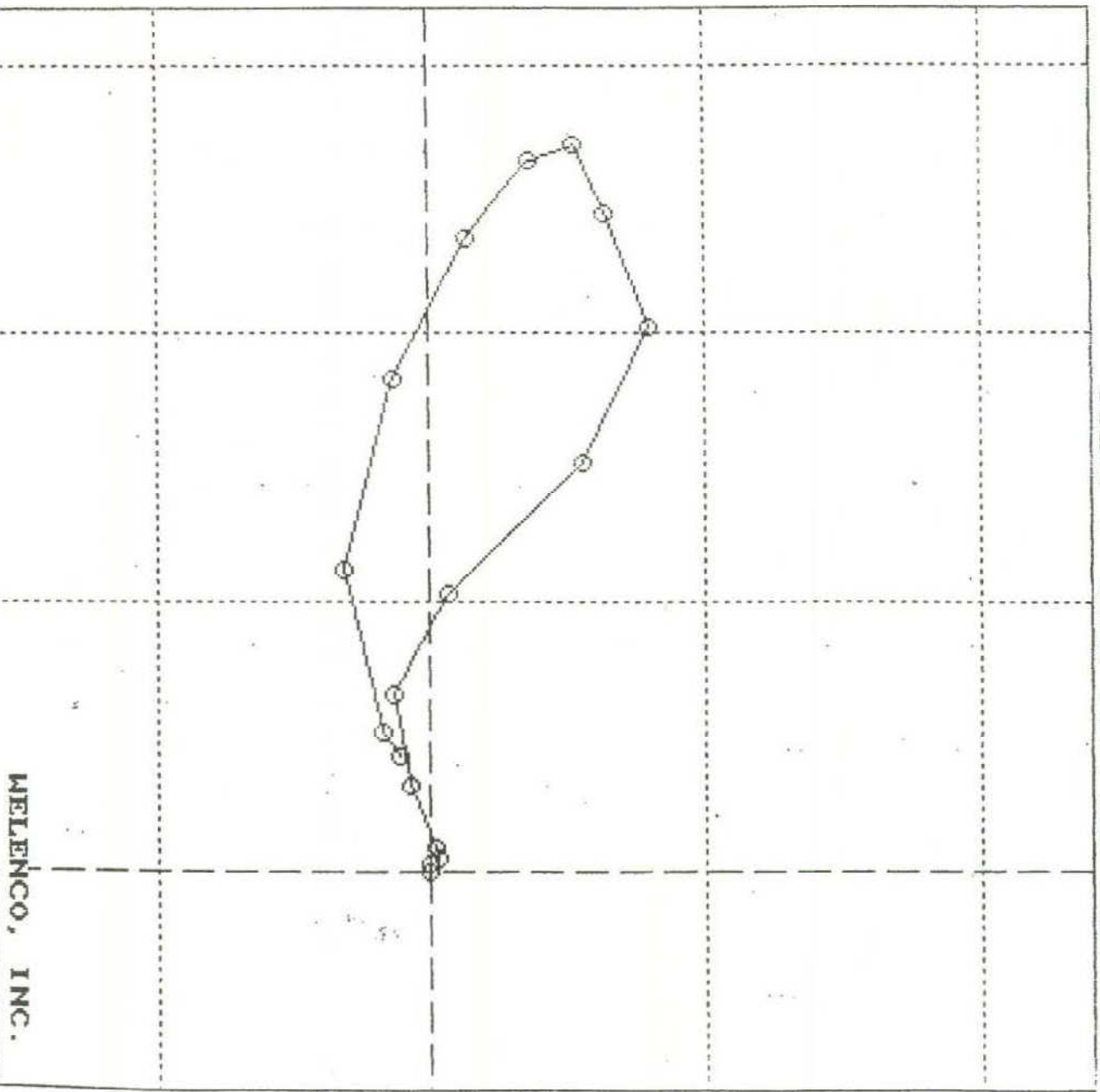
N
W+E
S

CLOSURE

Distance: 0.55 FEET

Bearing: 255.7 DEGREES

T.U.D.: 809.95 FEET



Calc. Method
Balanced Tangential

>>>> Welenco, Inc.>>>>
DIRECTIONAL SURVEY

Date: 06-25-1997

Company : EATON DRILLING COMPANY
Well No : DWR RECLAMATION LCB-4
Field : DUNNIGAN
State : CALIFORNIA County: YOLO
Witnessed By: SMITH Rec. By: ROBERTI
Location : COLUSA BASIN DRAIN & COUNTY LINE RD.
Remarks :

OTHER SERVICES: ELOG

Measured Depth, Feet	Incli- nation, Degrees	Direc- tion, Degrees True	Course Deviation, Feet	True Vertical Depth, Feet	Closure Distance, Feet	Closure Bearing, Degrees True
0	0.0	0	0.00	0.00	0.00	0.0
50	0.0	210	0.00	50.00	0.00	32.0
100	0.1	268	0.04	100.00	0.04	268.0
150	0.1	30	0.09	150.00	0.07	298.0
200	0.2	236	0.13	200.00	0.12	281.6
250	0.5	254	0.31	250.00	0.41	257.9
300	0.5	267	0.44	300.00	0.84	259.2
350	0.8	316	0.57	349.99	1.29	273.7
400	1.2	315	0.87	399.99	2.02	290.4
450	0.6	253	0.79	449.98	2.71	291.6
500	0.7	246	0.57	499.98	3.15	284.7
550	0.1	257	0.35	549.97	3.43	281.1
600	0.5	148	0.26	599.97	3.33	278.1
650	0.6	113	0.48	649.97	2.95	273.5
700	1.1	121	0.74	699.96	2.29	265.8
750	1.1	86	0.96	749.95	1.45	254.7
800	0.7	64	0.79	799.95	0.68	251.6
810	0.9	48	0.14	809.95	0.55	255.7

Equip.: L-16

Office: BFL

Job No.: 28403

Calculation Method: Balanced Tangential

15" Borehole

1-Inch Access Tube

2-Inch Black Pipe

150

Cement Sanitary Seal
(apx. 30 yds 10sk Cement)

240

275

285

295

Zone 1 Screened Interval

#8 Graded Sand Pack
(3 bags: apx. 4.5tons)

365

Intermediate Annular Seal
(2.0yds 10sk Cement)

414

485

495

505

Zone 2 Screened Interval

#8 Graded Sand Pack
(4.2bags: apx. 6.4tons)

622

Intermediate Annular Seal
(2yds 10sk Cement)

660

710

720

730

Zone 3 Screened Interval

#8 Graded Sand Pack
(3.76bags: apx. 5.6tons)

769

Base Annular Seal
(1yd 10sk Cement)

800

Bottom of Borehole

Figure 1 is a vertical diagram showing the distribution of 19 numbered points (1-19) along three vertical axes labeled ORANGE, GREEN, and GRAY. The ORANGE axis has a scale from 200 to 36.2. The GREEN axis has a scale from 1.5 to 1.5. The GRAY axis has a scale from 1.5 to 1.5. Points 1-19 are distributed along these axes, with some points having associated numerical values (e.g., 200, 205, 270, 36.2 for ORANGE; 1.5, 1.5, 1.5 for GREEN; 1.5, 1.5, 1.5 for GRAY).

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DRILL HOLE LOG

PROJECT Lower Colusa Basin Conjunctive Use Invest.
FEATURE Test Hole for Multi-Head Piezometer
LOCATION White Rd. @ Colusa Basin Drainage Canal
CONTRACTOR Eaton Drilling Company
DRILLER Dwayne
DRILL RIG Direct Rotary, Ingersoll-Rand TH-400

HOLE NUMBER LCB-1
DATE DRILLED 12/22 & 23/98
LOGGED BY Chuck Owens *CRO*
ATTITUDE Vertical
DEPTH TO WATER Unknown (~ 3 ft)
HOLE DEPTH 1,000 ft
ELEVATION -50 ft MSL

DEPTH	USCS	FIELD CLASSIFICATION AND DESCRIPTION	SY	REMARKS
0	CL	0-10 <u>GRAVELLY LEAN CLAY w/ SAND</u> : Gray; gravel (>15%) is fine (4 mm); sand >15%	3	<u>General:</u> <ul style="list-style-type: none"> Drill bit diameter = 6 1/4" Drill rods 22' long, 2 1/2" dia. with 4" collars at both ends, so clasts >1" prevented from reaching surface Mud rotary method, so all cuttings are saturated and moisture content not noted. Log is based on cuttings sampled from shaker about every 10', but sampling not consistent, plus lag-time error renders elevations of contacts inaccurate – more so with increasing depth. USBR 5005 Unified Soil Classification System used. <u>Logging Problem:</u> The rotary drilling method mixes cuttings from thin beds together in a mud slurry with any sluffed materials, and the origination depth of samples from the shaker is uncertain due to irregular collection, lag time and manner cuttings are brought to the surface. Thus, thin beds are often not identifiable, contacts are incorrect or uncertain, and soil classification is obstructed.
20	GC	10-20 <u>CLAYEY GRAVEL w/ SAND</u> : Brown; sand is coarse to fine ≥15%.	5	
	CL	20-30 <u>LEAN CLAY</u> : Brown	3	
40	CL	30-65 <u>GRAVELLY LEAN CLAY w/ SAND</u> : Brown; gravel is fine, angular to sub-angular quartz w/ a few clasts to 1 1/2" sub-rounded volcanics; sand is coarse (>15%) → Probably thin interbeds	3	
60				
80	GP	65-80 <u>POORLY-GRADED GRAVEL</u> : Gray; most gravel (~90%) is fine, but a few 1" clasts, all is sub-angular to sub-rounded quartz & volcanics → <u>Minor Aquifer</u> (70-80 best)	15	
100	GP-GC	80-120 <u>POORLY-GRADED GRAVEL w/CLAY</u> : Brown; gravel is fine, sub-rounded to sub-angular (>5%)	5	
120				
140	GC	120-150 <u>CLAYEY GRAVEL</u> : Brown → Many thin, silty interbeds?	5	
160				

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DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

Project & Feature: Lower Colusa Basin Conjunctive Use

Hole No. LCB-1

DEPTH	USCS	FIELD CLASSIFICATION and DESCRIPTION	SY	REMARKS
160	CL	150-260 <u>LEAN CLAY</u> : Brown;	3	
180		190-210: gray, but similar materials		
200		→ Numerous thin, clay/silty interbeds		
220				
240				
260	SP	260-290 <u>POORLY-GRADED SAND</u> : Brown; sand is coarse sub-angular to sub-rounded, mostly quartz; <5% clay/silt; <15% fine gravel	25	
280		→ <u>Producing Zone</u> (270-290 best)		
300	GP	290-310 <u>POORLY-GRADED GRAVEL w/ SAND</u> : Brown; sand is coarse (~40%); gravel is fine (~55%), all is sub-rounded to sub-angular	15	
320	CL/ SC	310-405 <u>LEAN CLAY w/ SAND & GRAVEL</u> : Brown; sand is coarse and gravel is fine (variable 5-30%), all is sub-rounded & sub-angular	5	
		→ Numerous interbeds		
340		320-355: 30% fine gravel		
		355-375: ~50% coarse sand		
360				

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DRILL HOLE LOG

Project & Feature: Lower Colusa Basin Conjunctive Use

Hole No. LCB-2



DEPTH	USCS	FIELD CLASSIFICATION and DESCRIPTION	SY	REMARKS
360		(continued)		
380	CL/ SC	375-405: ~15% fine gravel, sub-angular & sub-rounded		
400				
420	GW	405-425: <u>WELL-GRADED GRAVEL w/ SAND</u> : Brown; most gravel is fine, but all sizes up to 1/2"; sand is coarse ($\geq 15\%$ clay); <5% clay → <i>Good Producing Zone</i>	20	
440	SC	425-445: <u>SANDY CLAY</u> : Brown; sand is coarse (<5%); pebbles up to 1"	5	
460	SP	445-470: <u>POORLY-GRADED GRAVEL w/ SAND</u> : Brown; gravel is fine; sand is coarse; <10%. → <i>Good Producing Zone</i>	20	
480	CL	470-490: <u>SANDY LEAN CLAY</u> : Brown; sand is coarse, sub-angular & sub-rounded; ~5% subrounded pebbles	3	
500	SC	490-510: <u>CLAYEY SAND w/ GRAVEL</u> : Brown; ~50% / 50% clay and sand/gravel	5	
520	SP	510-525: <u>POORLY-GRADED SAND</u> : Brown; sand is coarse, sub-rounded to sub-angular; ~10-15% clay. → <i>Minor Aquifer</i>	20	
540	SC	525-555: <u>SANDY LEAN CLAY w/ GRAVEL</u> : Brown; sand is coarse (30-50%); 5-15% fine gravel → Several sandy/clayey interbeds	5	
560				

State of California
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DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

Project & Feature: Lower Colusa Basin Conjunctive Use

Hole No. LCB-1

Hole No. ECB-1				
DEPTH	USCS	FIELD CLASSIFICATION and DESCRIPTION	SY	REMARKS
560	CL	555-605: GRAVELLY LEAN CLAY w/ SAND: Gray; gravel is fine/pebble size; sand is coarse (~15%) → several coarse/fine interbeds	5	
580				
600				
620	SC	605-620: SANDY LEAN CLAY w/ GRAVEL: Gray → Poor/Minor Aquifer	10	
640	CL	620-720: LEAN CLAY – Gray; coarse sand & pebbles → several clayey/coarse interbeds 625-650: ~15-25% coarse sand 650-660: ~10% fine gravel, well-graded to ½"	3	
660				
680				
700				
720	SC	720-730: CLAYEY SAND: Gray-brown; Sand is coarse; <5% pebbles, all sub-angular and sub-rounded → Poor/Minor Aquifer	10	
740	CL	730-745: SANDY CLAY: Gray-brown; Sand is coarse; <5% pebbles, all sub-angular and sub-rounded	3	
	SC	745-755: CLAYEY SAND: Gray-brown; Sand is coarse; <5% pebbles, all sub-angular and sub-rounded → Poor/Minor Aquifer	10	
760				

State of California
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DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

Project & Feature: Lower Colusa Basin Conjunctive Use

Hole No. LCB-1

Project & Feature: Lower Conular Basin Conjunctive Use		Hole No. LCB-1		
DEPTH	USCS	FIELD CLASSIFICATION and DESCRIPTION	SY	REMARKS
760	CL	755-840: <u>SANDY LEAN CLAY</u> : Gray-brown; sand is coarse (~25%); <5% pebbles	3	
780		→ Numerous clayey/coarse interbeds		
800				
820				
840	SP	840-895: <u>POORLY-GRADED SAND</u> : Gray; sand is coarse sub-angular (<75%); >5% pebbles	25	
860		→ <u>Producing Zone</u>		
880		880-895: ~15% pebbles; 5% clay (w/ 75% coarse sand)		
900	SW	895-930: <u>WELL-GRADED SAND</u> : Gray; sand is mostly coarse (~75%); ~5% pebbles; ~5% clay; other is medium sand	25	
920		→ <u>Producing Zone</u>		
940	CL	930-945: <u>SANDY LEAN CLAY</u> : Gray-brown; sand is coarse (~25%); <5% pebbles	3	
960		945-960: <u>POORLY-GRADED SAND</u> : Gray; sand is coarse sub-angular (<75%); >5% pebbles → <u>Aquifer</u>	25	

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
DRILL HOLE LOG

Project & Feature: Lower Colusa Basin Conjunctive Use

Hole No. LCB-1

DEPTH	USCS	FIELD CLASSIFICATION and DESCRIPTION	SY	REMARKS
960	SC	960-1000 <u>CLAYEY SAND</u> : Gray-brown; sand is coarse, sub-angular (~75%); ~20% clay; ~5% pebbles	5	
980				
1000				
		T.D. = 1,000		

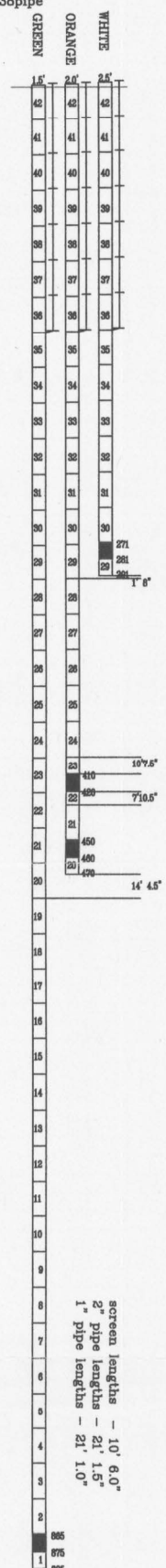
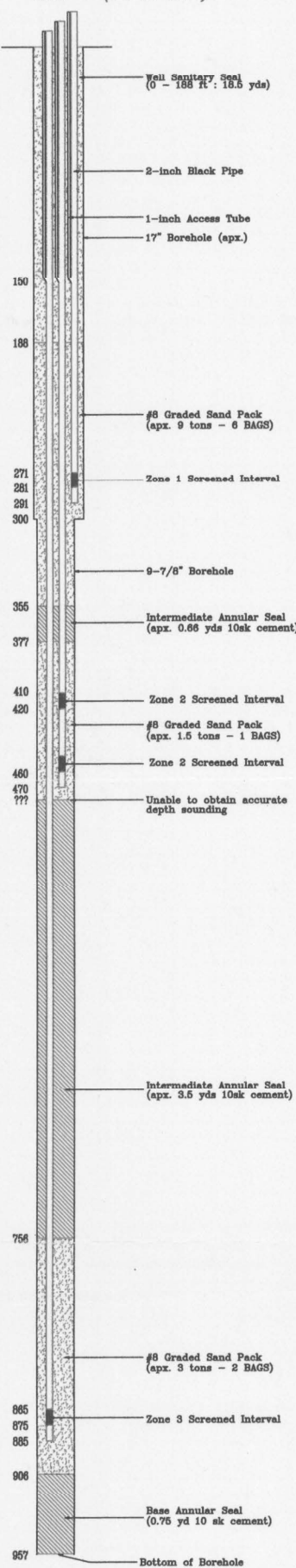
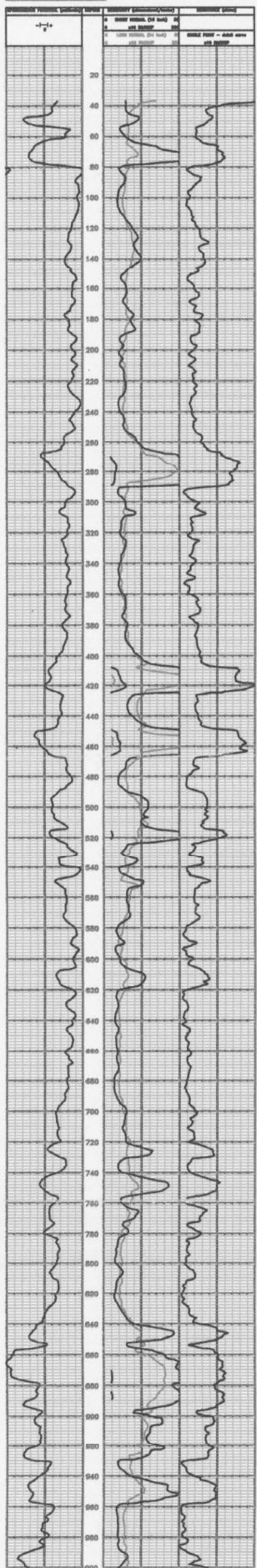
DIRECTIONAL SURVEY
Tabular Listing

Measured Depth	Incli- nation	Direc- tion	Course Deviation	T.V. Depth	Distance	Bearing
0	0.0	241	0.00	0.00	0.00	0.0
20	0.0	170	0.00	20.00	0.00	0.0
40	0.0	349	0.00	40.00	0.00	0.0
60	0.0	348	0.00	60.00	0.00	0.0
80	0.1	48	0.02	80.00	0.02	48.0
100	0.1	50	0.03	100.00	0.05	48.7
120	0.1	53	0.03	120.00	0.09	49.8
140	0.1	50	0.03	140.00	0.12	50.3
160	0.0	32	0.02	160.00	0.14	50.2
180	0.1	200	0.02	180.00	0.12	54.3
200	0.1	257	0.03	200.00	0.09	56.2
220	0.1	258	0.03	220.00	0.06	44.6
240	0.1	249	0.03	240.00	0.04	17.3
260	0.1	308	0.03	260.00	0.04	334.2
280	0.1	280	0.03	280.00	0.07	316.8
300	0.1	250	0.03	300.00	0.10	301.1
320	0.1	242	0.03	320.00	0.12	287.4
340	0.2	284	0.05	340.00	0.17	282.5
360	0.2	290	0.07	360.00	0.24	283.8
380	0.0	34	0.03	380.00	0.27	284.6
400	0.0	36	0.00	400.00	0.27	284.6
420	0.0	45	0.00	420.00	0.27	284.6
440	0.4	280	0.07	440.00	0.34	283.7
460	0.1	246	0.09	460.00	0.43	281.6
480	0.4	263	0.09	480.00	0.51	278.0
500	0.3	238	0.12	500.00	0.62	273.2
520	0.3	252	0.10	520.00	0.71	269.2
540	0.2	272	0.09	540.00	0.80	268.2
560	0.3	268	0.09	560.00	0.88	268.4
580	0.3	269	0.09	580.00	0.97	268.9
<hr/>						
600	0.2	223	0.07	600.00	1.03	267.9
620	0.1	230	0.05	620.00	1.07	266.0
640	0.2	200	0.05	640.00	1.10	263.8
660	0.2	193	0.07	660.00	1.12	260.5
680	0.3	204	0.09	680.00	1.17	256.8
700	0.4	196	0.12	700.00	1.24	252.1
720	0.4	179	0.14	720.00	1.30	246.6
740	0.3	170	0.12	740.00	1.35	241.7
760	0.2	173	0.09	760.00	1.38	238.3
780	0.6	178	0.14	779.99	1.45	233.4
800	0.5	180	0.19	799.99	1.57	227.7
820	0.7	155	0.21	819.99	1.68	221.5
840	0.7	158	0.24	839.99	1.79	214.4
860	0.5	135	0.21	859.99	1.89	208.7
880	0.6	140	0.19	879.99	1.96	203.4
900	0.3	138	0.16	899.99	2.03	199.4
920	0.9	125	0.21	919.99	2.11	194.0
940	1.0	133	0.33	939.98	2.27	186.4
960	0.8	107	0.31	959.98	2.41	179.8
980	0.7	120	0.26	979.98	2.53	174.4
998	1.5	126	0.35	997.98	2.76	168.9

Well Name: 7038 Mon.
Well No.: 7038 Mon.
Well Depth: 957 ft.
Well Type: 7038 Mon.

AS BUILT Well Profile LCB-1 (7038 Mon.)

LCB-1
7038 pipe



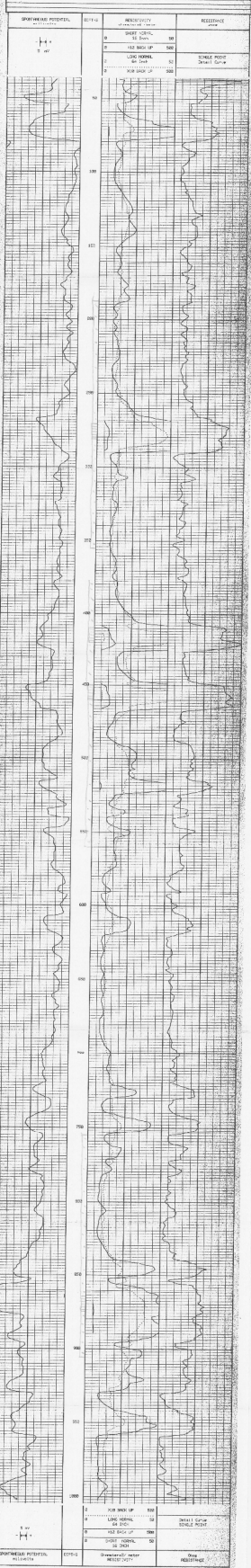
screen lengths - 10' 6.0"
2' pipe lengths - 21' 1.5"
1' pipe lengths - 21' 1.0"

WELANCO

WELANCO LOGGING COMPANY
 10000 W. 10th Ave., Suite 100
 Denver, CO 80202
 (303) 751-1000
 FAX (303) 751-1001
 WWW.WELANCO.COM

DATE: 10/10/2000
 TIME: 10:00
 WELL: 10-10-10
 LOG: 10-10-10

TIME	DEPTH	TEMP	PRESS	WELL	LOG
10:00	10	10	10	10	10
10:05	15	15	15	15	15
10:10	20	20	20	20	20
10:15	25	25	25	25	25
10:20	30	30	30	30	30
10:25	35	35	35	35	35
10:30	40	40	40	40	40
10:35	45	45	45	45	45
10:40	50	50	50	50	50
10:45	55	55	55	55	55
10:50	60	60	60	60	60
10:55	65	65	65	65	65
11:00	70	70	70	70	70
11:05	75	75	75	75	75
11:10	80	80	80	80	80
11:15	85	85	85	85	85
11:20	90	90	90	90	90
11:25	95	95	95	95	95
11:30	100	100	100	100	100
11:35	105	105	105	105	105
11:40	110	110	110	110	110
11:45	115	115	115	115	115
11:50	120	120	120	120	120
11:55	125	125	125	125	125
12:00	130	130	130	130	130
12:05	135	135	135	135	135
12:10	140	140	140	140	140
12:15	145	145	145	145	145
12:20	150	150	150	150	150
12:25	155	155	155	155	155
12:30	160	160	160	160	160
12:35	165	165	165	165	165
12:40	170	170	170	170	170
12:45	175	175	175	175	175
12:50	180	180	180	180	180
12:55	185	185	185	185	185
13:00	190	190	190	190	190
13:05	195	195	195	195	195
13:10	200	200	200	200	200
13:15	205	205	205	205	205
13:20	210	210	210	210	210
13:25	215	215	215	215	215
13:30	220	220	220	220	220
13:35	225	225	225	225	225
13:40	230	230	230	230	230
13:45	235	235	235	235	235
13:50	240	240	240	240	240
13:55	245	245	245	245	245
14:00	250	250	250	250	250
14:05	255	255	255	255	255
14:10	260	260	260	260	260
14:15	265	265	265	265	265
14:20	270	270	270	270	270
14:25	275	275	275	275	275
14:30	280	280	280	280	280
14:35	285	285	285	285	285
14:40	290	290	290	290	290
14:45	295	295	295	295	295
14:50	300	300	300	300	300
14:55	305	305	305	305	305
15:00	310	310	310	310	310
15:05	315	315	315	315	315
15:10	320	320	320	320	320
15:15	325	325	325	325	325
15:20	330	330	330	330	330
15:25	335	335	335	335	335
15:30	340	340	340	340	340
15:35	345	345	345	345	345
15:40	350	350	350	350	350
15:45	355	355	355	355	355
15:50	360	360	360	360	360
15:55	365	365	365	365	365
16:00	370	370	370	370	370
16:05	375	375	375	375	375
16:10	380	380	380	380	380
16:15	385	385	385	385	385
16:20	390	390	390	390	390
16:25	395	395	395	395	395
16:30	400	400	400	400	400
16:35	405	405	405	405	405
16:40	410	410	410	410	410
16:45	415	415	415	415	415
16:50	420	420	420	420	420
16:55	425	425	425	425	425
17:00	430	430	430	430	430
17:05	435	435	435	435	435
17:10	440	440	440	440	440
17:15	445	445	445	445	445
17:20	450	450	450	450	450
17:25	455	455	455	455	455
17:30	460	460	460	460	460
17:35	465	465	465	465	465
17:40	470	470	470	470	470
17:45	475	475	475	475	475
17:50	480	480	480	480	480
17:55	485	485	485	485	485
18:00	490	490	490	490	490
18:05	495	495	495	495	495
18:10	500	500	500	500	500
18:15	505	505	505	505	505
18:20	510	510	510	510	510
18:25	515	515	515	515	515
18:30	520	520	520	520	520
18:35	525	525	525	525	525
18:40	530	530	530	530	530
18:45	535	535	535	535	535
18:50	540	540	540	540	540
18:55	545	545	545	545	545
19:00	550	550	550	550	550
19:05	555	555	555	555	555
19:10	560	560	560	560	560
19:15	565	565	565	565	565
19:20	570	570	570	570	570
19:25	575	575	575	575	575
19:30	580	580	580	580	580
19:35	585	585	585	585	585
19:40	590	590	590	590	590
19:45	595	595	595	595	595
19:50	600	600	600	600	600
19:55	605	605	605	605	605
20:00	610	610	610	610	610
20:05	615	615	615	615	615
20:10	620	620	620	620	620
20:15	625	625	625	625	625
20:20	630	630	630	630	630
20:25	635	635	635	635	635
20:30	640	640	640	640	640
20:35	645	645	645	645	645
20:40	650	650	650	650	650
20:45	655	655	655	655	655
20:50	660	660	660	660	660
20:55	665	665	665	665	665
21:00	670	670	670	670	670
21:05	675	675	675	675	675
21:10	680	680	680	680	680
21:15	685	685	685	685	685
21:20	690	690	690	690	690
21:25	695	695	695	695	695
21:30	700	700	700	700	700
21:35	705	705	705	705	705
21:40	710	710	710	710	710
21:45	715	715	715	715	715
21:50	720	720	720	720	720
21:55	725	725	725	725	725
22:00	730	730	730	730	730
22:05	735	735	735	735	735
22:10	740	740	740	740	740
22:15	745	745	745	745	745
22:20	750	750	750	750	750
22:25	755	755	755	755	755
22:30	760	760	760	760	760
22:35	765	765	765	765	765
22:40	770	770	770	770	770
22:45	775	775	775	775	775
22:50	780	780	780	780	780
22:55	785	785	785	785	785
23:00	790	790	790	790	790
23:05	795	795	795	795	795
23:10	800	800	800	800	800
23:15	805	805	805	805	805
23:20	810	810	810	810	810
23:25	815	815	815	815	815
23:30	820	820	820	820	820
23:35	825	825	825	825	825
23:40	830	830	830	830	830
23:45	835	835	835	835	835
23:50	840	840	840	840	840
23:55	845	845	845	845	845
24:00	850	850	850	850	850



REGION 5
COUNTY Colusa
NEAR Arbuckle

log # 2738F
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Basin Sacramento Valley
DWR No. 13M/24-AG1 MD & M
OTHER NOS. _____

WELL LOG

LOCATION 2,587' W and 1,478' S of NE Corner Section 4

OWNER _____ ADDRESS _____

DRILLED BY USBR ADDRESS _____

DRILLING METHOD Rotary GRAVEL PACKED _____ DATE COMPLETED 6-3-53

SIZE OF CASING DEPTH 8" to 12', 4" to 470' STRUCK WATER AT _____

PERFORATIONS 350' to 470' SIZE _____ No. _____

WATER LEVEL BEFORE PERFORATING Piezometers set at 252' and 819' AFTER _____

TEST DATA: DISCHARGE G. P. M. Packers set at 110', 310', 505', & 730' DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

Electric log run

SURFACE ELEV. 183 DATUM MSL SOURCE OF INFORMATION USBR

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICK- NESS	SP. YIELD %
0-6.0	Cored	Silt, sandy to pebbly pebbles of quartz, chert, and Franciscan sandstone, ill-sorted, yellow-brown. Cored 0.0 to 3.1		
7.5	"	Silt, clayey, massive, yellow-brown		
10.5	"	Sand, silty, friable, yellow-brown		
12.3	"	Sand, very fine, silty, yellow-brown		
13.0	"	Clay		
19.0	"	Sand, very fine, silty, friable, yellow-brown		
20.6	"	Sand, fine pervious, well-sorted, yellow-brown		
24.0	"	Sand, medium to coarse, friable, ill-sorted, pebbles of quartz, chert, and Franciscan sandstone, yellow-brown.		
25.8	"	Silt, sandy, friable, slightly plastic, yellow-brown		
26.6	"	Clay		
30.5	"	Sand, medium to coarse, pervious, some pebbles, yellow-brown		
34.8	"	Silt, clayey, firm, yellow-brown		
39.9	"	Gravel, pebbly with sand and silt, yellow-brown		
40.9	"	Silt, clayey, some fine sand, yellow-brown		

LOG OBTAINED BY R. S. Ford DATE 6-15-64 SHEET 1 OF _____

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 2

NUMBER 15 2W-4G1

WELL LOG

LOCAL DESIGNATION

DEPTH	LOCATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
42.3	Cored	Sand, very fine, silty				
43.0	"	Sand, coarse to very coarse, ill-sorted, loose				
44.8	"	Silt, friable, slightly plastic				
46.2	"	Gravel, poorly pervious, friable, in clay-silt matrix, yellow-brown				
50.0	"	Sand, coarse to very coarse, pervious, friable, ill-sorted, some silt, some pebbles of Franciscan meta-sediments, quartz, chert, and Cretaceous sandstone (rare), yellow-brown				
53.1	"	Gravel, permeable, friable ill-sorted, sandy matrix, pebble count: 39% Franciscan sandstone, 4% Cretaceous sandstone, 39% chert (red and olive gray), 8% black chert, 7% vein quartz, 3% dark lithics				
55	No core	Gravel				
57	"	Clay and gravel				
60	"	Firm gravel				
65.5	"	Clayey silt with pebbles				
77.0	Cored	Sand, silty with pebbles, friable, ill-sorted, some lenses of pebble gravel				
87	No core	Silt, gravelly to sandy, ill-sorted				
102	"	Sand, silty with clay streaks				
118	"	Silt, clayey to sandy				
122	"	Gravel, pebbly, sandy silt matrix				
125	"	Silt, clayey				
126.1	Cored	Silt, clayey, slightly plastic, massive, yellow-brown				
127.5	"	Silt, pebbly, firm, some sand and pebbles				
133.0	"	Sand, fine to coarse with pebbles, fairly pervious, poorly friable, ill-sorted, pebbles of sandstone, chert and quartz				
143	No core	Sand with streaks of clay, yellow-brown				
150	"	Sand, fine, ill-sorted, with silt, thin streaks of clay and gravel				
155	"	Silt, clayey, yellow-brown				
157.4	Cored	Silt, clayey, pervious, slightly plastic, yellow-brown				
166.7	"	Sand, coarse, gravelly, pervious, friable, ill-sorted, yellow-brown				

FOR FIELD COPIES USE ALTERNATE LINES

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 3

NUMBER 13/24-491

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF TESTER	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
168.7	Cored	Silt, clayey, slightly plastic, yellow-brown				
172.6	"	Sand, coarse, gravelly, yellow-brown				
175.8	"	Silt, clayey to sandy, yellow-brown				
178.2	"	Sand, coarse, gravelly, yellow-brown				
181.0	"	Silt, clayey, yellow-brown				
181.6	"	Sand, coarse, gravelly, yellow-brown				
182.5	"	Clay, silty, firm, olive				
188.0	"	Sand, fine, gravelly, pervious, ill-sorted, brown				
198.0	"	Clay, silty, yellow-brown				
198.8	"	Clay, gravelly, olive				
203.0	"	Sand, gravelly, coarse, yellow-brown				
204.0	"	Clay, silty, sandy, plastic				
211.0	"	Sand, silty to gravelly, poorly pervious, yellow-brown				
215.5	"	Clay, silty to sandy, plastic, yellow-brown				
219.8	"	Gravel, sandy, pervious pebbles of sandstone, chert, quartz, yellow-brown				
242.4	"	Clay, silty, firm, some fine sand, olive to yellow-brown				
253.4	"	Gravel, sandy, moderately pervious, ill-sorted, deeply weathered, limonitic, yellow-brown				
255.0	"	Silt, sandy to pebbly, yellow-brown				
258.0	"	Gravel, sandy, limonitic, yellow-brown				
260.6	"	Sand, fine, pebbly, pervious, friable, yellow-brown				
264.0	"	Sand, medium, pebbly, pervious, friable, red-brown				
265.8	"	Sand, fine to coarse pervious, loose, olive-brown				
274.0	"	Silt, clayey, some fine sand, yellow-brown				
279.6	"	Sand, very fine, moderately pervious, friable, thin bedded, yellow-brown				
287.0	"	Clay, silty, plastic, with silt and sand, yellow-brown				
289.5	"	Silt, slightly plastic, yellow-brown				
291.0	"	Sand, very fine, yellow-brown				
298.5	"	Clay, silty, plastic, some calcareous nodules, yellow-brown				

Plotted and Coded

As Well 13N / 24-491

FOR FIELD COPIES USE ALTERNATE LINES

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 4

NUMBER 13/2W-4G1

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
299.9	Cored	Silt, friable, thin bedded, yellow-brown				
301.1	"	Sand, very fine, moderately pervious, olive-brown				
303.6	"	Silt, friable, clayey, yellow-brown				
311.0	"	Clay, silty, some fine sand, calcareous nodules, yellow-brown				
317.4	"	Silt, clayey, firm, olive-gray				
317.9	"	Sand, very fine, friable, well-sorted				
324.0	"	Silt, clayey, firm, olive-gray				
331.0	"	Clay, silty, some fine sand, olive-brown				
332.7	"	Silt, clayey, friable, olive-brown				
333.5	"	Clay, silty, olive-brown				
334.1	"	Sand, fine, pervious, friable, olive-brown				
335.6	"	Silt, clayey, olive-brown				
359.5	"	Sand, fine, highly pervious, friable, ill-sorted, olive-brown				
361.3	"	Clay, silty, brittle, calcareous zones, blue-green				
365.1	"	Sand, fine, silty, moderately pervious, ill-sorted, gray-green				
384.1	"	Clay, silty, plastic, calcareous streaks, blue-green				
394.3	"	Silt, sandy, brittle, olive-gray				
404.0	"	Sand, medium, silty, pervious, friable, loose, ill-sorted, yellow-brown				
422.0	"	Clay, silty, brittle, calcareous streaks, olive-green				
424.0	"	Silty, clayey, olive-green				
425.7	"	Clay, firm, massive, non-calcareous, pale olive				
432.0	"	Sand, fine, pervious, loose, well-sorted, olive-brown				
432.8	"	Clay, silty, firm calcareous, pale olive				
434.7	"	Silt, clayey, friable to plastic, manganese stains, white carbonate present, yellow-brown				
439.7	"	Silt, friable, massive, white carbonate nodules, yellow-brown				
445.5	"	Sand, fine pervious, friable, massive, limonite stains				
447.2	"	Gravel, with fine sand, pervious, ill-sorted, olive-brown				
450.9	"	Gravel, pervious, massive, ill-sorted, sand matrix, pebbles are 60% Franciscan sandstone, olive-brown				

FOR FIELD COPIES USE ALTERNATE LINES

Plotted and Coded
As Well 13N 12W 4G1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 5

NUMBER 13/2W-4G1

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRENGTH	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
455.0	Cored	Gravel, with medium sand matrix, pervious, loose, of sandstone, chert, and quartz, olive-gray				
463.3	"	Silt, clayey, firm, calcareous, manganese stains, yellow-brown				
466.6	"	Sand, silty, pervious, friable, olive-gray				
474.2	"	Clay, silty, non-plastic, calcareous, olive-gray to blue-green				
479.7	"	Silt, clayey, bedded, yellow-brown				
481.2	"	Sand, very fine, pervious, loose, well-sorted, yellow-brown				
488.0	"	Silt, clayey, yellow-brown				
493.7	"	Clay, silty, massive, olive-brown				
503.2	"	Sand, medium, pervious, loose, friable, thin-bedded, brown				
513.2	"	Clay, silty, massive, calcareous streaks, blue-green				
514.7	"	Sand, fine, silty, pervious, friable, olive-brown				
521.7	"	Clay, silty, massive, plastic, calcareous streaks, olive-brown				
522.7	"	Sand, very fine, pervious, friable, ill-sorted, olive-brown				
537.6	"	Clay, silty, massive, plastic, calcareous, olive to blue-green				
538.9	"	Sand, coarse, pervious, loose, ill-sorted, olive-gray				
543.3	"	Gravel, sandy, pervious, loose, ill-sorted, olive-gray				
543.3	"	Clay, silty, massive, calcareous, olive to blue-green				
565.6	"	Sand, fine, pervious, loose, well-sorted, olive-gray				
567.1	"	Clay, silty, firm, non-plastic, carbonate present, yellow-brown				
568.6	"	Silt, bedded, friable, yellow-brown				
572.0	"	Sand, fine, silty, pervious, friable, bedded, ill-sorted, yellow-brown				
574.8	"	Silt, massive, yellow-brown				
577.9	"	Sand, fine, friable, yellow-brown				
582.0	"	Silt, clayey to sandy, yellow-brown				
585.9	"	Clay, silty, massive, calcareous, some fine sand, yellow-brown				
587.2	"	Silt, clayey, bedded, calcareous, yellow-brown				
589.8	"	Sand, very fine, silty, pervious, friable, well-sorted, hard carbonate lens on base				

FOR FIELD COPIES USE ALTERNATE LINES

BN 13W 4G1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 6

NUMBER 13/2W-4G1

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
598.1	Cored	Silt, clayey, massive, yellow-brown				
602.5	"	Sand, very fine, silty, pervious, friable, olive-brown				
604.1	"	Silt, friable, calcareous, yellow-brown				
607.8	"	Clay, silty, firm, massive, yellow-brown				
609.9	"	Silty, sandy, massive, calcareous, yellow-brown				
614.0	"	Silt, clayey, massive, yellow-brown				
617.8	"	Clay, silty, massive, pale olive				
619.2	"	Sand, fine, silty, pervious, friable, ill-sorted, yellow-brown				
620.8	"	Clay, silty, massive, olive-gray				
626.2	"	Silt, clayey, massive, olive-brown				
628.8	"	Sand, fine, silty, pervious, friable, olive-gray				
629.9	"	Silt, clayey, olive-brown				
630.6	"	Sand, silty, olive-gray				
639.7	"	Clay, silty, olive-brown to blue-green				
642.0	"	Sand, fine, silty, olive-brown				
643.0	"	Silt, friable, calcareous, olive-brown				
649.3	"	Clay, silty, firm, olive-brown				
651.8	"	Sand, fine, clayey, fairly pervious, olive-brown				
678.9	"	Clay, silty, plastic to firm, olive-brown				
680.0	"	Silt, clayey, calcareous, olive-brown				
686.7	"	Clay, silty, plastic, calcareous, olive-brown				
688.0	"	Sand, fine, friable, stratified, ill-sorted, yellow-brown				
704.7	"	Sand, silt, and clay, olive-brown				
706.7	"	Clay, plastic, greenish-gray				
715.2	"	Clay, silty, plastic, carbonate nodules, yellow-brown				
724.1	"	Sand, very fine, silty, pervious, friable, well-sorted somewhat ashy, yellow-brown				
725.2	"	Sand, fine, silty, pervious, loose, dark yellow-brown				
726.8	"	Sand, very fine, clayey, thin-bedded, yellow-brown				

FOR FIELD COPIES USE ALTERNATE LINES

13W/2W-4G1

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

SHEET 7

NUMBER 13/2W-YG1

WELL LOG

LOCAL DESIGNATION

DEPTH	ELEVATION OF BOTTOM OF STRATUM	MATERIAL	THICKNESS FEET	% VOIDS	ABSOLUTE VOIDS FEET	TOTAL VOIDS FEET
731.5	Cored	Clay, silty, firm, gray-green				
735.7	"	Clay, silty, yellow-brown to gray-green				
745.5	"	Clay, silty to sandy, olive				
747.8	"	Sand, fine, silty, clayey, yellow-brown				
755.5	"	Clay, silty, calcareous, greenish-gray				
757.2	"	Clay, silty, massive, grayish-green				
738.0	"	Clay, silty, yellow-brown				
762.3	"	Sand, fine, silty, clayey, ill-sorted, brown to greenish-gray				
767.3	"	Clay, silty, brittle, yellow-brown				
772.2	"	Clay, silty, weathered, red-brown				
777.5	"	Silt, clayey, ill-sorted, calcareous, yellow-brown				
779.7	"	Clay, silty, firm, calcareous, manganese stains, yellow-brown				
781.2	"	Sand, silty to clayey, thin-bedded, yellow-brown				
787.5	"	Gravel, pervious, loose, pebbles to 1-inch, of sandstone, chert, metamorphics				
794.2	"	Clay, silty, firm, calcareous, olive to blue-green				
798.0	"	Silt, clayey, calcareous, greenish-gray				
805.9	"	Clay, silty, firm, plastic, olive-brown				
811.8	"	Clay, silty, firm, plastic, yellow-brown				
822.2	"	Sand, very fine, pervious, thin-bedded, ill-sorted, olive-brown				
830.5	"	Clay, silty, firm to brittle, thin-bedded, yellow-brown				
832.0	"	Sand, pervious, loose, ill-sorted, yellow-brown				
840.3	"	Gravel, sandy, pervious, loose				
841.8	"	Clay, silty, reddish-brown				
846.1	"	Clay, silty, bluish-gray				
849.5	"	Clay, silty, olive-brown				
852.0	"	Silt, sandy, calcareous, yellow-brown				
		T. D. at 852.0				

13N 2W 4G1

FOR FIELD COPIES USE ALTERNATE LINES

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

13N-20-2
13N/02W-12 Do Not Fill In
N^o 115408

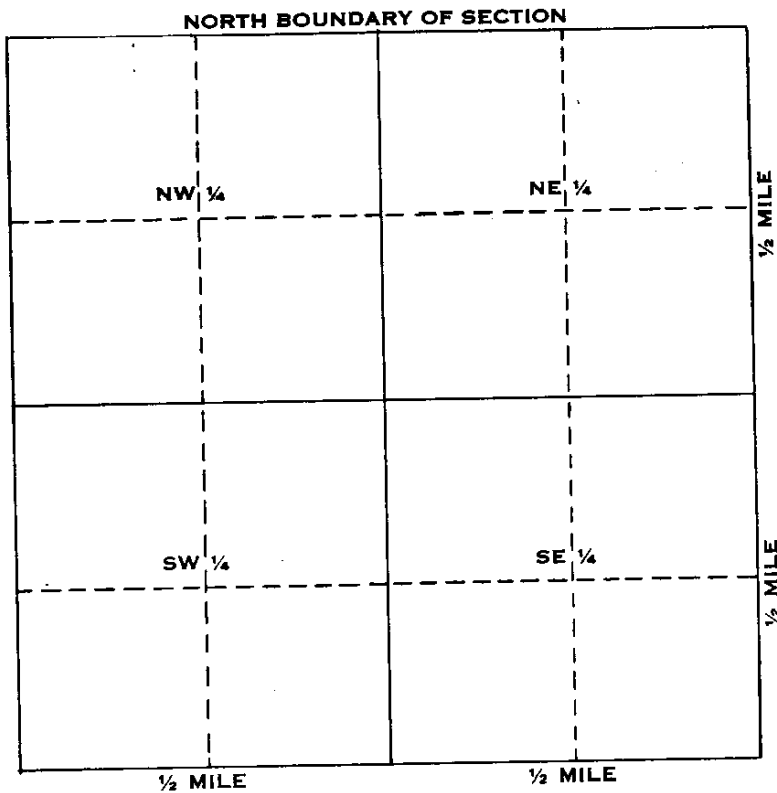
State Well No. _____
Other Well No. _____
CONFIDENTIAL LOG
Water Code Sec. 13752

(2) LOCATION OF WELL:				(11) WELL LOG:			
County <u>Colusa</u> Owner's number, if any _____				Total depth <u>778</u> ft. Depth of completed well _____ ft.			
Township, Range, and Section <u>T13-N, R-2W, Sec. 2</u>				Formation: Describe by color, character, size of material, and structure _____			
Distance from cities, roads, railroads, etc. _____				ft. to _____ ft.			
(3) TYPE OF WORK (check):				TEST HOLE ONLY			
New Well <input checked="" type="checkbox"/> Deepening <input type="checkbox"/> Reconditioning <input type="checkbox"/> Destroying <input type="checkbox"/>				0 - 6 Top soil			
If destruction, describe material and procedure in Item 11. _____				6 - 18 Gravel in clay			
(4) PROPOSED USE (check):				18 - 26 Loose gravel			
Domestic <input type="checkbox"/> Industrial <input type="checkbox"/> Municipal <input type="checkbox"/> Rotary <input checked="" type="checkbox"/>				26 - 34 Gravel in clay			
Irrigation <input checked="" type="checkbox"/> Test Well <input type="checkbox"/> Other <input type="checkbox"/> Cable <input type="checkbox"/>				34 - 45 Loose sand and gravel			
Other <input type="checkbox"/>				45 - 76 Gravel in clay			
(5) EQUIPMENT:				76 - 92 Loose sand and gravel			
Rotary <input checked="" type="checkbox"/>				92 - 182 Yellow clay			
Cable <input type="checkbox"/>				182 - 206 Loose sand and gravel			
Other <input type="checkbox"/>				206 - 252 Gravel and clay mixed			
(6) CASING INSTALLED:				252 - 264 Loose gravel and rocks			
STEEL: _____ OTHER: _____				264 - 376 Hard blue clay			
SINGLE <input type="checkbox"/> DOUBLE <input type="checkbox"/>				376 - 380 Cemented rock			
NONE If gravel packed				380 - 386 Loose sand and gravel			
From ft. To ft. Diam. Gage or Wall Diameter of Bore From ft. To ft.				386 - 418 Hard yellow clay			
				418 - 434 Layers, sand & blue clay			
				434 - 441 Hard blue clay			
				441 - 446 Sand and gravel			
				446 - 452 Blue clay			
Size of shoe or well ring: _____ Size of gravel: _____				452 - 464 Sand and gravel			
Describe joint _____				464 - 486 Soft yellow clay			
(7) PERFORATIONS OR SCREEN: NONE				486 - 504 Sand and gravel			
Type of perforation or name of screen _____				504 - 532 Hard yellow clay			
From ft. To ft. Perf. per row Rows per ft. Size in. x in.				532 - 536 Broken shale and clay			
				536 - 544 Hard blue clay			
				544 - 559 Sand, gravel & shale			
				559 - 615 Hard blue clay			
				615 - 631 Broken shale and sand			
				631 - 646 Hard yellow clay			
				646 - 658 Gravel and broken shale			
				658 - 726 Hard yellow clay			
(8) CONSTRUCTION: NONE				726 - 778 Broken shale and clay			
Was a surface sanitary seal provided? Yes <input type="checkbox"/> No <input type="checkbox"/> To what depth _____ ft.							
Were any strata sealed against pollution? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, note depth of strata _____							
from _____ ft. to _____ ft.				Work started <u>5-12-19 74</u> , Completed <u>5-28-19 74</u>			
from _____ ft. to _____ ft.				WELL DRILLER'S STATEMENT:			
Method of sealing _____				This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.			
(9) WATER LEVELS:				NAME <u>E. E. LUHDORFF CO., INC.</u>			
Depth at which water was first found, if known _____ ft.				(Person, firm, or corporation) (Typed or printed)			
Standing level before perforating, if known _____ ft.				Address <u>P. O. Box 1326</u>			
Standing level after perforating and developing _____ ft.				<u>Woodland, California 95695</u>			
(10) WELL TESTS:				[SIGNED] <u>[Signature]</u> (Well Driller)			
Was pump test made? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, by whom? _____				License No. <u>276625</u> Dated <u>7-16</u> , 19 <u>74</u>			
eld: _____ gal./min. with _____ ft. drawdown after _____ hrs.							
Temperature of water _____ Was a chemical analysis made? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>							
Was electric log made of well? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, attach copy _____							

SKETCH LOCATION OF WELL ON REVERSE SIDE

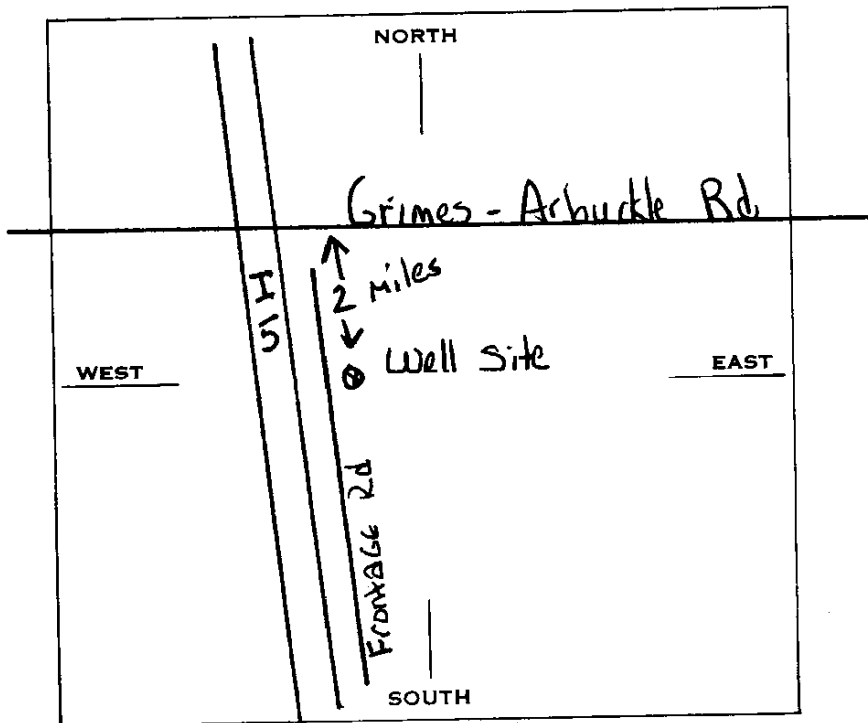
CONFIDENTIAL LOG
Water Code Sec. 13752
67139-750 8-72 30M TRIP DT OSP

WELL LOCATION SKETCH



Township 13 N N/S
 Range 2 W E/W
 Section No. 2

- A. Location of well in sectionized areas.
 Sketch roads, railroads, streams, or other features as necessary.



- B. Location of well in areas not sectionized.
 Sketch roads, railroads, streams, or other features as necessary.
 Indicate distances.

1974 JUL 11 PM 1 25

DEPT. OF WATER
 RESOURCES

ORIGINAL

File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTIONCONTROL BOARD No. 5

(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

N^o 77457

State Well No.

Other Well No. 2N/200-15

(2) LOCATION OF WELL:

County Colusa Owner's number, if any—

R. F. D. or Street No.

1/2 mile north & 1/8 mile west
of SE corner in Sec. 15 Twp 13 NR2W

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒Cable ☐Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐From 0 ft. to 362 ft. Diam. 8" Gage or Wall .188

If gravel packed

Diameter of Bore 18" from 0 ft. to 362 ft.

Type and size of shoe or well ring

Describe joint Butt weldedSize of gravel: Rerun pea gravel

(7) PERFORATIONS:

Type of perforator used Machine cut at factorySize of perforations 1/8 in., length, by 3 in.From 270 ft. to 362 ft. Perf. per row 3 Rows per ft. 3

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth 3 ft.Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strataFrom 0 ft. to 362 ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found 362 ft.Standing level before perforating 362 ft.Standing level after perforating 362 ft.

(10) WELL TESTS: m See over for test

Was a pump test made? ☒ Yes ☐ No If yes, by whom E.E. Luhdorff Co.Yield: 1 gal./min. with 1 ft. draw down after 1 hrs.Temperature of water 63 Was a chemical analysis made? ☐ Yes ☒ NoWas electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 362 ft. Depth of completed well 362 ft.

Formation: Describe by color, character, size of material, and structure.

0 ft. to	10 ft. to	10' to	Formation
0	10	10'	Yellow clay & rocks
10	18	8	Sand & rocks
18	110	92	Yellow clay and rocks
110	118	8	Rocks and gravel
118	181	63	Yellow clay & rocks
181	196	15	Rocks, sand & gravel
196	245	49	Yellow clay & silt
245	249	4	Sand & gravel
249	270	21	Yellow clay & silt
270	291	21	Loose sand & gravel
291	310	19	Blue clay
310	314	4	Loose sand & gravel
314	342	28	Blue clay
342	359	17	Loose rock, gravel
359	362	3	Blue clay

Work started Aug. 29 1963 Completed Sept. 9 1963

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME E. E. LUHDORFF

(Person, firm, or corporation)

(Typed or printed)

Address West Main St.Woodland, California

[SIGNED]

E. E. Luhdorff

Well Driller

License No. 123211Dated Sept. 23 1963

Results of test:

550 GPM @ 200' P.L.

370 196

190 191

100 188

4 minute return - 185'

George H. H. H.
 100' 100' 100' 100'
 100' 100' 100' 100'

100' 100'

100' 100' 100' 100'
 100' 100' 100' 100'

100' 100'

100' 100'

RECEIVED

RECEIVED
 100' 100'
 100' 100'
 100' 100'

ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 254895

Date Work Began 08/03/92 D.W.R. 08/04/92

Local Permit Agency Colusa County Health Dept.

Permit No. 0323

Permit Date

RECEIVED

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No.

423344

DWR USE ONLY - DO NOT FILL IN

13N02W20H

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG				WELL OWNER	
<p>ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)</p> <p>DEPTH TO FIRST WATER (Ft.) BELOW SURFACE</p> <p>DESCRIPTION</p> <p><i>Describe material, grain size, color, etc.</i></p>				<p>Address 1550 Ft. North of Marine Ave.</p> <p>City 750 Ft. West of Wyr Road</p> <p>County Colusa</p> <p>APN Book 21 Page 130 Parcel 92</p> <p>Township 13 N Range 2 W Section 20 H</p> <p>Latitude DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST</p>	
DEPTH FROM SURFACE	Ft.	to	Ft.	LOCATION SKETCH	
0	3			NORTH	
3	16			WEST	
16	30			1550 Ft.	
30	100			750 Ft.	
100	125			Wyr Rd.	
125	140			EAST	
140	185			Marine Ave.	
185	196			SOUTH	
196	210			Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc. PLEASE BE ACCURATE & COMPLETE.	
210	225			Drilling Method Rotary FLUID Mud	
225	240			WATER LEVEL & YIELD OF COMPLETED WELL	
240	252			DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED	
252	300			ESTIMATED YIELD* (GPM) & TEST TYPE	
300	315			TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)	
315	320			* May not be representative of a well's long-term yield.	
TOTAL DEPTH OF BORING 320 (Feet)					
TOTAL DEPTH OF COMPLETED WELL 320 (Feet)					

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING(S)					ANNULAR MATERIAL			
Ft.	to		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE	TYPE	FILTER PACK (TYPE/SIZE)	
			BLANK	SCREEN	CON- DUCTOR	FILL PIPE		Ft.	to	Ft.	
0	200	9"	XX				F-480	5"	1/4"		
200	260	9"		XX			F-480	5"	1/4"	.032	
260	300	9"	XX				F-480	5"	1/4"		
300	320	9"		XX			F-480	5"	1/4"	.032	

DEPTH FROM SURFACE		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
Ft.	to				
0	25	X			
25	340				Pea Gravel
					1 1/2" X 2"

AUG 26 1992

ATTACHMENTS (✓)		CERTIFICATION STATEMENT	
<input type="checkbox"/> Geologic Log	<input type="checkbox"/> Well Construction Diagram	I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.	
<input type="checkbox"/> Geophysical Log(s)	<input type="checkbox"/> Soil/Water Chemical Analyses	NAME Vaca Drilling Co./ Del Crew Jr. 190	
<input type="checkbox"/> Other		ADDRESS P. O. Box 759 Vacaville CA 95696	
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.		Signed Delbert Crew J. DATE SIGNED 8-10-92 532679	
		WELL DRILLER/AUTHORIZED REPRESENTATIVE C-57 LICENSE NUMBER	

ORIGINAL
File with DWR MAY 06 2010

Page 1 of 4

Owner's Well No. 8454

Date Work Began 3/29/2010, Ended 4/1/2010

Local Permit Agency Colusa County Health Dept

Permit No. 2010-018

Permit Date 3/17/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E0109311**

ABCD

DWR USE ONLY -- DO NOT FILL IN

14N/01E-35

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE
Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

0	5	Top soil
5	42	Brown clay with gravel streaks
42	70	Sand and gravel
70	210	Sand and gravel with brown clay streaks
210	230	Sand and gravel
230	980	Sandy blue clay
980	1000	Black sand with blue clay streaks
1000	1540	Sandy blue clay

TOTAL DEPTH OF BORING **1540** (Feet)
TOTAL DEPTH OF COMPLETED WELL **1015** (Feet)

WELL LOCATION
Address **225' W of Wilson Bend Rd & 840' S of**
City **Fruchtenicht CA**
County **COLUSA**
APN Book **022** Page **130** Parcel **057**
Township **14 N** Range **1 E** Section **35**
Latitude

DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		
Zone 1	1						
0	50	14	✓			PVC	2.5
50	60	14	✓			PVC	2.5
60	70	14	✓			PVC	2.5
Zone 2	2						
0	135	14	✓			PVC	2.5

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	30	✓		Sand Slurry
30	40	✓		Bentonite Seal
40	71		✓	SRI#8 Sand
71	84	✓		Bentonite Seal
84	113		✓	SRI#8 Sand
113	123	✓		Bentonite Seal

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed **Mark Darnon**

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

04/29/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 4

Owner's Well No. 8454

Date Work Began 3/29/2010, Ended 4/1/2010

Local Permit Agency Colusa County Health Dept

Permit No. 2010-018

Permit Date 3/17/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E0109311**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)	
DRILLING METHOD ROTARY FLUID MUD	
DEPTH FROM SURFACE	DESCRIPTION
Ft. to Ft.	Describe material, grain, size, color, etc.
0 to 5	Top soil
5 to 42	Brown clay with gravel streaks
42 to 70	Sand and gravel
70 to 210	Sand and gravel with brown clay streaks
210 to 230	Sand and gravel
230 to 980	Sandy blue clay
980 to 1000	Black sand with blue clay streaks
1000 to 1540	Sandy blue clay

Address **225' W of Wilson Bend Rd & 840' S of**

City **Fruchtenicht CA**

County **COLUSA**

APN Book **022** Page **130** Parcel **057**

Township **14 N** Range **1 E** Section **35**

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe

Procedures and Materials

Under "GEOLOGIC LOG"

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☐

WEST EAST
SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING **1540** (Feet)

TOTAL DEPTH OF COMPLETED WELL **1015** (Feet)

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)					SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	Ft.		to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)	
135	145	14	✓	PVC	2.5	SCH 80	.030	123	250			✓	SRI#8 Sand	
145	215	14	✓	PVC	2.5	SCH 80		250	275		✓		Bentonite Seal	
215	225	14	✓	PVC	2.5	SCH 80	.030	275	525			✓	SRI#8 Sand	
225	245	14	✓	PVC	2.5	SCH 80		525	529		✓		Bentonite Seal	
Zone	3							529	736			✓	SRI#8 Sand	
0	545	14/10	✓	PVC	2.5	SCH 80		736	747		✓		Bentonite Seal	

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed **Mark Dawson**

WELL DRILLER/AUTHORIZED REPRESENTATIVE

04/29/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 4

Owner's Well No. 8454

Date Work Began 3/29/2010, Ended 4/1/2010

Local Permit Agency Colusa County Health Dept

Permit No. 2010-018

Permit Date 3/17/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E0109311**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)		
DEPTH FROM SURFACE		
Ft.	to Ft.	
0	5	Top soil
5	42	Brown clay with gravel streaks
42	70	Sand and gravel
70	210	Sand and gravel with brown clay streaks
210	230	Sand and gravel
230	980	Sandy blue clay
980	1000	Black sand with blue clay streaks
1000	1540	Sandy blue clay

TOTAL DEPTH OF BORING 1540 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1015 (Feet)

Address 225' W of Wilson Bend Rd & 840' S of

City Fruchtenicht CA

County COLUSA

APN Book 022 Page 130 Parcel 057

Township 14 N Range 1 E Section 35

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☐

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL				
Ft.	to Ft.		TYPE (✓)							MATERIAL / GRADE	TYPE			
			BLANK	SCREEN	CON-DUCTOR	FILL PIPE					CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
545	555	10-3/4	✓				PVC	2.5	SCH 80	.030			✓	SRI#8 Sand
555	610	10-3/4	✓				PVC	2.5	SCH 80			✓		Bentonite Seal
610	620	10-3/4	✓				PVC	2.5	SCH 80	.030			✓	SRI#8 Sand
620	695	10-3/4	✓				PVC	2.5	SCH 80			✓		Bentonite Seal
695	705	10-3/4	✓				PVC	2.5	SCH 80	.030			✓	Native Fill
705	736	10-3/4	✓				PVC	2.5	SCH 80				✓	Sand Slurry

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

Mark Damion

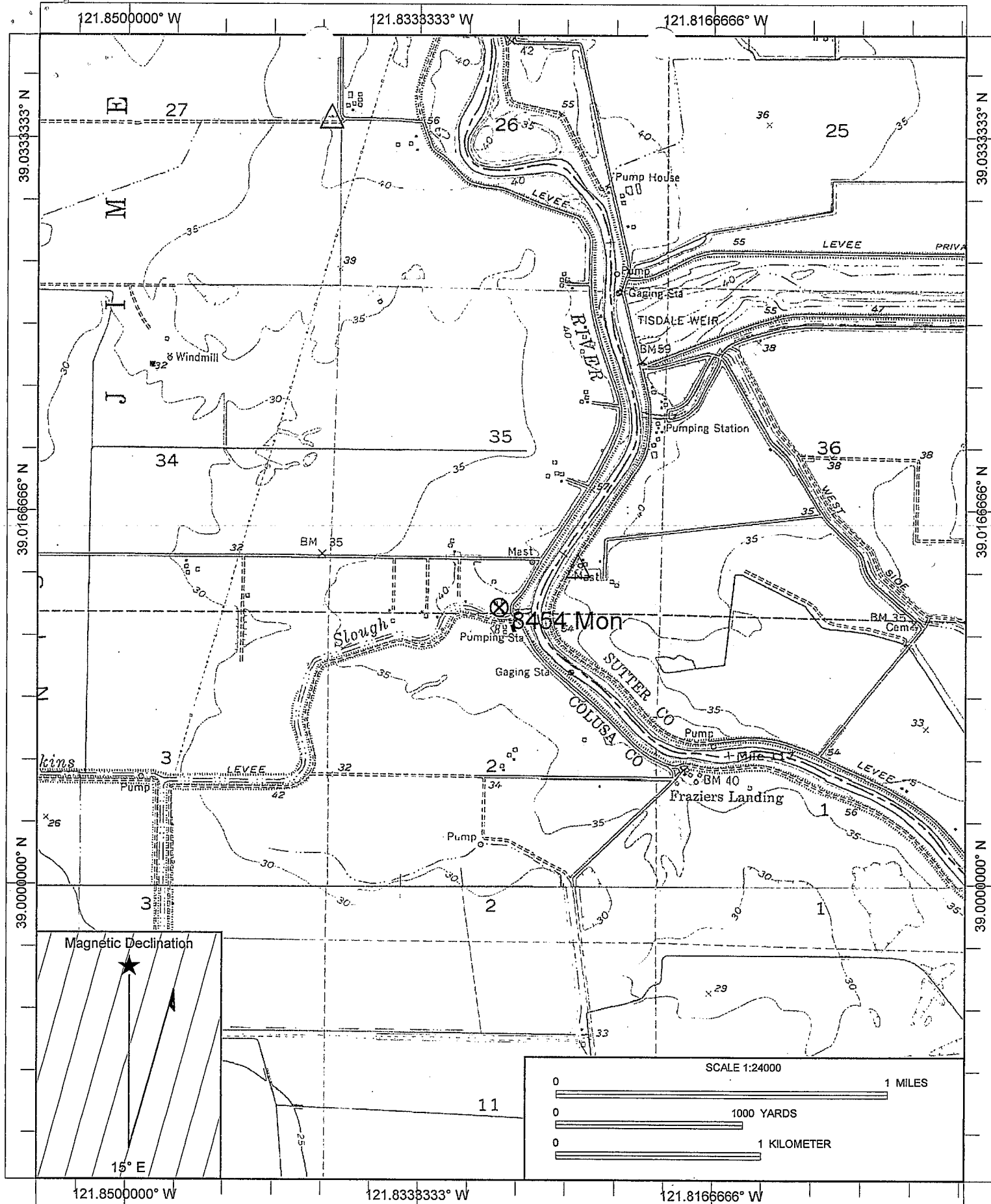
WELL DRILLER/AUTHORIZED REPRESENTATIVE

04/29/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER



Name: TISDALE WEIR
 Date: 3/16/2010
 Scale: 1 inch equals 2000 feet

Caption: DWR (RD 108) - Job# 8454 Mon
 APN: 022-130-057
 T14N R1E s35

Record by 1-2-61 Date 1-2-61

JUL 13 1966 State No. 14N/1W-4K3

WELL DATA

BRANCH NORTHERN

Owner ERNEST SACHREITER

State No. 14N/1W-4K3

Address _____

Other No. _____

Tenant _____

Address _____

Type of Well: Hydrograph ☐ Key ☐ Index ☐ Semiannual ☒

Location: County COLUSA

Basin COLUSA CO.

No. 5-21.04

U.S.G.S. Quad. GRIMES

Quad. No. 5-195C

NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 4

Twp. 14N

Rge. 1W

MD
SB
H

Base & Meridian

545C

Description 1.40 MI. W/O DRY SLOUGH RD. ON SACHREITER RD, THENCE
50' S/O E OF SACHREITER RD.

Reference Point description T.O.C. UNDER P.B., N. SIDE

which is @ ft. above land surface. Ground Elevation 35.0 ft.

Reference Point Elev. 35.0 ft. Determined from USGS QUAD

Well: Use IRRIG Condition _____ Depth 73 ft.

Casing, size 16 in., perforations 46' TO 70' See log attached

Measurements By: DWR ☒ USGS ☐ USBR ☐ County ☐ Irr. Dist. ☐ Water Dist. ☐ Cons. Dist. ☐

Chief Aquifer: Name _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Type of Material _____ Perm. Rating _____ Thickness _____

Gravel Packed? Yes ☐ No ☐ Depth to Top Gr. _____ Depth to Bot. Gr. _____

Supp. Aquifer _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Driller AULMAN

Date drilled 1942 Log, filed ☒ USBR log open (1) _____ confidential (2) _____

Equipment: Pump, type TURBINE make PEERLESS

Serial No. 131847 Size of discharge pipe 10 in. Water Analysis: Min. (1) _____ San. (2) _____ H.M. (3) _____

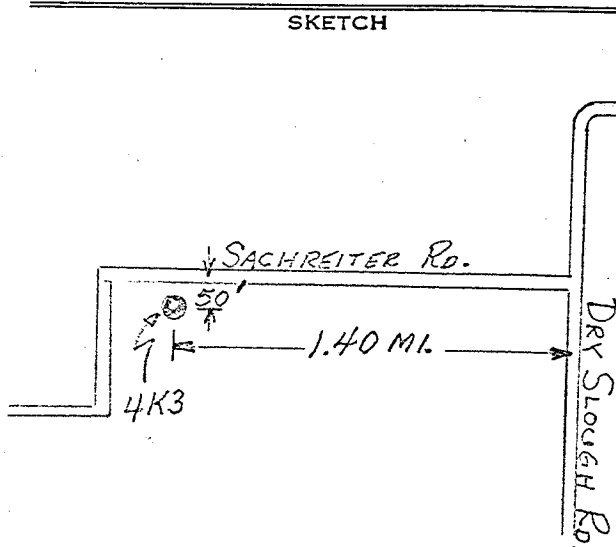
Power, Kind ELEC. Make G.E. Water Levels available: Yes (1) _____ No _____

H. P. 25 Motor Serial No. NHJ6918274 Period of Record: Begin _____ End _____

Elec. Meter No. 80233 Transformer No. _____ Collecting Agency: _____

Yield _____ G.P.M. Pumping level _____ ft. Prod. Rec. (1) _____ Pump Test (2) _____ Yield (3) _____

SKETCH



REMARKS

Recorded by: SH ADAMS FROM FIELD CR.

Date 4-3-67

USGS-CAL-T1
May 1948

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

No. 14/2W - 13N1
Other Nos. BR 14-2W-13

WELL LOG

State California County Colusa Subarea Arbuckle

Owner _____

Location 1380 ft. north and 375 ft. east of SW corner (USGS)

Drilled by Cooper & Son Address _____

Date Sept. 1947 Casing diam. 14" Land-surf. alt. 60'

Source of data XAX BR

(Enter type of well, perforations, yield, and drawdown at end of log)

Correlation	Material	Thick- ness (feet)	Depth (feet)
	Soil	5	5
	Clay, yellow	15	20
	Sand and fine gravel	3	23
	Clay, yellow	8	31
	Clay, sandy brittle	14	45
	Clay, yellow	77	122
	Clay, blue	10	132
	Gravel	35	167
	Clay, sandy yellow	137	297
	Gravel	22	319
	Clay, blue	7	325
	Gravel	12	338
	Clay, sandy yellow	19	357
	Gravel	28	385
	Clay, blue	7	392
	112' of 3/16" x 14" casing		
	260' of 3/16" x 12" casing		
	Perf. 104 - 392		
	Rotary type drill		
	Irrigation		
	Plotted and Coded		
	As Well <u>14N</u> <u>12W</u> <u>13N1</u>		

CONFIDENTIAL LOG
Water Code Sec. 3752

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION

CONTROL BOARD No. 5
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

No. 44455

State Well No.

Other Well No. 14N/2W-2951
Plotted and Coded

N
A
—

(2) LOCATION OF WELL:

County Colusa Owner's number, if any—

R. F. D. or Street No. N.E. corner of S.E. 1/4 of Sec. 29

T 14 N, R 2 W.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to ft. Diam. Gage or Wall

" 0 " 412 " 12 " 3/16 "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

Type and size of shoe or well ring

Describe joint Butt Welded

If gravel packed

Diameter of Bore from ft. to ft.

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

" " " " " " "

Size of gravel: 3/4x 1/2"

(7) PERFORATIONS:

Type of perforator used Machine cut at factory

Size of perforations 3/16 in., length, by 3 in.

From 119 ft. to 143 ft. Perf. per row Rows per ft.

" 176 " 182 " " " " " " " "

" 198 " 208 " " " " " " " "

" 215 " 239 " " " " " " " "

" 267 " 276 " " " " " " " "

" 307.5 319.5 " 338 to 412 " " " "

" 334.5 349.50 " " " " " " "

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

" " " "

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS: See back of page

Was a pump test made? ☒ Yes ☐ No If yes, by whom? E. E. Luhdorff

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

As Well 14N/2W-2951
Total depth ft. Depth of completed well 412 ft.

Formation: Describe by color, character, size of material, and structure.

0	ft. to	8	ft.	8'	Top soil	
8	"	21	"	13'	Dry gravel	
21	"	36	"	15'	Yellow clay	
36	"	58	"	22'	Dry gravel	
58	"	65	"	7'	Yellow clay	
65	"	74	"	9'	Loose gravel	
74	"	110	"	36'	Yellow clay	
110	"	115	"	5'	Loose gravel	
115	"	124	"	9'	Yellow clay	
124	"	138	"	14'	Rocks & gravel	
138	"	153	"	15'	Yellow clay	
153	"	156	"	3'	Loose gravel	
156	"	177	"	21'	Yellow clay	
177	"	181	"	4'	Loose gravel	
181	"	201	"	20'	Yellow clay	
201	"	204	"	3'	Rocks & gravel	
204	"	220	"	16'	Yellow clay	
220	"	222	"	2'	Rocks & gravel	
222	"	228	"	6'	Yellow clay	
228	"	238	"	10'	Rocks & gravel	
238	"	269	"	31'	Yellow clay	
269	"	274	"	5'	Rocks & gravel	
274	"	312	"	38'	Yellow clay	
312	"	318	"	6'	Rocks & gravel	Section 4076.1 C C N F I D E N T I A L Water Code
318	"	336	"	18'	Yellow clay	
336	"	339	"	3'	Rocks & gravel	
339	"	346	"	7'	Yellow clay	
346	"	348	"	2'	Loose gravel	
348	"	398	"	50'	Yellow clay	
398	"	409	"	11'	Rocks & gravel	
409	"	623	"	214'	Blue clay	
623	"	626	"	3'	Rocks & gravel	
626	"	640	"	14'	Blue clay	
640	"	649	"	9'	Loose gravel	
649	"	674	"	25'	Blue clay	
674	"	680	"	6'	Rocks & gravel	
680	"	852	"	172'	Blue clay	
852	"	857	"	5'	Rocks & gravel	
857	"	882	"	25'	Blue clay	
882	"	884	"	2'	Loose gravel	
884	"	916	"	32'	Blue clay	
916	"	920	"	4'	Rocks & gravel	
920	"	924	"	4'	Blue clay	
Work started	6-8	19	56.	Completed	6-22-56	19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME E. E. LUHDORFF

(Person, firm, or corporation)

(Typed or printed)

Address P. O. Box 326, West Main St.

Woodland, California

[SIGNED] E. E. Luhdorff
Well Driller

License No. 123211

Dated Oct. 22, 1953

#44455

Report No. 196

Owner

Pump No.

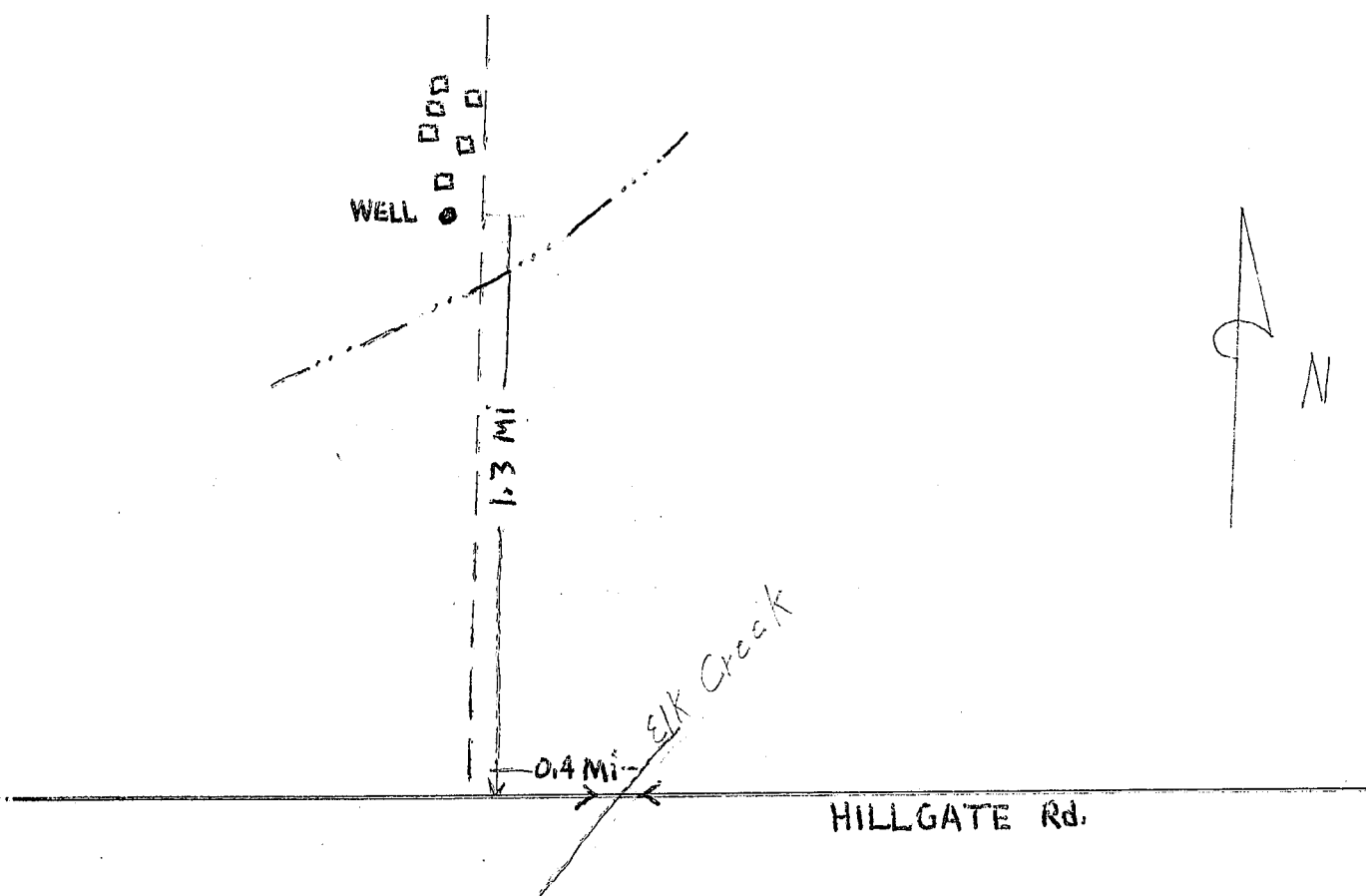
Meter No. 62656

Region 5; County COLUSA

Township 14N Range 2W, Section 29J1, B&M,

 ft. north, ft. west from southeast corner of Section.

SKETCH



DESCRIPTION OR REMARKS

Checked by E. E. Gaudin Date 7-21-58

#44455

Dr. No. H. CHART

Pump No. 6265

Meter No. 6265

Results of Well Test as follows:

Water Level 77'

Pumping level 200'

190'
180'
162'
151'

3 minute return 105'

O.P.M. 1125
1050
960
850
760

(1) TYPE OF WORK (Check one)
☐ New Well ☐ Deepening ☐ Relining
☐ Repairing ☐ Pumping
☐ Drilling ☐ Grouting
☐ Other

(2) PURPOSE (Check one)
☐ Domestic ☐ Industrial ☐ Municipal ☐ Irrigation
☐ Test Well ☐ Other

(3) CASING (Check one)
☐ Single ☐ Double
From No. 1 to No. 10
0 1 2 3 4 5 6 7 8 9 10
Feet

(4) PERFORATIONS (Check one)
☐ Machine ☐ Hand
Feet

(5) CONNECTIONS (Check one)
☐ Standard ☐ Special
Feet

(6) WATER INLET (Check one)
☐ Surface ☐ Subsurface
Feet

RECEIVED
OCT 19 1956
U.S. DEPT. OF AGRICULTURE
WASHINGTON, D.C.

ORIGINAL

File with DWR

STATE OF CALIFORNIA

THE RESOURCES AGENCY

DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

State Well No. _____

Other Well No. _____

No. 20032

Do not fill in

Notice of Intent No. _____

Local _____ it No. or Date _____

(1)

Ad: _____

Cit: _____

(2) LOCATION OF WELL (See instructions):

County Colusa Owner's Well Number W-3225

Well address if different from above _____

Township _____ Range _____

Distance from cities, roads, railroads, fences, etc. _____

Rd. - 1 mi. W 50' N

(3) TYPE OF WORK:

New Well ☒ Deepening ☐Reconstruction ☐Reconditioning ☐Horizontal Well ☐Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:

Domestic ☐Irrigation ☒Industrial ☐Test Well ☐Stock ☐Municipal ☐Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:

Rotary ☐Reverse ☒Cable ☐Air ☐Other ☐Bucket ☐

(6) GRAVEL PACK:

Yes ☒ No ☐Size pea grav.Diameter of bore 24"Packed from 0-704 ft.

(7) CASING INSTALLED:

Steel ☒Plastic ☐Concrete ☐

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Cage or Wall	From ft.	To ft.	Slot size
0-	685	16"	ODx.250	390-	480	
				500-	590	
				614-	685	

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.

Method of sealing _____

(10) WATER LEVELS:

Depth of first water, if known _____ ft.

Standing level after well completion _____ ft.

(11) WELL TESTS:

Was well test made? Yes ☐ No ☐ If yes, by whom? _____Type of test Pump ☐ Bailer ☐ Air lift ☐

Depth to water at start of test _____ ft. At end of test _____ ft.

Discharge _____ gal/min after _____ hours Water temperature _____

Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____Was _____ log made? Yes ☒ No ☐ If yes, attach copy to this report(12) WELL LOG: Total depth 704 ft. Depth of completed well 685 ft. from ft. to ft. Formation (Describe by color, character, size or material)

0-10 top soil

10-16 clay

16-26 gravel

26-28 clay

28-38 gravel

38-56 clay

56-64 gravel

64-68 clay

68-80 gravel

80-82 clay

82-98 gravel

98-102 clay

102-110 sand

110-124 sandy clay

124-156 clay

156-172 sand

172-182 clay

182-190 sandy clay

190-195 clay

195-203 sand

203-214 clay

214-220 sand

220-226 clay

226-242 sand

242-255 clay

255-275 sand

275-392 clay and sandy clay

392-398 sand

398-521 clay and sandy clay

521-536 gravel

536-548 clay

548-555 sand

555-564 clay

564-581 gravel 670-678 sand

581-624 clay 678-704 clay

624-636 gravel

636-645 clay

645-663 gravel

663-670 clay

Work started 19 Completed 7-18 1977

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED F. M. Eaton

(Well Driller)

NAME Eaton Drilling Co., Inc.

(Person, firm, or corporation) (Typed or printed)

Address 20 Kentucky (P. O. Box 975)City Woodland, CaliforniaZip 95695License No. 133783057Date of this report 7-18-1977

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 072290

Notice of Intent No. _____

Local Permit No. or Date _____

State Well No. _____
Other Well No. _____CONFIDENTIAL LOG
13752

(2) LOCATION OF WELL (See instructions):
County Colusa Owner's Well Number W-3649

Well address if different from above _____
Township 14N Range 3W Section Sec. 24

Distance from cities, roads, railroads, fences, etc. Hahn-Cortina School Bldg. 400' W 100' S

(12) WELL LOG: Total depth 320 ft. Depth of completed well 312 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0- 4 top soil
4- 20 gravel
20- 34 clay
34- 80 sand and gravel
80-204 stratas of clay
stratas of gravel
204-214 gravel
214-266 clay and sandy clay
266-274 gravel
274-284 sandy clay
284-288 sand
288-294 clay
294-310 gravel
310-320 clay and sandy clay

(3) TYPE OF WORK:

New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐

Destruction ☐ (Describe destruction materials and procedures in Item 15)

(4) PROPOSED USE:

Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Stock ☐
Municipal ☐
Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:

Rotary ☐ Reverse ☒ Yes ☒ No ☐ Size 16" Dia. gra.
Cable ☐ Air ☐ Diameter of bore 16"
Other ☐ Bucket ☐ Racked from 0 to 312 ft.

(7) CASING INSTALLED:

Steel ☒ Plastic ☐ Concrete ☐ Type of perforation or size of screen
From ft. To ft. Dia. in. Casing or Wall From ft. To ft. Slot size
0 312 8 5/8 OD 292-312 8 rows
x 188 x 125 mesh

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☐ No ☐ If yes, to depth _____ ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.
Method of sealing _____

(10) WATER LEVELS:

Depth of first water, if known _____ ft.
Standing level after well completion _____ ft.

(11) WELL TESTS:

Was well test made? Yes ☐ No ☐ If yes, by whom? _____
Type of test Pump ☐ Bailor ☐ Air lift ☐
Dep. water at start of test _____ ft. At end of test _____ ft.
Disch. _____ gal/min after _____ hours Water temperature _____
Chemical analysis made? Yes ☐ No ☐ If yes, by whom? _____
Was electric log made? Yes ☒ No ☐ If yes, attach copy to this report

Work started _____ 19 _____ Completed 4-10-81 19 _____

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

SIGNED _____

(Well Driller)

NAME Eaton Drilling Co. Inc.

(Person, firm, or corporation) (Typed or printed)

Address P. O. Box 975 (20 W. Kentucky)City Woodland, California Zip 95695License No. 133783C57 Date of this report 4-21, 1981

ORIGINAL
File with DWR

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

(Misc)
Do Not Fill In

CONFIDENTIAL LOG

Water Code Sec. 13752

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

CONFIDENTIAL
Water Code Sec. 13752

No. 12982

State Well No. 15N/1W-56
Other Well No. 12982

(1) OWNER:

Name Colusa County Airport

Address Colusa Calif.

(2) LOCATION OF WELL:

County Colusa Owner's number, if any

Township, Range, and Section

Distance from cities, roads, railroads, etc.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐

Cable ☒

Other ☐

(6) CASING INSTALLED:

STEEL:

OTHER:

SINGLE ☒ DOUBLE ☐

If gravel packed

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	75	8"	BPA			

Size of shoe or well ring: 24x18" Size of gravel:

Describe joint: B/W

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth ft.

Were any strata sealed against pollution? Yes ☐ No ☐ If yes, note depth of strata

From 0 ft. to 75 ft.

From ft. to ft.

Method of sealing Clay

(9) WATER LEVELS:

Depth at which water was first found, if known 20 ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing 20 ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☒ If yes, by whom?

Id: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☒

Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:

Total depth 140 ft. Depth of completed well 140 ft.

Formation: Describe by color, character, size of material, and structure

0 ft. to 10 top Soil ft.
10 30 Sandy mud
30 30 Clay
30 50 Gravel & sand
50 55 yellow clay
55 72 sand & gravel
72 135 Blue clay
135 140 Black sand

This Well is located at
the Airport in Colusa.

Plotted and Coded

As Well 15N/1W-5680

Work started 8/19 1971, Completed 8/20 1971

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Bernier & Son Pump Co.

(Person, firm, or corporation) (Typed or printed)

Address 470 E. Pershing Blvd.

Fullerton, Calif.

[SIGNED] J. Bernier

(Well Driller)

License No. 196093 Dated 9/24 1971

SKETCH LOCATION OF WELL ON REVERSE SIDE

#12982

WATER WELL DRILLERS REPORT

FIELD WORK SHEET

Report No. 12982

Owner Colusa County Airport

Pump No. -

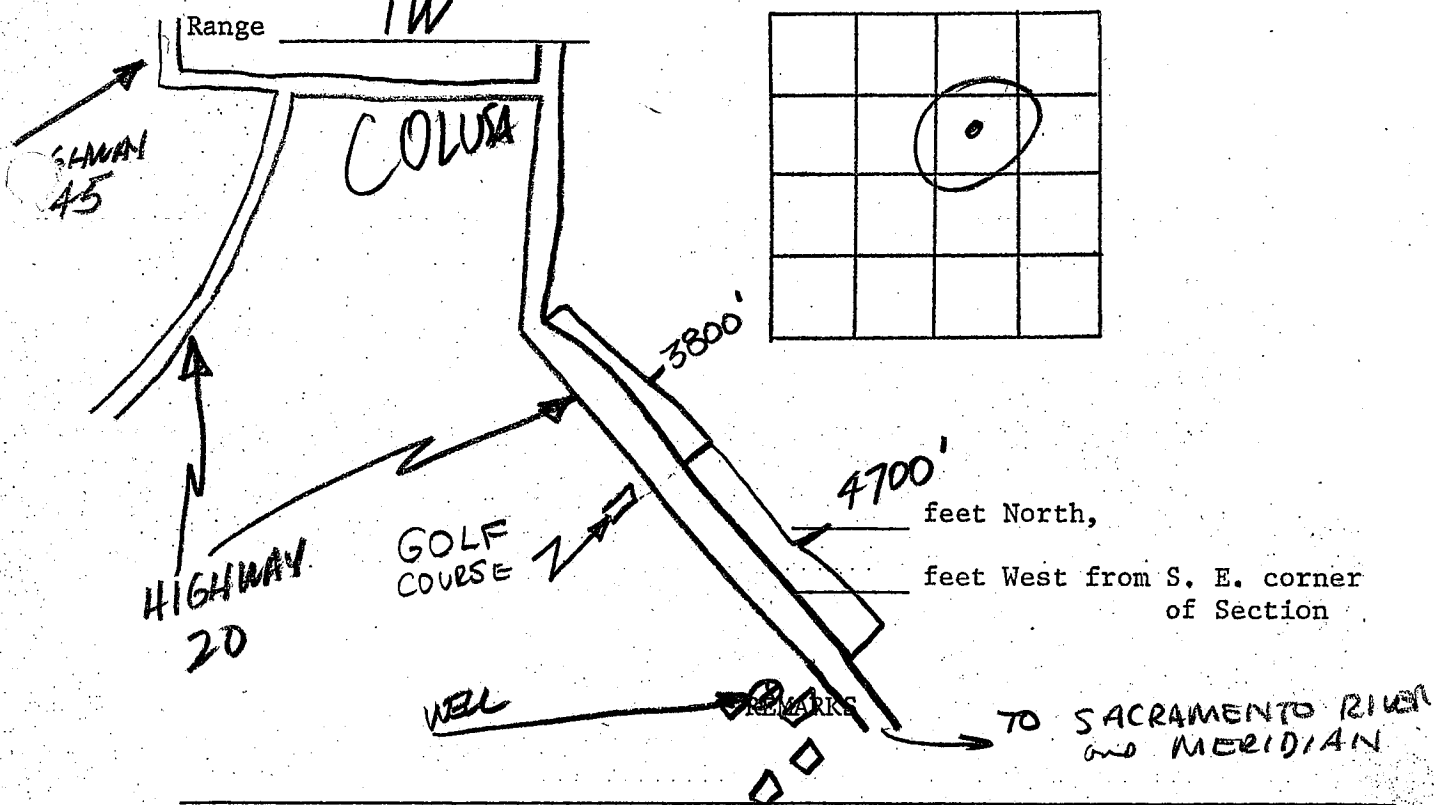
Meter No. -

LOCATION

Section 5G

Township 15N

Range 1W



location not confirmed by owner - well, I think
is behind trailer at north gated airport

Sam
Field Checked by

8-13-74
Date

WILLIAMS 9.5 MI.
COLUSA 1.5 MI.

T. 16 N.
1562 II NE
(COLUSA)
T. 15 N.

4337

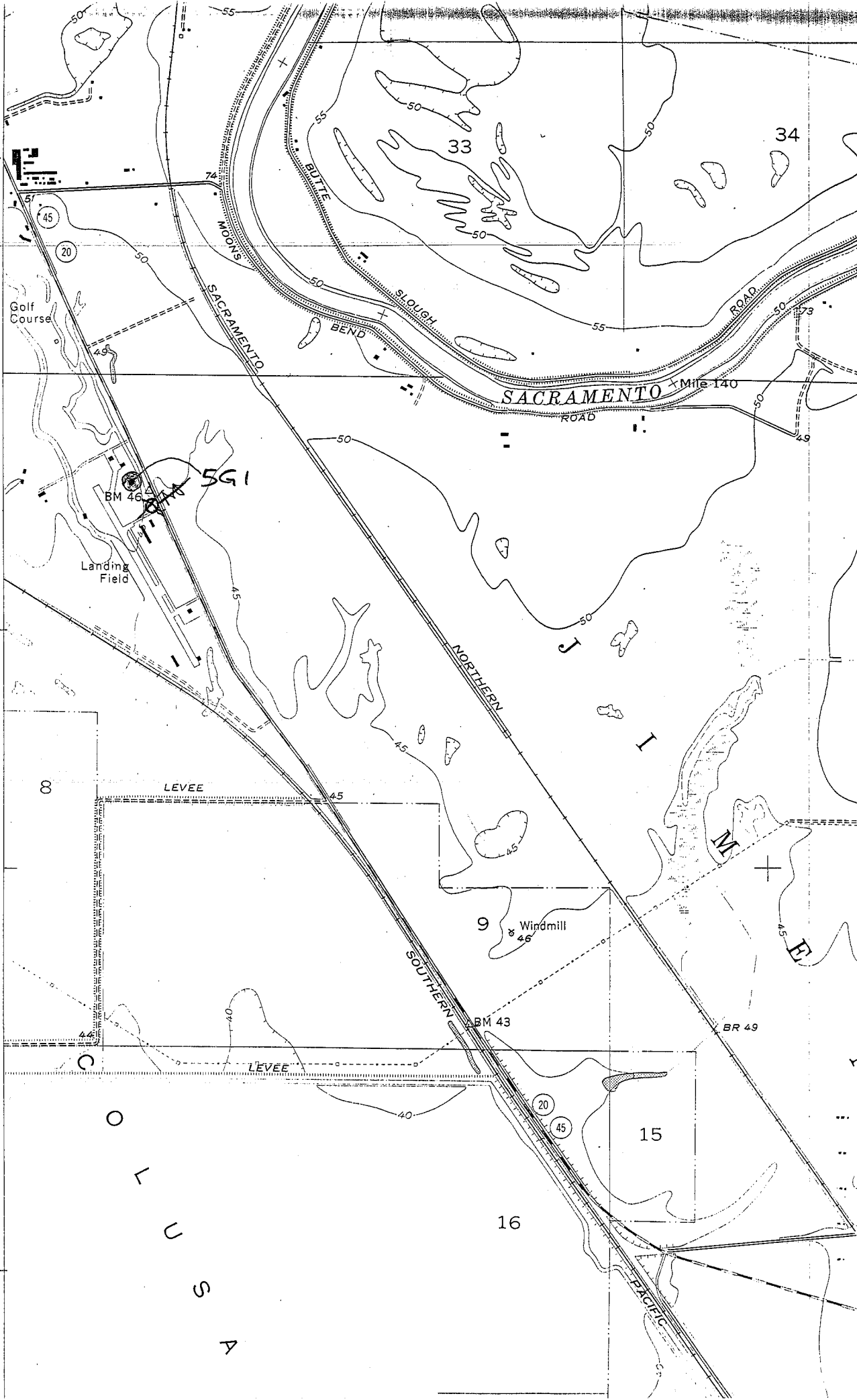
4336

10'

4335

4334

540 000
FEET



5G1

BM 46

Landing Field

LEVEE

NORTHERN

SOUTHERN

Windmill

BM 43

BR 49

15

16

PACIFIC

C
O
L
U
S
A

JUL 14 1994 15N-1W-5G1
State No.

WELL DATA

DISTRICT Northern

Owner Colusa Co. Airport State No. 15N/1W-5G1
Address Colusa 2915 Hwy. 20 - COLUSA Other No. _____
Tenant Caretaker: Connor Davis
Address _____
Type of Well: Hydrograph ☐ Key ☐ Index ☐ Semiannual ☐
Location: County Colusa Basin Colusa No. _____
U.S.G.S. Quad. Meridian Quad. No. 5456
1/4 1 1/4 Section _____, Twp. _____, Rge. _____
Description @ the Colusa Co. Airport. SE 1/4 of Colusa on State Hwy 20 about 1 mile. Well is inside an aluminum clad P.H. 100' S/o HWY & 300' W/o gas pumps
Reference Point description Hole T.O.C.
which is 1.4 ft. above land surface. Ground Elevation 45.0 ft.
Reference Point Elev. 46.4 ft. Determined from Quad
Well: Use Industrial - Dem. Condition _____ Depth 146 ft.
Casing, size 8 in., perforations 0-75 CGS, 2000 H.A.I.T. 140

Measurements By: DWR ☐ USGS ☐ USBR ☐ County ☐ Irr. Dist. ☐ Water Dist. ☐ Cons. Dist. ☐
Chief Aquifer: Name _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____
Type of Material _____ Perm. Rating _____ Thickness _____
Gravel Packed? Yes ☐ No ☐ Depth to Top Gr. _____ Depth to Bot. Gr. _____
Supp. Aquifer _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____
Driller Beamer & Son Pump Co.
Date drilled 8/20/71 Log, filed #12932 open (1) _____ confidential (2) 12932
Equipment: Pump, type Sub make _____
Serial No. _____ Size of discharge pipe _____ in.
Power, Kind _____ Make _____
H. P. _____ Motor Serial No. _____
Elec. Meter No. _____ Transformer No. _____
Yield _____ G.P.M. Pumping level _____ ft.
Water Analysis: Min. (1) _____ San. (2) _____ H.M. (3) _____
Water Levels available: Yes (1) _____ No _____
Period of Record: Begin 10-21-75 End ACTIVE
Collecting Agency: _____
Prod. Rec. (1) _____ Pump Test (2) _____ Yield (3) _____

SKETCH



REMARKS

11 ON 11-28-01 I SURVEYED IN A ACCURATE ELEV. TO THE R.P. FROM USGS B.M. THE R.P. WELL CASING HAD BEEN EXTENDED IN FALL OF 2000. NO ACCURATE RECORD OF THE EXTENSION WAS MADE SO I DID THIS. EWH

WELL MEASUREMENT QUALIFICATION
By: P. LORENS No. 3666 Date 6/14/99

Qualification COMPOSITE Semi-Confined
Confidence DEFINITE

Water Body FLOODPLAIN DEPOSITS & older Basin Deposits

Recorded by: J. Bonomini
Date June 1989

ORIGINAL

File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTIONCONTROL BOARD No. 5

(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

No. **71038**

State Well No. _____

Other Well No. 15N/2W-191
Na
Ac
=(2) LOCATION OF WELL: Lives on Abele RoadCounty Colusa Owner's number, if any—R. F. D. or Street No. 30 feet East from Husted
road a short way south from Crawford
road in the Northwest 1/4 of Section
19, Township 15 North, Range 2 West,
M.D.B. & M.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒Cable ☐Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to ft. Diam. Gage or Wall

0 334 14" 3/16

0 12 24" "

The 24 inch cemented in
from 12 ft to surfaceType and size of shoe or well ring PointDescribe joint all joints welded

If gravel packed

Diameter of Bore from ft. to ft.

24" 0 334"

28" 0 12"

Size of gravel: 5/8"

(7) PERFORATIONS:

standard

Type of perforator used Factory punched double /Size of perforations 1-1/2" in., length, by 3/16 in.

From 162 ft. to 174 ft. 4 per ft. 29 Rows per ft.

174 182 4 " " 29 " " "

198 206 4 " " 29 " " "

262 274 4 " " 29 " " "

290 294 4 " " 29 " " "

(8) CONSTRUCTION:

from surface

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth to 12 ft.Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

Method of Sealing Cement

(9) WATER LEVELS:

Depth at which water was first found 6 ft.Standing level before perforating 16 ft.Standing level after perforating 16 ft.

(10) WELL TESTS:

Was a pump test made? ☒ Yes ☐ No If yes, by whom? W.P. Wilson & SonsYield: See 11 gal./min. with ft. draw down after ? hrs.Temperature of water ? Was a chemical analysis made? ☐ Yes ☒ NoWas electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 334 ft. Depth of completed well 334 ft.

Formation: Describe by color, character, size of material, and structure.

0	3	Soil
3	9	Sand and
9	31	Clay
31	36	Gravel
36	44	Clay
44	48	Sand
48	61	Sandy clay
61	62	Gravel
62	161	Clay
161	168	Brittle
168	181	Gravel
181	198	Clay
198	206	Sand, some fine gravel
206	261	Clay
261	264	Sand
264	271	Clay
271	273	Clay with fine gravel
273	291	Clay
291	294	Brittle with fine gravel
294	311	Clay
311	329	Gravel

Plotted and Coded

As Well 15N/2W-19 1962

Yield of well:

2750 GPM 90.5 feet

2115 " 85.0 "

1950 " 82.0 "

54

3 minute comeback 22 feet

Perforations continued:

310 ft to 314 ft 4 per ft 29 rows

314 " " 334 " 4 " " 29 "

Work started May 3 19 62. Completed May 16 19 62

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Aulman & Aulman

(Person, firm, or corporation)

(Typed or printed)

Address 1309 Westwood WayWoodland, Calif.

[SIGNED]

A. Aulman

Well Driller

License No. 109870Dated 7/1/61, 19

WATER WELL DRILLERS REPORT

FIELD WORK SHEET

Report No. 71038

Owner

Pump No. 1275316

Meter No. NONE

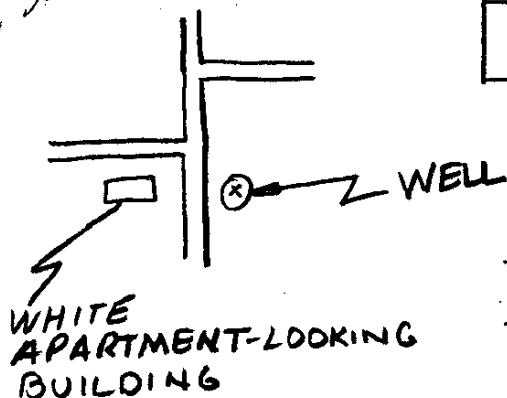
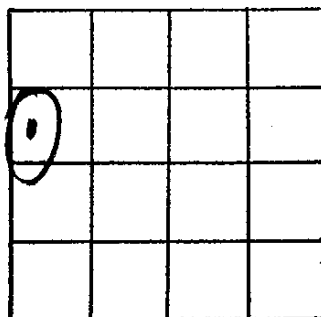
LOCATION

Section 19E

Township 15N

Range 2W

*see attached
for location*

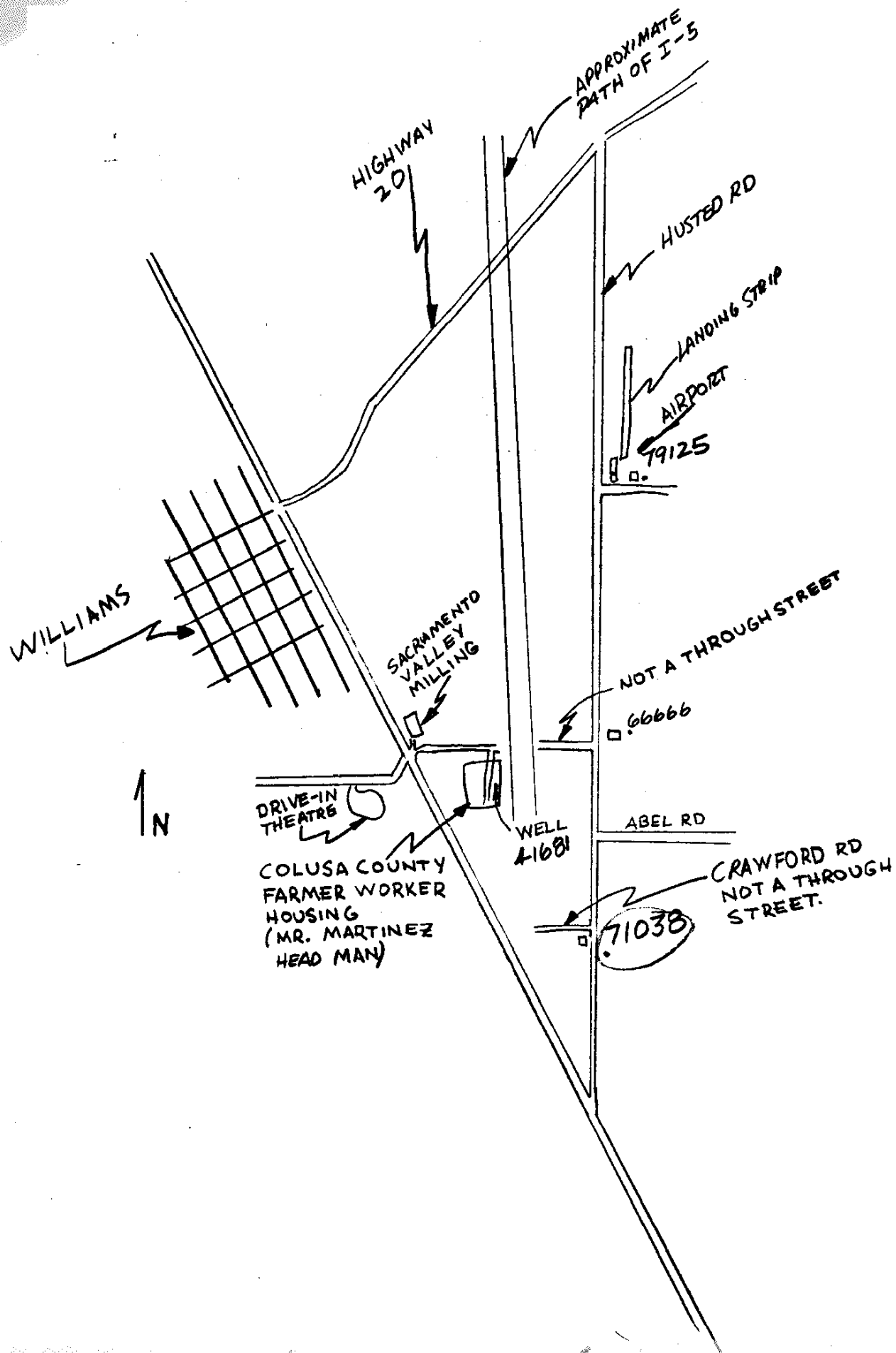


_____ feet North,
_____ feet West from S. E. corner
of Section

REMARKS

*measurable by small hole on north side - no PGIE
meter number - maybe not being used*

Sam
Field Checked by
8-15-74
Date



ORIGINAL
File with DWR

Page 1 of 1

Owner's Well No. 6256

Date Work Began 11/30/92 Ended 12/03/92

Local Permit Agency COLUSA COUNTY ENVIRONMENTAL HEALTH

Permit No. Permit Date 11/12/92

RECEIVED

MAR 05 1993

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 492125

DWR USE ONLY - DO NOT FILL IN

15N/03W-08M

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

WELL OWNER

ORIENTATION () ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH FROM SURFACE
Ft. to Ft.

DESCRIPTION

Describe material, grain size, color, etc.

0	10	TOP SOIL
10	30	CLAY
30	85	GRAVEL
85	88	CLAY, SOME SAND
88	130	SMALL SANDY GRAVEL
130	250	CLAY
250	350	SAND, MOSTLY CLAY

Address .5 MI W OF E CAMP RD & HWY 20

City 35' E OF CANAL

County COLUSA

APN Book 16 Page 060 Parcel 23

Township 15N Range 03W Section 08

Latitude Longitude

DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH

ACTIVITY ()

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe

Procedures and Materials

Under "GEOLOGIC LOG")

PLANNED USE(S)

()

MONITORING

WATER SUPPLY

Domestic

Public

☒ Irrigation

Industrial

"TEST WELL"

CATHODIC PROTEC-

TION

OTHER (Specify)

Illustrate or Describe Distance of Well from Landmarks
such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

DRILLING METHOD REVERSE FLUID WATER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD* (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 360 (Feet)
TOTAL DEPTH OF COMPLETED WELL 350 (Feet)

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING(S)					DEPTH FROM SURFACE			ANNULAR MATERIAL						
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE			
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to	Ft.	CE- MENT (✓)
0	140		28"	X				ASTM-135	12-3/4	.250		0	20		X			SAND SLURRY
140	250		22"	X				ASTM-135	10-3/4	.250		20	150				X	6X16 SAND PACK
250	350		22"		X			HOUSTON CULT	10-3/4		0.050	150	210				X	GRAVEL
0	30							T & C	2"			210	360				X	6X16 SAND PACK
30	130		28"	X				HOUSTON CULT	16"		0.050							
																		MAR 13 1993

ATTACHMENTS ()

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil / Water Chemical Analyses
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING COMPANY, INC.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. Kentucky Ave.

Woodland

CA 95695

ADDRESS

CITY

STATE

ZIP

Signed

Tom Eaton

WELL DRILLER/AUTHORIZED REPRESENTATIVE

03/04/93

DATE SIGNED

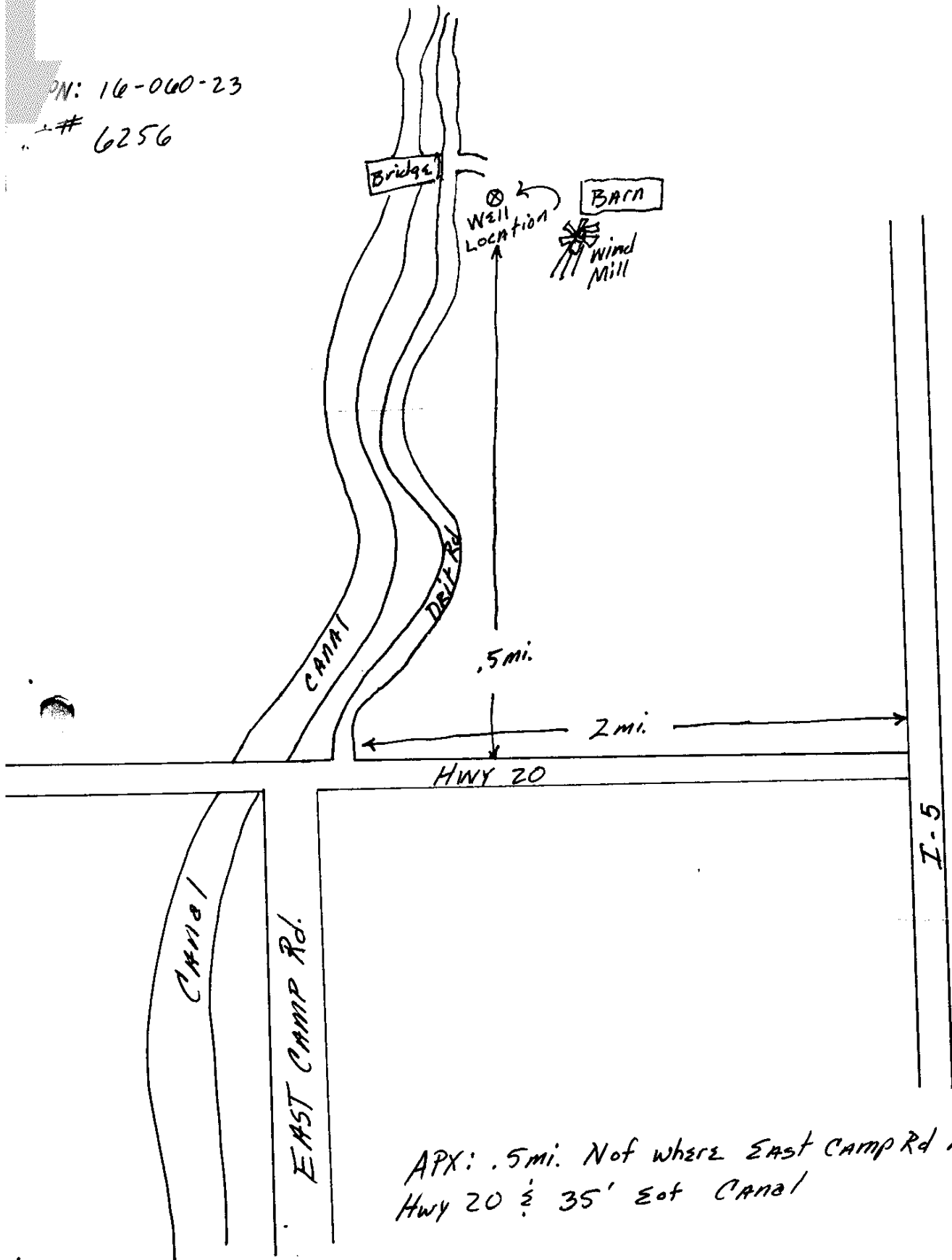
133783C57

C-57 LICENSE NUMBER

PN: 16-060-23

6256

N



APX: .5 mi. N of where East Camp Rd meets
Hwy 20 \pm 35' E of Canal

ORIGINAL

File with DWR

Page 1 of 2

Owner's Well No. 15 N03W 20 Q001M No. 802508A

Date Work Began 2-9-04 Ended 2-25-04

Local Permit Agency Colusa County

Permit No.

Permit Date

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

DWR USE ONLY — DO NOT FILL IN

15N/03W-20

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION () VERTICAL HORIZONTAL ANGLE (SPECIFY)

DRILLING METHOD

FLUID

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE	FL	to	FL	DESCRIPTION
0	12			Soft yellow brown ML 10yr 5/4
12	22			100% Silt
22	34			Clay Yellow Brn CL 10yr 6/6
34	40			Silt Yell Brn ML 10yr 6/6
40	44			Sand & Gravel SW 10yr 4/4
44	60			Clayey Gravel CL 10yr 4/4
60	68			Silt Yellow Brn ML 10yr 5/4
68	74			Clay Yellow Brn CL 10yr 5/4
74	81			Gravel & Sand GW 10yr 4/4
81	94			Clay Yellow Brn CL 10yr 6/6
94	110			Silt w Gravel ML 10yr 5/4
110	115			Clay Yell Brn 10yr 6/6
115	123			Silt Yell Brn ML 10yr 6/6
123	140			Clay Yell Brn CL 10yr 6/6
140	145			Silt w Gravel & Sand GW 10yr
145	160			Silt Yell Brn ML 10yr 5/4
160	172			Silt Yell Brn ML 10yr 6/6
172	180			Silt Yell Brn ML 10yr 5/4
180	185			Clay Brn CL 10yr 4/4
185	193			Silt Olive Gray ML 5/4 4/1
193	216			Clay Gravel & Sand CL 5/4 4/1
216	220			Silt Green Gray ML 5/4 4/1
220	235			Clay Olive Gray CL 5/4 4/1
235	250			Silt Olive Gray ML 5/4 4/1
250	253			Sand Green Gray SW 5/4 4/1
253	274			Silt Green Gray ML 5/4 4/1
274	280			Silt Green Gray ML 5/4 4/1
280	380			Silt Green Gray ML 5/4 4/1

TOTAL DEPTH OF BORING: 620 (Feet)

TOTAL DEPTH OF COMPLETED WELL 420 (Feet)

WELL LOCATION

Address East Camp & Pump House Rd

City Williams

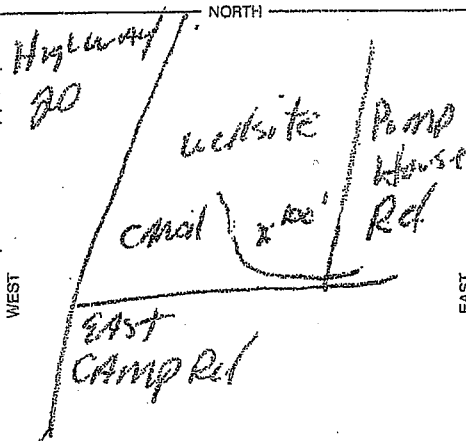
County Colusa

APN Book 15N Page 03W Parcel 20

Township 15N Range 03W Section 20

Latitude DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY ()

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES ()

WATER SUPPLY

Domestic Public

Irrigation Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (FL) BELOW SURFACE C 17.93

DEPTH OF STATIC WATER LEVEL B 16.08

WATER LEVEL B 15.69 (FL) & DATE MEASURED

ESTIMATED YIELD 3 (GPM) & TEST TYPE Air Lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN 2.4 (FL)

* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE			ANNULAR MATERIAL				
				TYPE ()				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS				SLOT SIZE IF ANY (Inches)	TYPE			
FL	to	FL	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									FL	to	FL	CE- MENT ()
0	180	12									0	25						
180	425	9 7/8									25	29						
425	620	6 1/4									29	82					# 3 sand	
0	30		X				SL 80 PVC	12.5	80		82	117					Grout	
30	80			X			6"	11	6"	020	117	121					CHIP	
80	90		X				6"	11	8"		121	180					# 3 sand	

ATTACHMENTS ()

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analyses
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME WDC Exploration

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS PO BOX 141, TAMORA, CA 95698

CITY

STATE

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page ____ of ____

Owner's Well No. _____

Date Work Began _____ Ended _____

Local Permit Agency _____

Permit No. _____ Permit Date _____

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **802510**

DWR USE ONLY - DO NOT FILL IN

STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

WELL OWNER

ORIENTATION () ☐ VERTICAL ☐ HORIZONTAL ☐ ANGLE _____ (SPECIFY)

Name _____

Mailing Address _____

CITY _____

STATE _____

ZIP _____

Address _____

City _____

County _____

APN Book _____

Page _____

Parcel _____

Township _____

Range _____

Section _____

Latitude _____

DEG. MIN. SEC. _____

NORTH

Longitude _____

DEG. MIN. SEC. _____

WEST

LOCATION SKETCH

ACTIVITY ()

☐ NEW WELL

☐ MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify) _____

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES ()

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

☐ MONITORING

☐ TEST WELL

☐ CATHODIC PROTECTION

☐ HEAT EXCHANGE

☐ DIRECT PUSH

☐ INJECTION

☐ VAPOR EXTRACTION

☐ SPARGING

☐ REMEDIATION

☐ OTHER (SPECIFY) _____

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (FL) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (FL) & DATE MEASURED _____

ESTIMATED YIELD _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs) TOTAL DRAWDOWN _____ (Ft.)

* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE
FL to FL

DRILLING METHOD

FLUID

DESCRIPTION

Describe material, grain size, color, etc.

380	390	Coarse brown BLK S 6Y 2/1
390	402	Silt Green Gray ML S 6Y 4/1
402	409	Coarse brown BLK 6D 5Y 3/1
409	420	Silt Blue Gray ML S 6Y 4/1
420	448	Silt Blue Gray ML S 6Y 4/1
448	452	Sand Blue Gray SP S 6Y 4/1
452	460	Silt Blue Gray ML S 6Y 4/1
460	480	Silt " " " " " "
480	505	Silt Blue Green ML S 6Y 4/1
505	520	Silt Green Gray ML S 6Y 4/1
520	532	Silt Green Gray ML S 6Y 4/1
532	540	Silt Green Gray ML S 6Y 4/1
540	560	Silt Green " ML S 6Y 4/1
560	570	Silt Blue " ML S 6Y 4/1
570	580	Silt Blue " ML S 6Y 4/1
580	600	Silt Green " ML S 6Y 4/1
600	620	Silt Green " ML S 6Y 4/1

TOTAL DEPTH OF BORING: **620** (Feet)

TOTAL DEPTH OF COMPLETED WELL: **420** (Feet)

DEPTH FROM SURFACE FL to FL	BORE-HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE FL to FL	ANNULAR MATERIAL			
		TYPE ()			MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS		SLOT SIZE IF ANY (Inches)	TYPE		
SLANK	SCREEN	CONDUCTOR	FILL PIPE	CE- MENT ()				BEN- TONITE ()		FILL ()	FILTER PACK (TYPE/SIZE)	
0 - 130					PVC	2.5	3/4" x 1/2"	130 - 358				Grout
130 - 160					PVC	2.5	3/4" x 1/2"	358 - 360				Chips
160 - 170					PVC	2.5	3/4" x 1/2"	360 - 424				3 Sand
0 - 370					PVC	2.5	3/4" x 1/2"	424 - 620				
370 - 410					PVC	2.5	3/4" x 1/2"					
410 - 420					PVC	2.5	3/4" x 1/2"					

ATTACHMENTS ()

- ☐ Geologic Log
- ☒ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **WDC Exploration**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS **PO Box 141 Zamora CA 95698**

Signed **[Signature]**
WELL DRILLER/AUTHORIZED REPRESENTATIVE

CITY

STATE

ZIP

DATE SIGNED **4-17-09**

C-57 LICENSE NUMBER **253326**

DUPLICATE
Driller's Copy

Page 1 of 6

Owner's Well No. 7546

Date Work Began 6/9/2003, Ended 6/17/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT

Permit No. 2003-77

Permit Date 6/3/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726832 A,B,C**

DWR USE ONLY -- DO NOT FILE IN

16N/02W-05

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓)		✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)		DRILLING METHOD REVERSE		FLUID WATER	
DEPTH FROM SURFACE						DESCRIPTION	
Ft.	to Ft.					Describe material, grain, size, color, etc.	
0	18					OLIVE/BROWN CLAY	
18	24					YELLOW/BROWN SILT	
24	40					YELLOW/BROWN CLAY	
40	66					ORANGE/BROWN CLAY	
66	106					YELLOW/BROWN CLAY	
106	126					OLIVE/GRAY CLAY	
126	170					OLIVE/GRAY CLAY W/SML GRAVEL STREAKS	
170	187					WELL GRADED GRAVEL	
187	226					YELLOW/BROWN CLAY	
226	236					OLIVE/GRAY CLAY	
236	260					WELL GRADED GRAVEL W/COBBLE STREAKS	
260	306					YELLOW/GRAY CLAY	
306	320					OLIVE/GRAY CLAY	
320	340					GRN/GRY CLY AND SND W/SML GRVL STRKS	
340	346					POORLY GRADED SAND	
346	366					GREEN/GRAY CLAY	
366	386					GREEN/GRAY CLAY WITH SAND STREAKS	
386	426					GREEN/GRAY CLAY AND SAND	
426	446					OLIVE/GRAY CLAY AND SAND	
446	456					OLIVE/BROWN CLAY AND SAND	
456	476					POORLY GRADED GRAVEL WITH SILT	
476	486					BLUE/GRAY CLAY	
486	534					OLIVE/BROWN CLAY	
534	542					WELL GRADED GRAVEL WITH SAND	
542	606					YELLOW/GRAY CLAY	
606	618					GREEN/GRAY CLAY WITH SAND	
618	640					WELL GRADED GRAVEL WITH SAND	
640	650					CLAY	
650	664					WELL GRADED GRAVEL WITH SAND	
664	668					CLAY	

TOTAL DEPTH OF BORING 986 (Feet)

TOTAL DEPTH OF COMPLETED WELL 813 (Feet)

Address 30 FT S OF MAXWELL RD & 1/2 MI E OF 4 MILE RD

City CA

County COLUSA

APN Book 030 Page 910 Parcel 010

Township 16 N Range 2 W Section 5

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

e-log on file

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

— Deepen
— Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public
— Irrigation — Industrial

MONITORING —

TEST WELL —

CATHODIC PROTECTION —

HEAT EXCHANGE —

DIRECT PUSH —

INJECTION —

VAPOR EXTRACTION —

SPARGING —

REMEDIATION —

OTHER (SPECIFY) ✓

EXTENSOMETER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER — (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL — (Ft.) & DATE MEASURED

ESTIMATED YIELD * — (GPM) & TEST TYPE

TEST LENGTH — (Hrs.) TOTAL DRAWDOWN — (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)					ANNULAR MATERIAL	
Ft.	to Ft.		TYPE (✓)		MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE
			BLANK	SCREEN					
0	18	36		✓	BLK STEEL	24			SAND SLURRY
ZONE	1								
0.0	174.1	36/18	✓		PVC	2.5	SCH 80		HALIBURTON
174.1	183.7	18		✓	SS WR WR	2.5		0.020	#8 GRD SAND
183.7	245.8	18	✓		PVC	2.5	SCH 80		HALIBURTON
245.8	255.4	18		✓	SS WR WR	2.5		0.020	#8 GRD SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

07/11/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

DUPLICATE
Driller's Copy

Page 2 of 6

Owner's Well No. 7546

Date Work Began 6/9/2003, Ended 6/17/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT.

Permit No. 2003-77

Permit Date 6/3/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726832**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓)		DRILLING METHOD	FLUID	DESCRIPTION
DEPTH FROM SURFACE				
Ft.	to Ft.			Describe material, grain, size, color, etc.
668	688	REVERSE	WATER	WELL GRADED GRAVEL WITH SAND
688	706			GREEN/GRAY CLAY
706	720			GREEN/GRAY CLAY WITH FINE SAND
720	747			POORLY GRADED GRAVEL WITH SAND
747	766			WELL GRADED GRAVEL W/COARSE SAND
766	826			GRAY/GREEN CLAY W/FINE SAND AND SILT
826	846			OLIVE/BROWN CLAY
846	860			GRAY/GREEN CLAY WITH SILT
860	875			POORLY GRADED GRAVEL
875	906			GRAY CLAY W/FINE SAND AND SILT STREAKS
906	946			GRY/BLK CLY W/FINE SAND AND SILT STRKS
946	986			BLU/GRY CLY W/FINE SAND AND SILT STRKS
TOTAL DEPTH OF BORING 986 (Feet)				
TOTAL DEPTH OF COMPLETED WELL 813 (Feet)				

Address 30 FT S OF MAXWELL RD & 1/8 MI E OF 4 MILE RD

City CA

County COLUSA

APN Book 030 Page 910 Parcel 010

Township 16 N Range 2 W Section 5

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

NEW WELL
MODIFICATION/REPAIR
— Deepen
— Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
— Domestic — Public
— Irrigation — Industrial

MONITORING —

TEST WELL —

CATHODIC PROTECTION —

HEAT EXCHANGE —

DIRECT PUSH —

INJECTION —

VAPOR EXTRACTION —

SPARGING —

REMEDIATION —

OTHER (SPECIFY) ✓

EXTENSOMETER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER — (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL — (Ft.) & DATE MEASURED

ESTIMATED YIELD * — (GPM) & TEST TYPE

TEST LENGTH — (Hrs.) TOTAL DRAWDOWN — (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL			
Ft.	to Ft.		TYPE (✓)	BLANK	SCREEN	CONDUCTOR				MATERIAL / GRADE	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)
255.4	276.6	18	✓				PVC	2.5	SCH 80				
ZONE 2													
0.0	730.0	36/18	✓				BLK STEEL	4					
730.0	750.0	18	✓				MILLSLOT	4					
750.0	813.0	18	✓				BLK STEEL	4					
ZONE 3													

DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
673	797				
797	986				#8 GRD SAND SAND SLURRY

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

07/11/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

DUPLICATE
Driller's Copy

Page 3 of 6

Owner's Well No. 7546

Date Work Began 6/9/2003, Ended 6/17/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT.

Permit No. 2003-77

Permit Date 6/3/2003

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726832

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD REVERSE FLUID WATER

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	18	OLIVE/BROWN CLAY
18	24	YELLOW/BROWN SILT
24	40	YELLOW/BROWN CLAY
40	66	ORANGE/BROWN CLAY
66	106	YELLOW/BROWN CLAY
106	126	OLIVE/GRAY CLAY
126	170	OLIVE/GRAY CLAY W/SML GRAVEL STREAKS
170	187	WELL GRADED GRAVEL
187	226	YELLOW/BROWN CLAY
226	236	OLIVE/GRAY CLAY
236	260	WELL GRADED GRAVEL W/COBBLE STREAKS
260	306	YELLOW/GRAY CLAY
306	320	OLIVE/GRAY CLAY
320	340	GRN/GRY CLY AND SND W/SML GRVL STRKS
340	346	POORLY GRADED SAND
346	366	GREEN/GRAY CLAY
366	386	GREEN/GRAY CLAY WITH SAND STREAKS
386	426	GREEN/GRAY CLAY AND SAND
426	446	OLIVE/GRAY CLAY AND SAND
446	456	OLIVE/BROWN CLAY AND SAND
456	476	POORLY GRADED GRAVEL WITH SILT
476	486	BLUE/GRAY CLAY
486	534	OLIVE/BROWN CLAY
534	542	WELL GRADED GRAVEL WITH SAND
542	606	YELLOW/GRAY CLAY
606	618	GREEN/GRAY CLAY WITH SAND
618	640	WELL GRADED GRAVEL WITH SAND
640	650	CLAY
650	664	WELL GRADED GRAVEL WITH SAND
664	668	CLAY

TOTAL DEPTH OF BORING 986 (Feet)

TOTAL DEPTH OF COMPLETED WELL 813 (Feet)

Address 30 FT S OF MAXWELL RD & 6 MILE OF 4 MILE RD

City CA

County COLUSA

APN Book 030 Page 910 Parcel 010

Township 16 N Range 2 W Section 5

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☐

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☒

EXTENSOMETER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)			
Ft.	to Ft.		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	SLOT SIZE IF ANY (Inches)
0.0	462.4	36/18	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80
462.4	473.4	18	<input checked="" type="checkbox"/>	SS WR WR	2.5	0.020
473.4	494.6	18	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80

DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	18	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SAND SLURRY
0	117	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HALIBURTON
117	301	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	#8 GRD SAND
301	433	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HALIBURTON
433	535	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	#8 GRD SAND
535	535	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	HALIBURTON

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

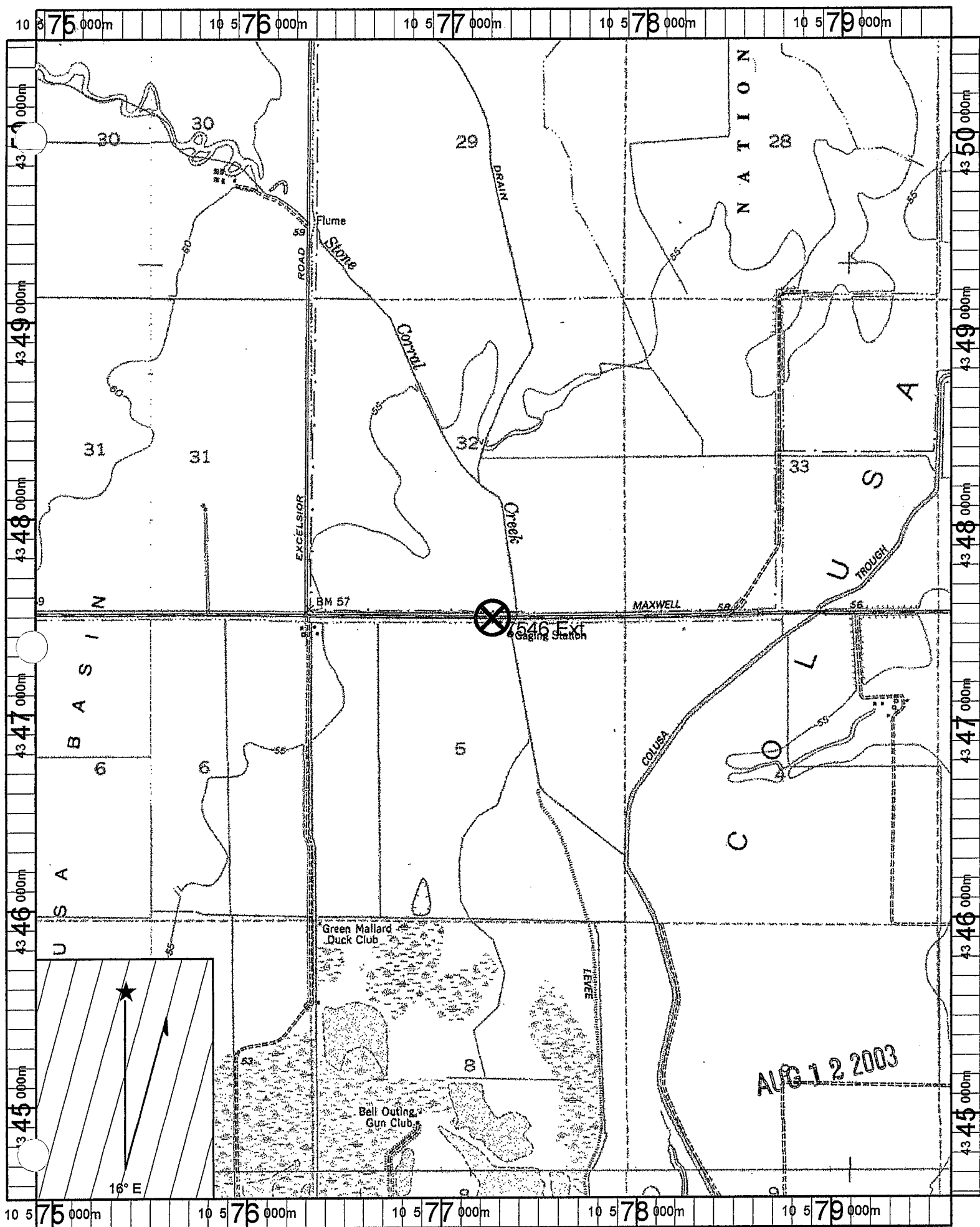
WELL DRILLER/AUTHORIZED REPRESENTATIVE

07/11/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER



16N/2W-25B2

Date June 17, 1965

Rig No

NE Lussanmeyer

Driller in Charge

Clarence Dobbin

Location

3/4 mi west Colusa

Depth of Hole 274 feet.

Size 8"

Water Level

th of Casing 274 feet.

FORMATION: (State every Stratum and Condition)

n	0	feet to	54	feet	84 - gravel
om	84	feet to	96	feet	hard gravelly Clay
om	96	feet to	212	feet	brown clay
rom	212	feet to	270	feet	blue clay
rom	270	feet to	274	feet	coarse gravel
From		feet to		feet	Bottom
From		feet to		feet	
From		feet to		feet	

Remarks:

Owner says This well is perforated
at the Bottom 20' only. Baues

ORIGINAL
File with DWR

Page 2 of 4

Owner's Well No. 8469

Date Work Began 8/16/2010, Ended 8/27/2010

Local Permit Agency Colusa County Health Dept

Permit No. WP0000085 Permit Date 8/10/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E0116237**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE _____ (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE

Ft. to Ft.

DESCRIPTION

Describe material, grain, size, color, etc.

0	5	Top soil
5	660	Sandy brown clay with small gravel streaks
660	1130	Sandy blue clay with sand streaks
1130	1230	Sand and gravel
1230	1350	Sandy blue clay
1350	1440	Black sand with gravel
1440	1500	Blue clay

Address **30' W of 2 Mile Rd & 1.6 Mi N of**

City **Lurline Ave CA**

County **COLUSA**

APN Book **014** Page **210** Parcel **005**

Township **16 N** Range **3 W** Section **14**

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL
☐ MODIFICATION/REPAIR
 ☐ Deepen
 ☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

☒ MONITORING

☐ TEST WELL

☐ CATHODIC PROTECTION

☐ HEAT EXCHANGE

☐ DIRECT PUSH

☐ INJECTION

☐ VAPOR EXTRACTION

☐ SPARGING

☐ REMEDIATION

☐ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING **1500** (Feet)

TOTAL DEPTH OF COMPLETED WELL **1440** (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)
720		730	14	✓				PVC	2.5	SCH 80					
730		740	14	✓				PVC	2.5	SCH 80					Bentonite Seal
Zone		3													SRI#8 Sand
0		1140	10	✓				PVC	2.5	SCH 80			✓		Bentonite Seal
1140		1150	10	✓				PVC	2.5	SCH 80			✓		SRI#8 Sand
1150		1170	10	✓				PVC	2.5	SCH 80			✓		Bentonite Seal
													✓		SRI#8 Sand

ATTACHMENTS (✓)

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. Kentucky Ave

ADDRESS

Woodland

CITY

CA

STATE

95695

ZIP

Signed

[Signature]

WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/01/10

DATE SIGNED

C57 A 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 4 of 4

Owner's Well No. 8469

Date Work Began 8/16/2010, Ended 8/27/2010

Local Permit Agency Colusa County Health Dept

Permit No. WP0000085 Permit Date 8/10/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E0116237**

DWR USE ONLY — DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

WELL OWNER

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH FROM SURFACE DRILLING METHOD **ROTARY** FLUID **MUD**

Fl. to Fl. DESCRIPTION Describe material, grain, size, color, etc.

0	5	Top soil
5	660	Sandy brown clay with small gravel streaks
660	1130	Sandy blue clay with sand streaks
1130	1230	Sand and gravel
1230	1350	Sandy blue clay
1350	1440	Black sand with gravel
1440	1500	Blue clay

Address 30' W of 2 Mile Rd & T.6 M. Not

City Lurline Ave CA

County COLUSA

APN Book 014 Page 210 Parcel 005

Township 16 N Range 3 W Section 14

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL
MODIFICATION/REPAIR
☐ Deepen
☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WEST
EAST
SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 1500 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1440 (Feet)

DEPTH FROM SURFACE Fl. to Fl.	BORE-HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE Fl. to Fl.	ANNULAR MATERIAL			
		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)			CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
1410	1420	8.75	✓	PVC	2.5	SCH 80	.035	1236	1261	✓	✓	Bentonite Seal
1420	1440	8.75	✓	PVC	2.5	SCH 80		1261	1295		✓	SRI#8 Sand
								1295	1322	✓	✓	Bentonite Seal
								1322	1481		✓	SRI#8 Sand
								1481	1488	✓	✓	Bentonite Seal
								1488	1500		✓	Native Fill

ATTACHMENTS (✓)

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. Kentucky Ave

ADDRESS

Woodland

CITY

CA

STATE

95695

ZIP

Signed

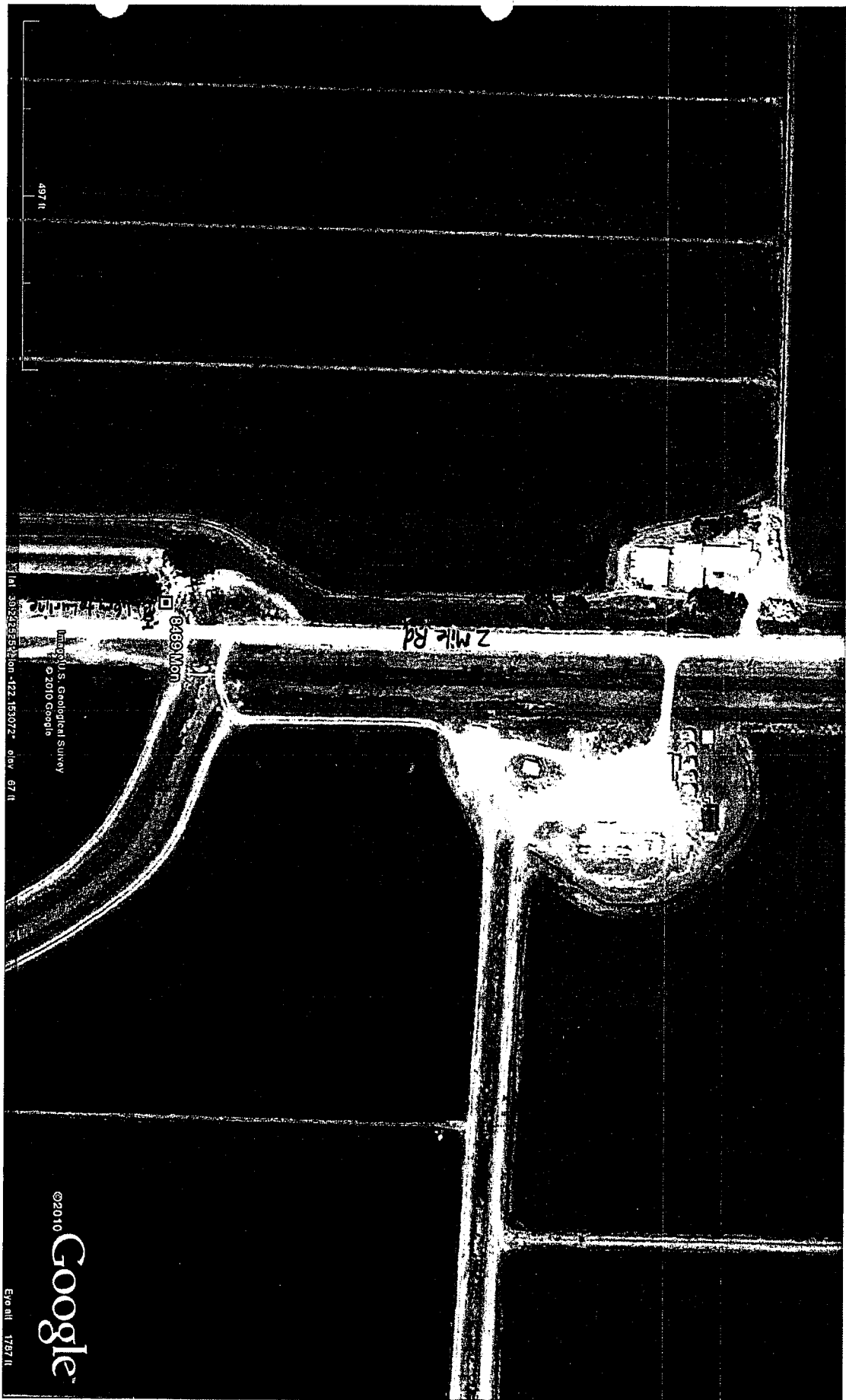
WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/01/10

DATE SIGNED

C57 A 133783

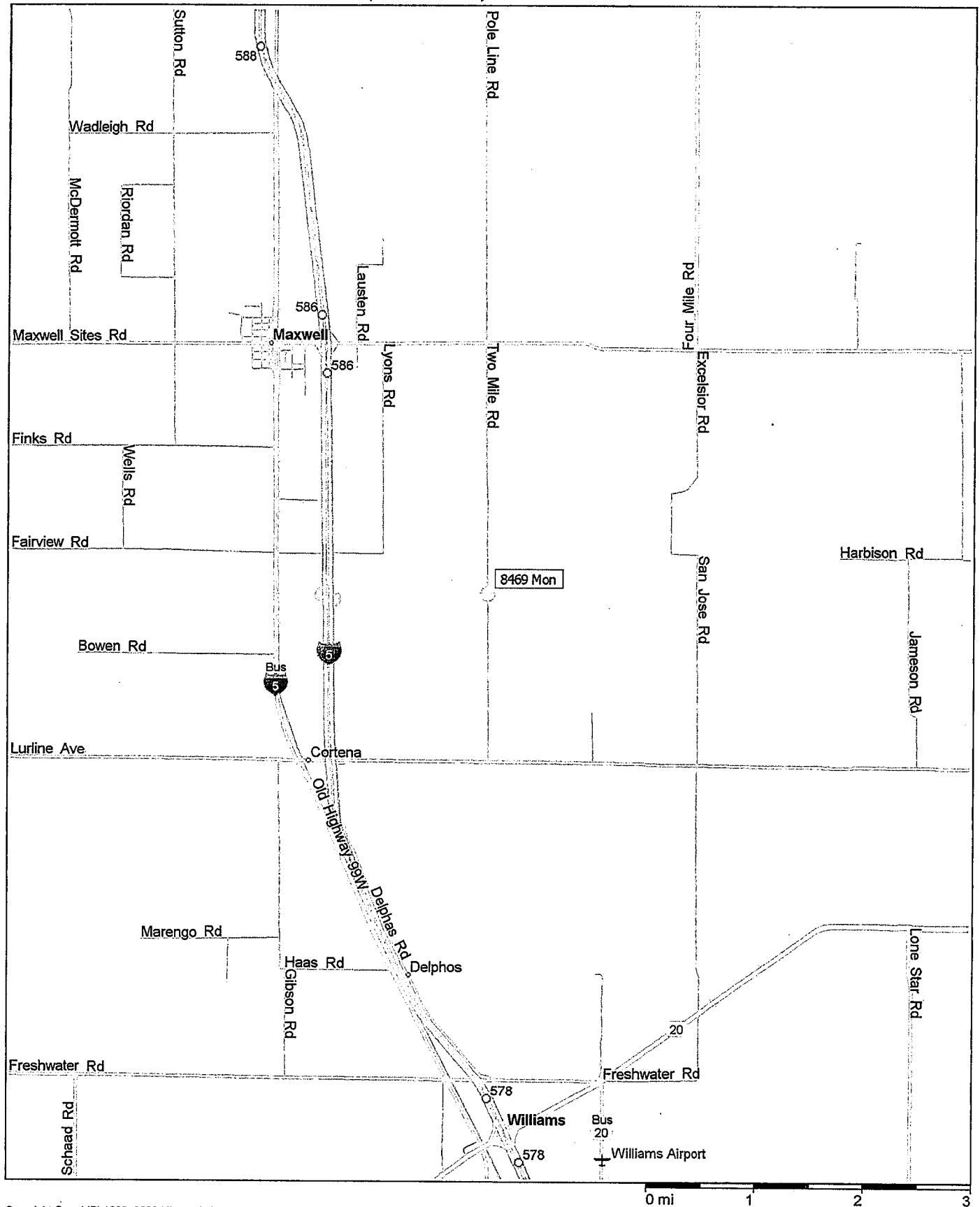
C-57 LICENSE NUMBER

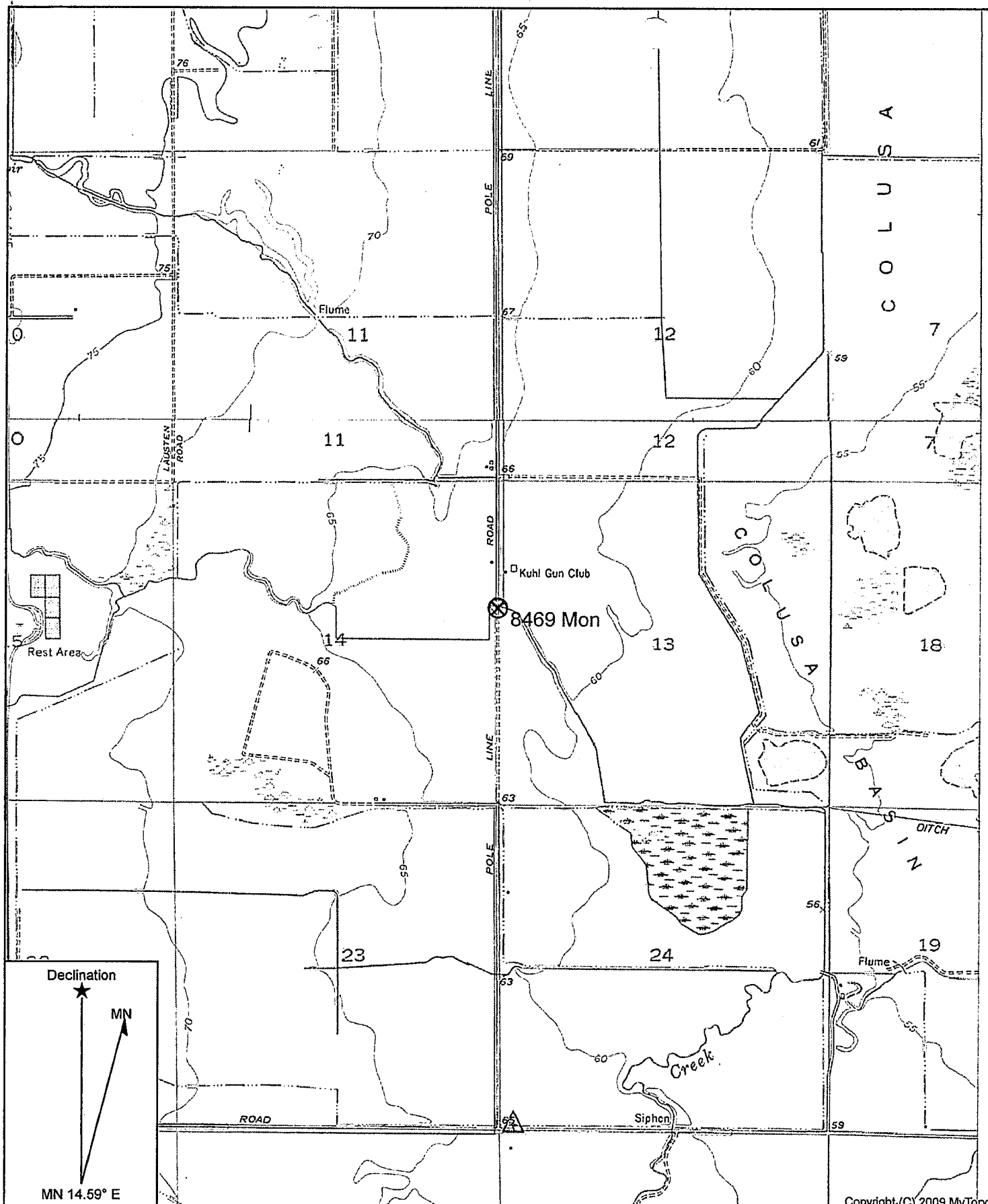


©2010 Google

Eye alt 1767 ft

DWR (2 Mile Rd) - Job# 8469 Mon





Copyright (C) 2009 MyTopo

Name: WILLIAMS
 Date: 08/09/10
 Scale: 1 inch = 2,000 ft.

Location: 039.2415200° N 122.1535400° W
 DWR (2 Mile Rd) - Job# 8469 Mon
 APN: 014-210-004
 T16N R3W s14

WELL LOG

LOCAL DESIGNATION 38

Date drilled 12-13-46

LOCATION 100' N., 250' E., of S.W. corner

Colusa Co., Sacto. Valley Dist., Spring Valley Quad.

OWNER_____

DATE COMPLETED _____

DIAMETER OF CASING 4"

DRILLED BY L.C. Parkison

SOURCE OF INFORMATION Owner & Driller

INSPECTED WHILE DRILLING _____ SEE FILE NO. _____

SURFACE ELEVATION 73'

SKETCH

CONFIDENTIAL LOG
Water Code Sec. 13752

[illegible]

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY:

DATE

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

No. **77484**

State Well No. 16W/4W

Other Well No. 8

(1) OW

Name _____

Address _____

(2) LOCATION OF WELL:

County Colusa Co. Owner's number, if any—

R. F. D. or Street No.

Sec. 11, TWP 16 N, R 4 W

300' west of Mills Orchard Rd.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☒ (stock)

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to ft. Diam. Gage or Wall

0 203 8-5/8 .188

If gravel packed

Diameter of Bore from ft. to ft.

18" 0 203

Type and size of shoe or well ring

Describe joint Welded

Size of gravel: Pea gravel

(7) PERFORATIONS:

Type of perforator used Machine cut at factory

Size of perforations 1/8 in., length, by 3 in.

From ft. to ft. Perf. per row Rows per ft.

112 203

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth ft.

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS:

See back of page

Was a pump test made? ☒ Yes ☐ No If yes, by whom? E.E. Luhdorff Co.

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

Was electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 203 ft. Depth of completed well 203 ft.

Formation: Describe by color, character, size of material, and structure.

0 ft. to	2 ft.	2'	Top soil
2	9	7'	Yellow clay
9	15	6'	Sand, pea gravel & shale
15	75	60'	Yellow clay
75	102	27'	Yellow clay, gravel and shale
102	112	10'	Brown shale
112	117	5'	Sand, pea gravel, shale
117	131	14'	Yellow clay
131	146	15'	Sand, pea gravel, shale
146	203	57'	Sand rock & pea gravel

CONFIDENTIAL LOG
Water Code Sec. 13752

CONFIDENTIAL
Section 13752, Water Code

Plotted and Coded

As Well 16W/4W - 2P80

Work started 12-4 19 63 , Completed 12-12 19 63

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME E. E. LUHDORFF

(Person, firm, or corporation)

(Typed or printed)

Address WEST MAIN STREET

WOODLAND, CALIFORNIA

[SIGNED]

E.E. Luhdorff
Well Driller

License No. 123211

Dated Jan. 13, 19 64

Results of Test as follows:

Static level 20'

125 GPM @ 96' Pumping level
 150 " @ 116'
 187 " @ 150'

ATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

N^o 77484

State Well No.

Other Well No.

ADDRESS

(2) LOCATION OF WELL:

County Colusa Co. Owner's number, if any—

R. F. D. or Street No.

Sec. 11, TWP 16 N, R 4 W

300' west of Mills Orchard Rd.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐Irrigation ☐ Test Well ☐ Other (stock) ☒

(5) EQUIPMENT:

Rotary ☒Cable ☐Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
0	203	8-5/8	.188	

If gravel packed

Diameter of Bore	from	to
18"	0	203

Type and size of shoe or well ring

Describe joint Welded

Size of gravel: Pea gravel

(7) PERFORATIONS:

Type of perforator used Machine cut at factory

Size of perforations 1/8 in., length, by 3 in.

From	ft. to	ft.	Perf. per row	Rows per ft.
112	203			

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth ft.Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS: See back of page

Was a pump test made? ☒ Yes ☐ No If yes, by whom? E.E. Luhdorff Co.

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ NoWas electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 203 ft. Depth of completed well 203 ft.

Formation: Describe by color, character, size of material, and structure.

0 ft. to	2 ft.	2'	Top soil
2	9	7'	Yellow clay
9	15	6'	Sand, pea gravel & shale
15	75	60'	Yellow clay
75	102	27'	Yellow clay, gravel and shale
102	112	10'	Brown shale
112	117	5'	Sand, pea gravel, shale
117	131	14'	Yellow clay
131	146	15'	Sand, pea gravel, shale
146	203	57'	Sand rock & pea gravel

CONFIDENTIAL LOG
Water Code Sec. 13752CONFIDENTIAL
Section 13752, Water Code

Plotted and Coded

As Well : 16N / 4W - 2P80

Work started 12-4 19 63 , Completed 12-12 19 63

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME E. E. LUHDORFF

(Person, firm, or corporation)

(Typed or printed)

Address WEST MAIN STREET

WOODLAND, CALIFORNIA

[SIGNED]

License No. 123211

Dated Jan. 13, 19 64

WATER WELL DRILLERS REPORT

FIELD WORK SHEET

ION NOT CHECKED

Not Fill In

77484

2P

16N/4W

Report No. 77484

Owner

Pump No. SCB

Meter No. 3T6731

203 ft.

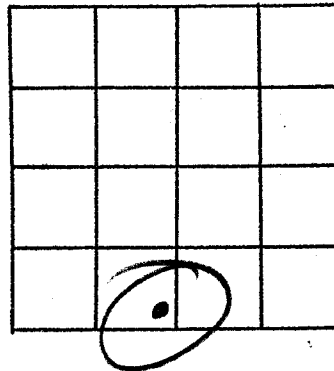
clay
clay
pea gravel & shale
clay
clay, gravel
le
shale
a gravel, shale
clay
a gravel, shale
ck & pea gravel

LOCATION

Section 2P

Township 16N

Range 4W



see attached sheet for well location

ENTIAL LOG
de Sec. 13752

feet North,

feet West from S. E. corner
of Section

REMARKS

measurable

FIDENCIAL
TOL-1, Water Code

12-12 19 63

report is true to the best of

(Typed or printed)

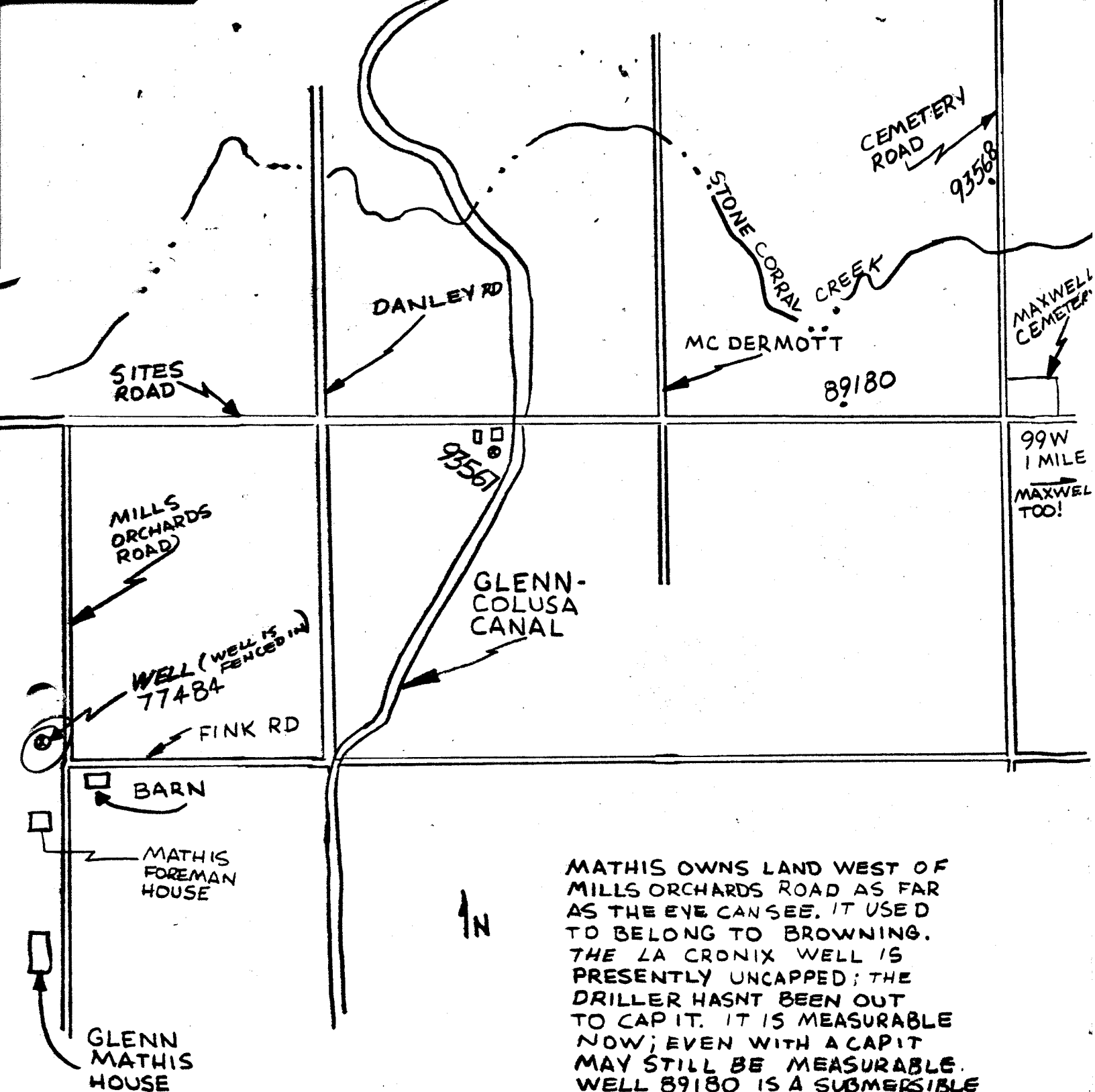
Sam
Field Checked by

8-14-74

Date

IA

13, 19 64



MATHIS OWNS LAND WEST OF MILLS ORCHARDS ROAD AS FAR AS THE EYE CAN SEE. IT USED TO BELONG TO BROWNING. THE LA CRONIX WELL IS PRESENTLY UNCAPPED; THE DRILLER HASN'T BEEN OUT TO CAP IT. IT IS MEASURABLE NOW; EVEN WITH A CAP IT MAY STILL BE MEASURABLE. WELL 89180 IS A SUBMERSIBLE LOCATED BEHIND THE LARGE BRICK HOUSE SURROUNDED BY RICE FIELDS.

Sam
Field Checked by
8-14-74
Date

(Typed or printed)

IA

13, 19 64

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

- WELI. OWNER

[illegible]

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL				
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)	
415	425		10-3/4	✓			PVC	2.5	SCH 80	.030	366	475			✓	SRI#8 Sand
425	445		10-3/4	✓			PVC	2.5	SCH 80		475	510		✓		Bentonite Seal
Zone	4										510	696	✓			Sand Slurry
0	770		14/10/8	✓			PVC	2.5	SCH 80		696	702		✓		Bentonite Seal
770	780		8-3/4		✓		PVC	2.5	SCH 80	.030	702	828			✓	SRI#8 Sand
780	790		8-3/4	✓			PVC	2.5	SCH 80		828	836		✓		Bentonite Seal

ATTACHMENTS (✓)

- ☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

WOODLAND

CA

95695

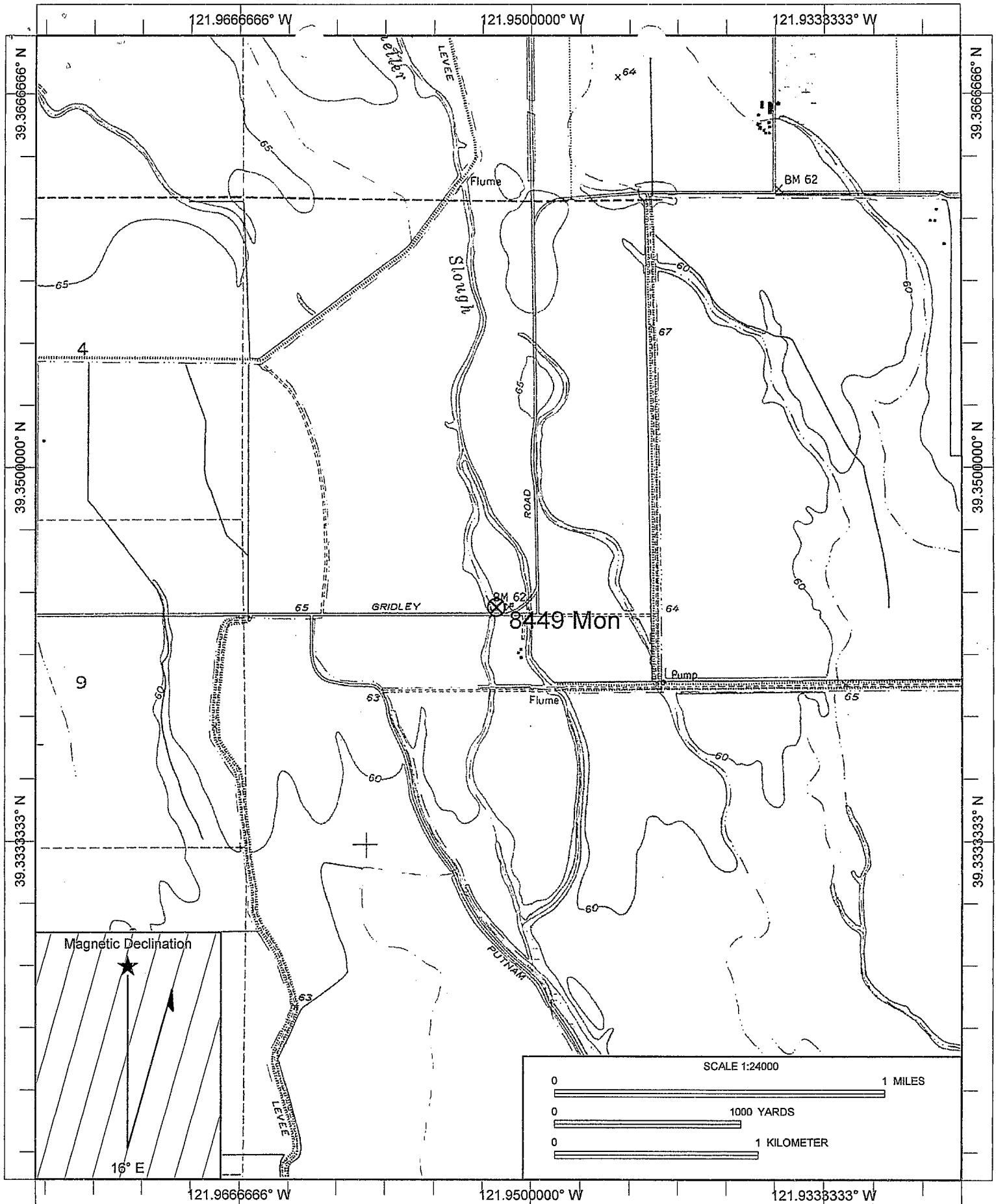
ADDRESS

Mark E. Dameron
WELL DRILLER/AUTHORIZED REPRESENTATIVE

04/28/10
DATE SIGNED

STATE

C57 A HIC - 13378
C-57 LICENSE NUMBER



Name: SANBORN SLOUGH
 Date: 2/17/2010
 Scale: 1 inch equals 2000 feet

Caption: DWR (RD 1004) - Job# 8449 Mon
 APN: 012-180-045
 T17N R1W s10

RD. 1004 - Morgan Levee
Mon. well

17N 01W 27 A1-3 M

ORIGINAL
File with DWR

Page 1 of 3

Owner's Well No. 8515

Date Work Began 12/6/2010, Ended 12/9/2010

Local Permit Agency Colusa County Health Dept

Permit No. WP0000111

Permit Date 11/19/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. E0122768

ABC

DWR USE ONLY -- DO NOT FILL IN	
17N 01W 27	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE

Fl. to Fl.

DESCRIPTION

Describe material, grain, size, color, etc.

0	10	Top soil
10	60	Yellow brown clay with sand and gravel
60	125	Yellow brown clay with sand streaks
125	145	Blue gray clay
145	190	Sand and gravel
190	230	Gray clay with sand streaks
230	290	Sand and gravel
290	800	Gray clay with sand streaks
800	1500	Brittle gray clay with sand streaks

Address 2.94 Mi Sof Gridley Rd & 1.57 Mi Wof

City Putnam Rd CA

County COLUSA

APN Book 012 Page 280 Parcel 003

Township 17 N Range 1 W Section 27

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen☐ Other (Specify)☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public☐ Irrigation ☐ IndustrialMONITORING ☒TEST WELL ☐CATHODIC PROTECTION ☐HEAT EXCHANGE ☐DIRECT PUSH ☐INJECTION ☐VAPOR EXTRACTION ☐SPARGING ☐REMEDIATION ☐OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Fl.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Fl.) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Fl.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 1500 (Feet)

TOTAL DEPTH OF COMPLETED WELL 530 (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL						
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE			
Fl.	to	Ft.	BLANK	SCREEN	CON-DUCTOR	FILL PIPE									Fl.	to	Ft.	CE-MENT (✓)
Zone 1														0	122	✓		Sand Slurry
	0	160	12	✓				PVC	2.5	SCH 80				122	136		✓	Bentonite Seal
	160	170	12		✓			PVC	2.5	SCH 80				136	203		✓	SRI#8 Sand
	170	180	12	✓				PVC	2.5	SCH 80				203	212		✓	Bentonite Seal
Zone 2														212	285		✓	SRI#8 Sand
	0	260	12	✓				PVC	2.5	SCH 80				285	290		✓	Bentonite Seal

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. Kentucky Ave

ADDRESS

Woodland

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

12/22/10

DATE SIGNED

C57 A 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 3

Owner's Well No. 8515

Date Work Began 12/6/2010, Ended 12/9/2010

Local Permit Agency Colusa County Health Dept

Permit No. WP0000111 Permit Date 11/19/2010

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E0122768**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)	
DRILLING METHOD ROTARY FLUID MUD	
DEPTH FROM SURFACE	
Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 to 10	Top soil
10 to 60	Yellow brown clay with sand and gravel
60 to 125	Yellow brown clay with sand streaks
125 to 145	Blue gray clay
145 to 190	Sand and gravel
190 to 230	Gray clay with sand streaks
230 to 290	Sand and gravel
290 to 800	Gray clay with sand streaks
800 to 1500	Brittle gray clay with sand streaks

Address 2.94 Mi S of Gridley Rd & 1.57 Mi W of

City Putnam Rd CA

County COLUSA

APN Book 012 Page 280 Parcel 003

Township 17 N Range 1 W Section 27

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (FL) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (FL) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (FL)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 1500 (Feet)

TOTAL DEPTH OF COMPLETED WELL 530 (Feet)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		
500 to 510	8.5	✓				PVC	2.5
510 to 530	8.5	✓				PVC	2.5

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
599 to 1500	✓	✓	✓	Sand Slurry

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. Kentucky Ave

ADDRESS

Woodland

CITY

CA

STATE

95695

ZIP

Signed

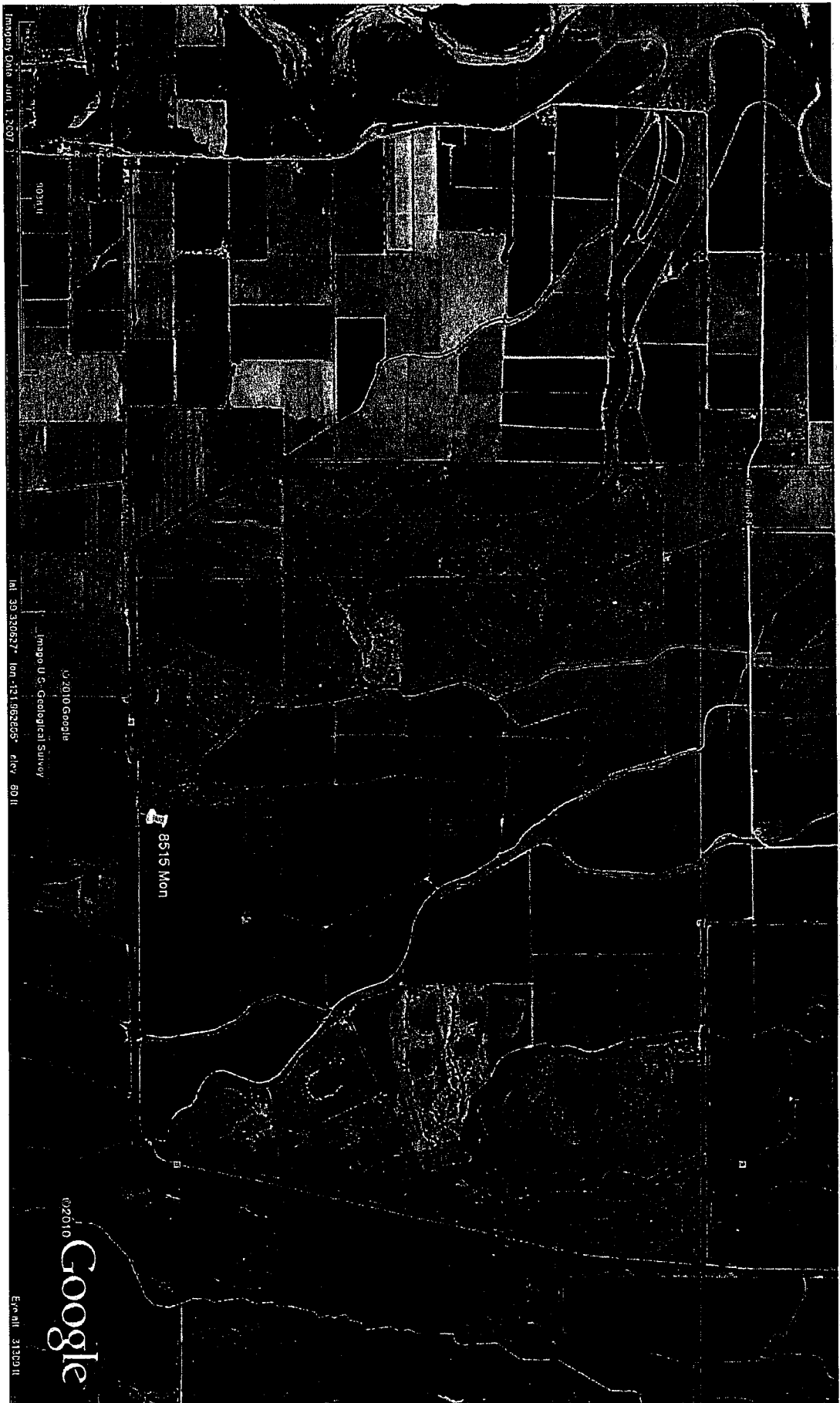
WELL DRILLER/AUTHORIZED REPRESENTATIVE

12/22/10

DATE SIGNED

C57 A 133783

C-57 LICENSE NUMBER



Imagery Date: Jun 1, 2007

903411

Imagery Date: Jun 1, 2007

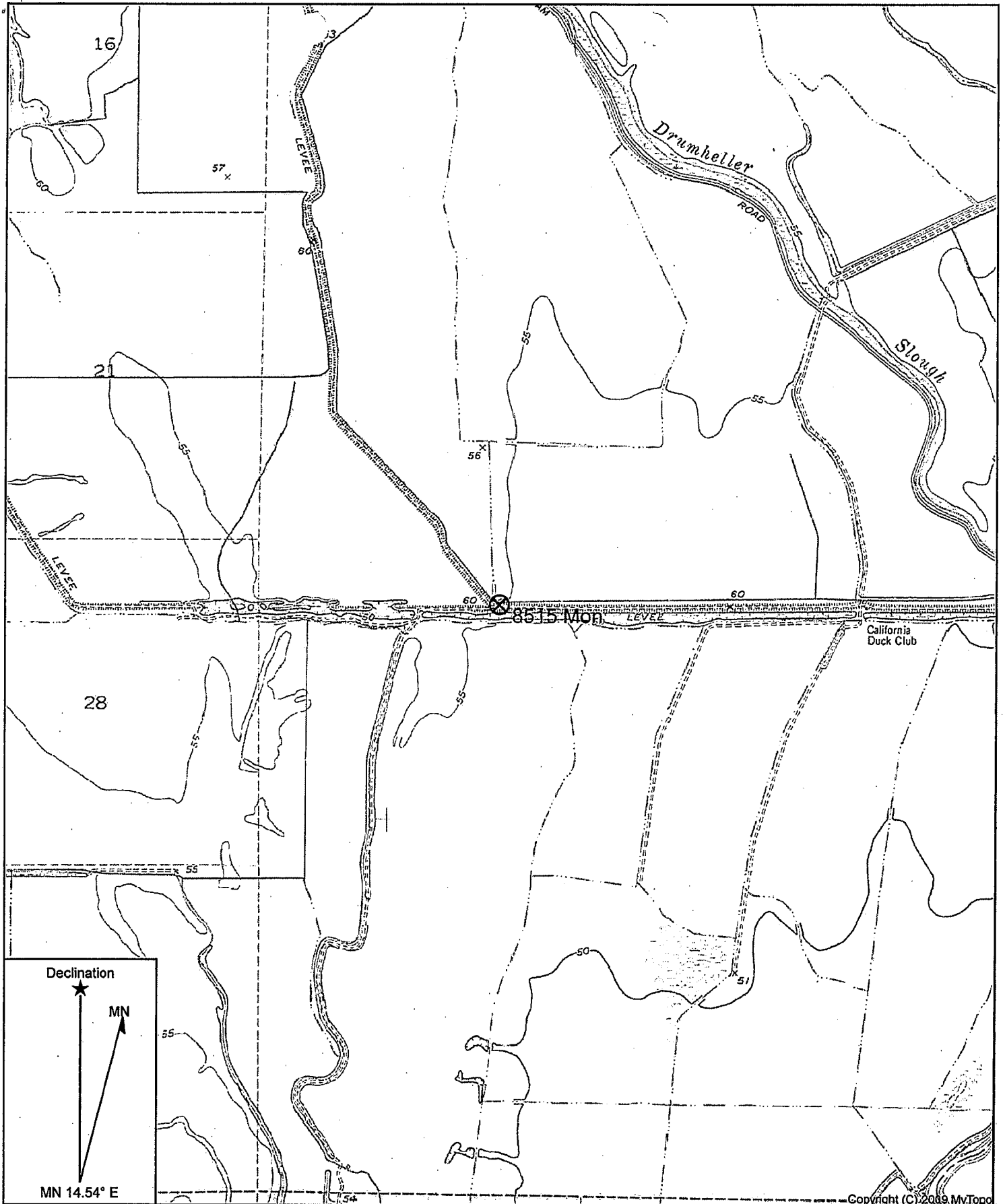
Imagery Date: Jun 1, 2007

© 2010 Google

8515 Mon

©2010 Google

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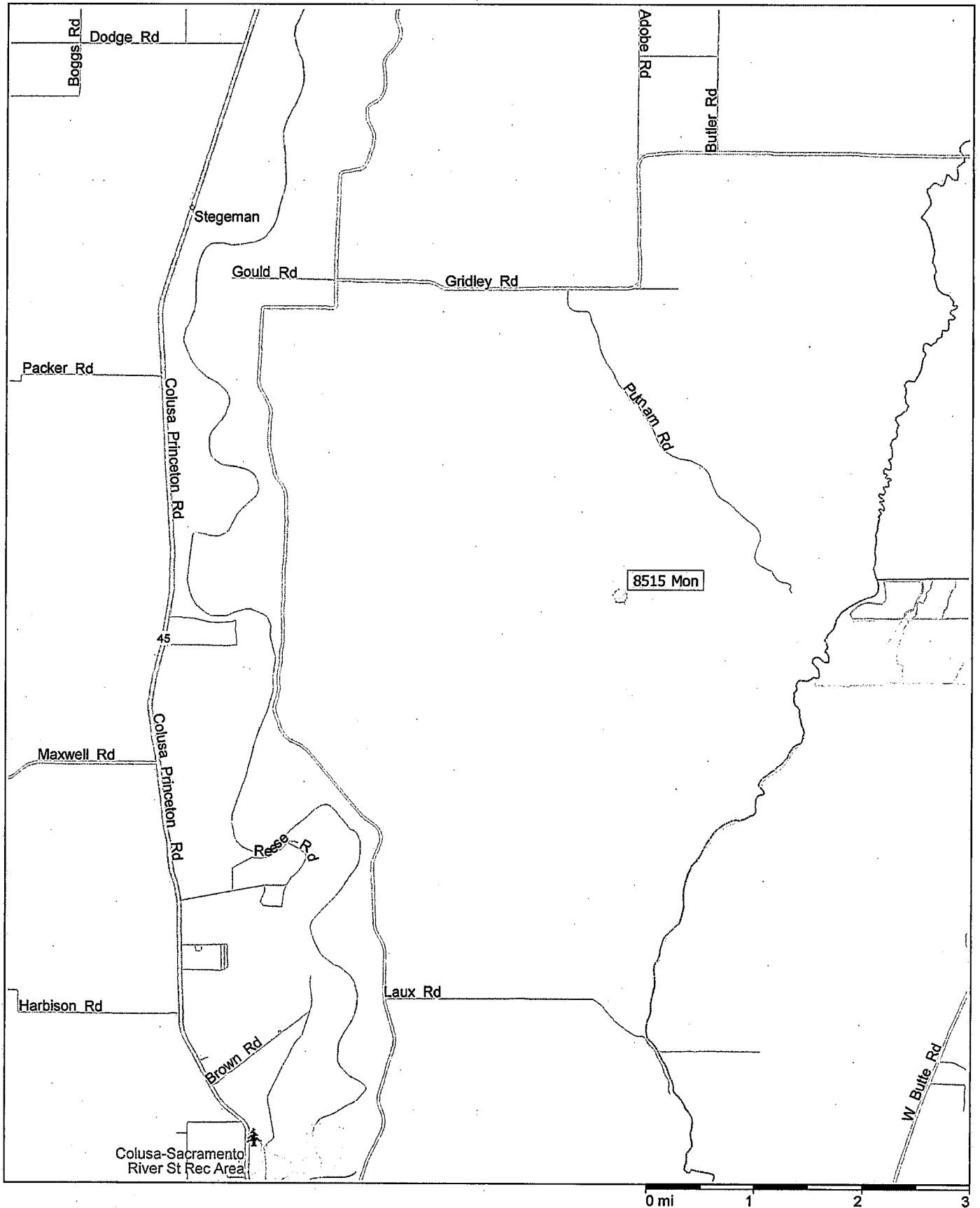


Copyright (C) 2009 MyTopo

Name: SANBORN SLOUGH
 Date: 11/18/10
 Scale: 1 inch = 2,000 ft.

Location: 039.3010000° N 121.9530600° W
 DWR (RD 1004) - Job# 8515 Mon
 APN: 012-280-003
 T17N R1W s27

DWR (RD 1004) - Job# 8515 Mon



ORIGINAL
File with DWR

Page 1 of 6

Owner's Well No. 7548

Date Work Began 9/12/2003, Ended 9/22/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT

Permit No. 2003-78

Permit Date 6/3/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 726866 A,B,C

DWR USE ONLY -- DO NOT FILL IN

17 N/02 W-09 M

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓)		✓ VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DRILLING METHOD REVERSE FLUID WATER			
Ft. to Ft.		DESCRIPTION			
		Describe material, grain, size, color, etc.			
0	25	OLIVE GRAY CLAY			
25	38	GRAVEL AND SAND			
38	61	YELLOW BROWN CLAY			
61	76	SAND			
76	231	BROWN CLAY			
231	272	GRAVEL			
272	320	BROWN SAND			
320	334	GRAVEL			
334	406	OLIVE GRAY CLAY			
406	426	YELLOW BROWN CLAY			
426	441	OLIVE GRAY CLAY			
441	470	SAND			
470	496	GRAVEL			
496	506	BROWN SAND			
506	526	OLIVE GRAY CLAY			
526	544	GRAVEL			
544	618	OLIVE GRAY CLAY			
618	661	GRAVEL WITH SAND			
661	688	OLIVE GRAY CLAY			
688	736	GRAVEL AND SAND			
736	746	DARK GRAY CLAY			
746	752	GRAVEL			
752	775	GREENISH BLACK CLAY			
775	785	SAND			
785	801	GRAVEL AND SAND			
801	822	BLACK AND GRAY SAND			
822	836	GREENISH GRAY CLAY			
836	846	SAND			
846	866	GREENISH GRAY CLAY			
866	880	CLAYEY GRAVEL WITH SAND			

TOTAL DEPTH OF BORING 940 (Feet)

TOTAL DEPTH OF COMPLETED WELL 863 (Feet)

Address NOF PACKER RD & WOF HWY 45

City CA

County COLUSA

APN Book 012 Page 160 Parcel 170

Township 17 N Range 2 W Section 9

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

✓ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public Irrigation Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY) ✓

EXTENSOMETER

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE			ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)				GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE			CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)			FILTER PACK (TYPE/SIZE)	
ZONE:		1														
0:	250	36/18	✓				PVC	2-1/2	SCH 80			0	20	✓	SAND SLURRY	
250:	260	18		✓			PVC	2-1/2		.02		0	190		BENTONITE/LI	
260:	280	18	✓				PVC	2-1/2	SCH 80			190	302		#8 GRD SAND	
ZONE:		2										302	438		BENTONITE/LI	
0:	779	36/18	✓				ASTM-135	4				438	578		#8 GRD SAND	
												578	749		BENTONITE/LI	

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

09/29/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 6

Owner's Well No. 7548

Date Work Began 9/12/2003, Ended 9/22/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT

Permit No. 2003-78

Permit Date 6/3/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **726866**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
DRILLING METHOD **REVERSE** FLUID **WATER**

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
880	899	GRAY BROWN SAND
899	940	OLIVE GRAY CLAY

Address **NOF PACKER RD & WOF HWY 45**

City **CA**

County **COLUSA**

APN Book **012** Page **160** Parcel **170**

Township **17 N** Range **2 W** Section **9**

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☐

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☒

EXTENSOMETER

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING **940** (Feet)

TOTAL DEPTH OF COMPLETED WELL **863** (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE			ANNULAR MATERIAL						
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS				SLOT SIZE IF ANY (Inches)	TYPE					
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE										Ft.	to	Ft.	CE- MENT (✓)	BEN- TONITE (✓)
779		800	18		✓			MILL SLOT	4			.060			749		806		✓	#8 GRD SAND
800		863	18	✓				ASTM-135	4						806		940	✓		SAND SLURRY
ZONE 3																				
0		460	36/18	✓				PVC	2-1/2	SCH 80										
460		470	18		✓			PVC	2-1/2			.020								
470		510	18	✓				PVC	2-1/2	SCH 80										

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

Mark Damore
WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/29/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 6

Owner's Well No. 7548

Date Work Began 9/12/2003, Ended 9/22/2003

Local Permit Agency COLUSA COUNTY HEALTH DEPT

Permit No. 2003-78

Permit Date 6/3/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **726866**

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.									
LATITUDE					LONGITUDE				
APN/TRS/OTHER									

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)		DRILLING METHOD	FLUID
		REVERSE	WATER
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	25	OLIVE GRAY CLAY	
25	38	GRAVEL AND SAND	
38	61	YELLOW BROWN CLAY	
61	76	SAND	
76	231	BROWN CLAY	
231	272	GRAVEL	
272	320	BROWN SAND	
320	334	GRAVEL	
334	406	OLIVE GRAY CLAY	
406	426	YELLOW BROWN CLAY	
426	441	OLIVE GRAY CLAY	
441	470	SAND	
470	496	GRAVEL	
496	506	BROWN SAND	
506	526	OLIVE GRAY CLAY	
526	544	GRAVEL	
544	618	OLIVE GRAY CLAY	
618	661	GRAVEL WITH SAND	
661	688	OLIVE GRAY CLAY	
688	736	GRAVEL AND SAND	
736	746	DARK GRAY CLAY	
746	752	GRAVEL	
752	775	GREENISH BLACK CLAY	
775	785	SAND	
785	801	GRAVEL AND SAND	
801	822	BLACK AND GRAY SAND	
822	836	GREENISH GRAY CLAY	
836	846	SAND	
846	866	GREENISH GRAY CLAY	
866	880	CLAYEY GRAVEL WITH SAND	

TOTAL DEPTH OF BORING 940 (Feet)

TOTAL DEPTH OF COMPLETED WELL 863 (Feet)

Address NOF PACKER RD & WOF HWY 45

City CA

County COLUSA

APN Book 012 Page 160 Parcel 170

Township 17 N Range 2 W Section 9

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☐

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☒

EXTENSOMETER

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft.	to Ft.	BLANK	SCREEN	CON-DUCTOR	FILL PIPE					
510	520	18		✓			PVC	2-1/2		.020
520	540	18	✓				PVC	2-1/2	SCH 80	

DEPTH FROM SURFACE		ANNULAR MATERIAL			
		TYPE			
Ft.	to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	✓			SAND SLURRY
0	190		✓		BENTONITE/LI
190	302			✓	#8 GRD SAND
302	438		✓		BENTONITE/LI
438	578			✓	#8 GRD SAND
578	749		✓		BENTONITE/LI

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

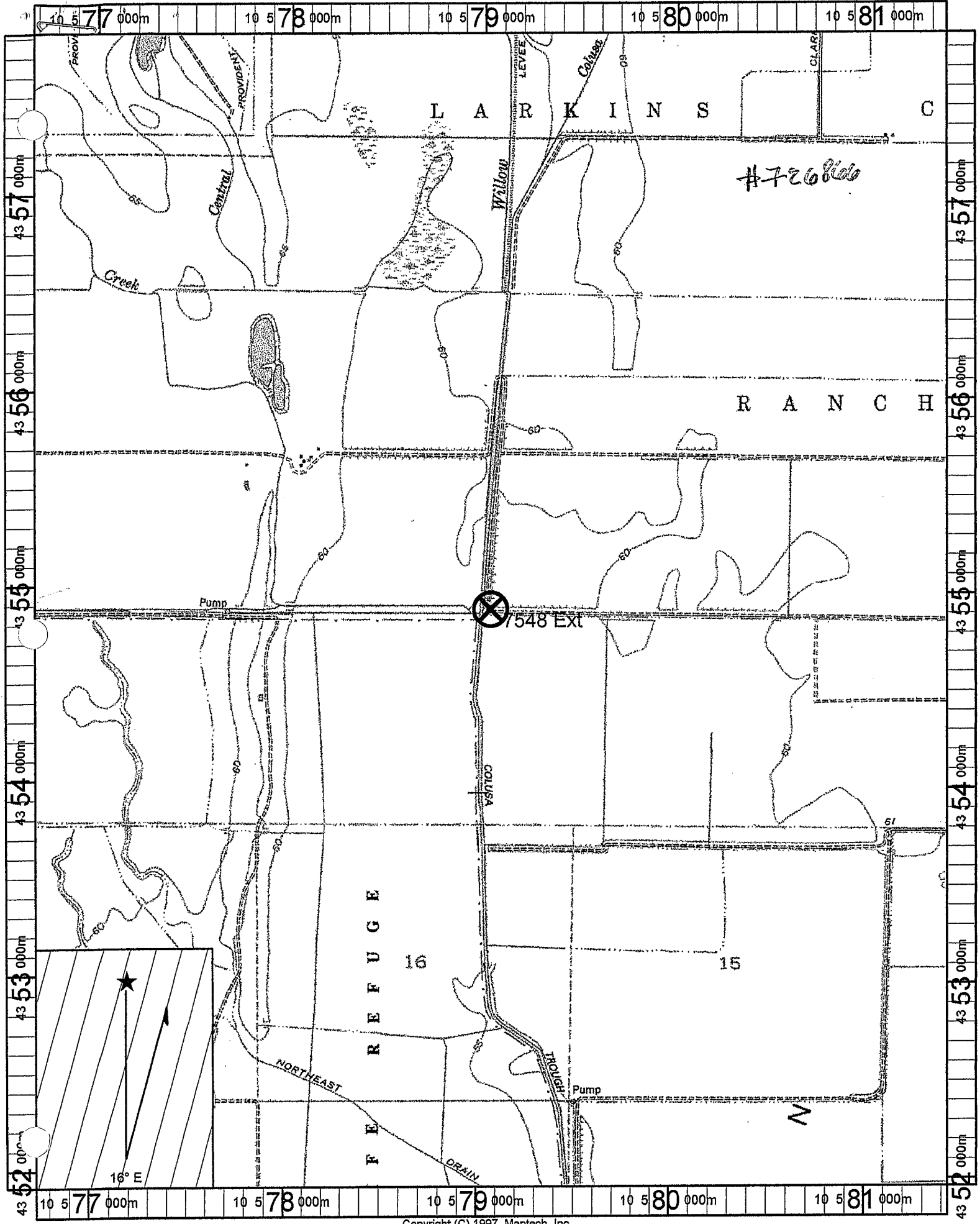
WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/29/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER



ORIGINAL

File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTIONCONTROL BOARD No. 5

(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED

Do Not Fill In

Nº 57983

State Well No.

Other Well No. 1712

(2) LOCATION OF WELL:

County Colusa Owner's number, if any— Well #1R. F. D. or Street No. R.F.D.3 miles east & 1 mile north of
Maxwell, Calif.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☐Cable ☒Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐From 0 ft. to 159 ft. 6 Diam. 3/16 Gage or Wall

If gravel packed

Diameter of Bore from ft. to ft.

Type and size of shoe or well ring 3/8x4x6Describe joint welded

Size of gravel:

(7) PERFORATIONS:

Type of perforator used torchSize of perforations 4 in., length, by 16 in.From 127 ft. to 159 ft. Perf. per row Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☒ No To what depth ft.Were any strata sealed against pollution? ☐ Yes ☒ No If yes, note depth of strata

From ft. to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found 20 ft.

...ing level before perforating ft.

...ing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ NoWas electric log made of well? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 182 ft. Depth of completed well 182 ft.

Formation: Describe by color, character, size of material, and structure.

ft. to	ft.	Formation
0	39	yellow clay
39	60	sand
60	177	yellow clay
177	181	sand
181		gravel

CONFIDENTIAL
Section 7076.1, Water CodePlotted and Coded 17N/2W-30K80 (1974)As Well 17N/2W-30K80

Plotted and Coded (1973)

As Well 17N/3W-36A80Work started 4/5/ 19 60 Completed 4/8/ 19 60

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME L.C. Parkison Drilling Co.

(Person, firm, or corporation)

(Typed or printed)

Address XXX Box 324Butte City, California[SIGNED] Virginia Parkison Owner

Well Driller

License No. 188522Dated 5/30, 1960

State No. 17N-2W-30J ²⁰¹⁴ ²⁰¹⁵

BRANCH _____

Type of Well: Hydrograph ☐ Key ☐ Index ☐ Semiannual ☐ **G.W.M.P.**
 Location: County Colusa Basin Colusa No. 5-2104
 U.S.G.S. Quad. Maxwell 7 1/2 Quad. No. 178 d

14 Section _____, Twp. _____, Rge. _____
 Description 4 mi. E/O Maxwell on Maxwell Colusa Rd. To Four Mile Rd.
N on 4 mile Rd 1 1/4 mi. To Ranch Rd west. N/W on Ranch Rd. approx.
1/4 mi. To Ranch Headquarters. Well is in P.H. E/O Barn.

Reference Point description Sample Tap on EAST side of P.H.

which is _____ ft. ^{above} _{below} land surface. Ground Elevation _____ ft.

Reference Point Elev. _____ ft. Determined from _____

Well: Use Dom. Condition Depth 182 ft.

Casing, size 6 in., perforations 157' to 159'
Cased To 159'

Measurements By: DWR ☐ USGS ☐ USBR ☐ County ☐ Irr. Dist. ☐ Water Dist. ☐ Cons. Dist. ☐

Chief Aquifer: Name _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Type of Material _____ Perm. Rating _____ Thickness _____

Gravel Packed? Yes ☐ No ☒ Depth to Top Gr. _____ Depth to Bot. Gr. _____

App. Aquifer _____ Depth to Top Aq. _____ Depth to Bot. Aq. _____

Driller L. C. Parkinson Drilling Co. Butte City

Date drilled 4-8-60 Log. filed open (1) confidential (2) 57983

Equipment: Pump, type Subm. make Barnes

Serial No. _____ Size of discharge pipe 2 in. { Water Analysis: Min: (1) _____ Son. (2) _____ H.M. (3) _____

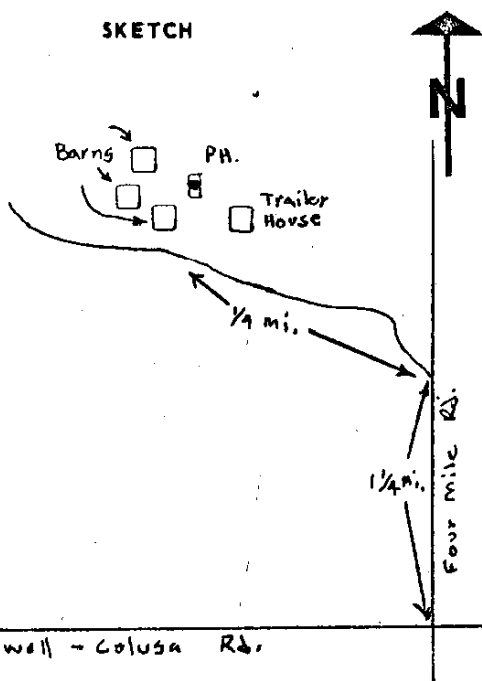
Power, Kind Elec. Make _____ Water Levels available: Yes (1) _____ No _____

H. P. 2 Motor Serial No. 436T200-10 Period of Record: Begin End

Elec. Meter No. 69036 Transformer No. _____

Yield _____ G.P.M. Pumping level _____ ft. Prod. Rec. (1) _____ Pump Test (2) _____ Yield (3) _____

SKETCH



REMARKS

Recorded by: _____
Date: _____

To Maxwell

Maxwell - Colusa Rd.

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

Do Not Fill In

THE RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF WATER RESOURCES

N^o 49451

State Well No. 17N/3W-81
Other Well No. 17N/3W-81

				(11) WELL LOG:			
				Total depth <u>151</u> ft. Depth of completed well <u>151</u> ft.			
				Formation: Describe by color, character, size of material, and structure			
				ft. to ft.			
(2) LOCATION OF WELL:				0' to 6' Top Soil			
County <u>Colusa</u> Owner's number, if any				6' to 14' Yellow Clay			
Township, Range, and Section <u>T17N R3W S8</u>				14' to 30' Sand Yellow Clay			
Distance from cities, roads, railroads, etc. <u>200' North of Lenahan Rd.</u>				30' to 50' Yellow Clay			
				50' to 60' Red Clay			
(3) TYPE OF WORK (check):				60' to 82' Sand Yellow Clay			
New Well <input checked="" type="checkbox"/> Deepening <input type="checkbox"/> Reconditioning <input type="checkbox"/> Destroying <input type="checkbox"/>				82' to 87' Red Clay			
If destruction, describe material and procedure in Item 11.				87' to 94' Sand Red Clay			
(4) PROPOSED USE (check):				94' to 140' Red Clay			
Domestic <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Municipal <input type="checkbox"/>				140' to 147' Sand Red Clay			
Irrigation <input type="checkbox"/> Test Well <input type="checkbox"/> Other <input type="checkbox"/>				147' to 151' Sand & Gravel			
(5) EQUIPMENT:							
Rotary <input type="checkbox"/>							
Cable <input checked="" type="checkbox"/>							
Other <input type="checkbox"/>							
(6) CASING INSTALLED:							
STEEL: OTHER:				If gravel packed			
SINGLE <input checked="" type="checkbox"/> DOUBLE <input type="checkbox"/>							
From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.	
	130	6"	.188				
Size of shoe or well ring: <u>homemade</u>				Size of gravel:			
Describe joint <u>welded</u>							
(7) PERFORATIONS OR SCREEN:				CONFIDENTIAL LOG			
Type of perforation or name of screen <u>torch</u>				Water Code Sec. 13752			
From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.			
125	130		4	4x1/4	Plotted and Coded <u>As Well 17N/3W-81</u>		
					Plotted and Coded		
					As Well <u>17N/3W-8080</u>		
(8) CONSTRUCTION:							
Was a surface sanitary seal provided? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> To what depth <u>151</u> ft.							
Were any strata sealed against pollution? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, note depth of strata							
From ft.	ft. to ft.				Work started <u>3-24</u> 19 <u>72</u> , Completed <u>3-29</u> 19 <u>72</u>		
From ft.	ft. to ft.				WELL DRILLER'S STATEMENT:		
Method of sealing <u>blank casing</u>					This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.		
(9) WATER LEVELS:					NAME <u>Squier Drilling & Pump Service</u>		
Depth at which water was first found, if known <u>20</u> ft.					(Person, firm, or corporation) (Typed or printed)		
Standing level before perforating, if known <u>20</u> ft.					Address <u>P.O. Box 56</u>		
Standing level after perforating and developing <u>20</u> ft.					<u>Butte City, California 95920</u>		
(10) WELL TESTS:					[SIGNED] <u>Justin Squier</u> (Well Driller)		
Was pump test made? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, by whom?					License No. <u>215570</u> Dated <u>April 3</u> , 19 <u>72</u>		
Yield: gal./min. with ft. drawdown after hrs.							
Temperature of water Was a chemical analysis made? Yes <input type="checkbox"/> No <input type="checkbox"/>							
Was electric log made of well? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, attach copy							

SKETCH LOCATION OF WELL ON REVERSE SIDE

WATER WELL DRILLERS REPORT

FIELD WORK SHEET

Report No. 49451 / 1 not

Owner _____

Pump No. 5UB

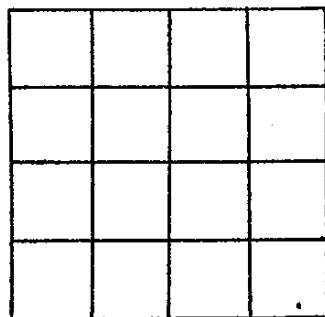
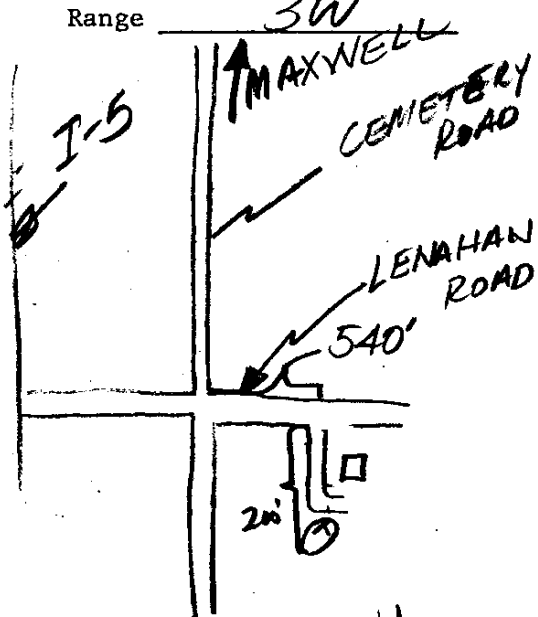
Meter No. —

LOCATION

Section 8R

Township 17N

Range 3W



_____ feet North,
 _____ feet West from S. E. corner
 of Section

REMARKS

well is 540' west of Cemetery & LeNAHAN
measurable and 200' north of LeNAHAN

Sam

Field Checked by

8-12-74

Date

17N/3W-32H

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do Not Fill In

No 93568

State Well No.

Other Well No.

CONFIDENTIAL LOG
Water Code Sec. 13752

(11) WELL LOG:

Total depth 140 ft. Depth of completed well 112 ft.

Formation: Describe by color, character, size of material, and structure

ft. to ft.

0 - 18 - yellow clay

18 - 32 - sand & gravel

32 - 70 - yellow clay

70 - 71 - sand & gravel

71 - 105 - yellow clay

105 - 108 - sand & gravel

108 - 112 - yellow clay

112 - 140 - blue clay

(2) LOCATION OF WELL:

County Calusa Owner's number, if any

Township, Range, and Section

Distance from cities, roads, railroads, etc. 2 mi W. & 3/4 mi N.

of map on Cemetery Road

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐

Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒

Cable ☐

Other ☐

(6) CASING INSTALLED:

STEEL ☒ OTHER ☐
SINGLE ☒ DOUBLE ☐

If gravel packed

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	112	6 5/8	10.8	12	0	140

Size of shoe or well ring:

Size of gravel: 3/4

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen 3/16 x 1 1/2 Punched

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
6.8	7.2		8	3/16 x 1 1/2
10.4	11.2			

CONFIDENTIAL LOG

Water Code Sec. 13752

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 40 ft.

Were any strata sealed against pollution? Yes ☒ No ☐ If yes, note depth of strata

From 0 ft. to 40 ft.

From 0 ft. to 40 ft.

Method of sealing Cement

Plotted and Coded

As Well 17N/3W-32H80

(9) WATER LEVELS:

Depth at which water was first found, if known ft.

Standing level before perforating, if known ft.

Standing level after perforating and developing ft.

(10) WELL TESTS: air jetted approx 200 cfm.

Was pump test made? Yes ☒ No ☐ If yes, by whom?

yield gal./min. with ft. drawdown after hrs.

Temperature of water 68 Was a chemical analysis made? Yes ☐ No ☒

Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Western Well Drilling Co -
(Person, firm, or corporation) (Typed or printed)

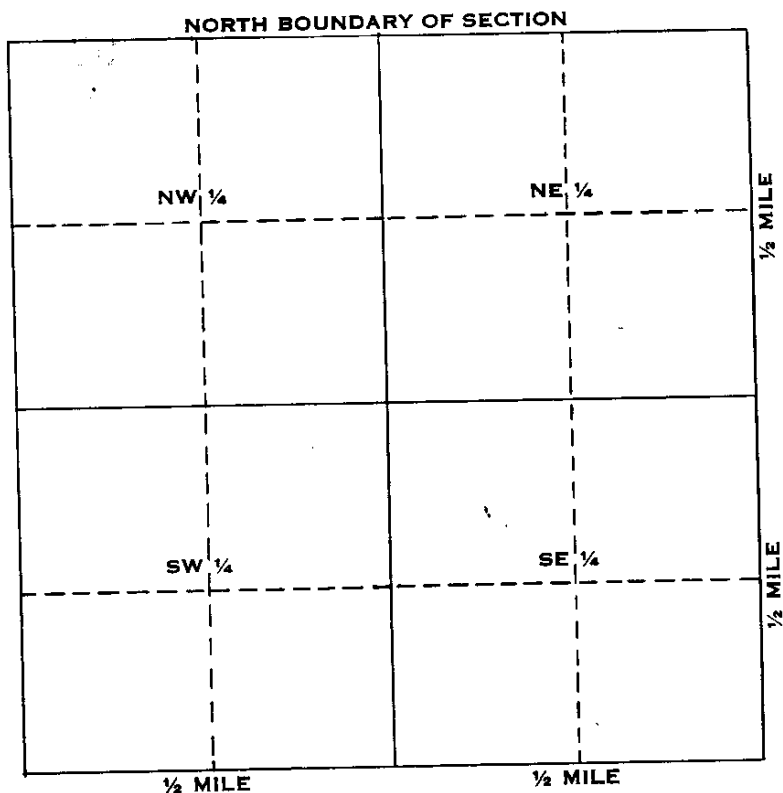
Address P.O. Box 470 Willow

[SIGNED] Ralph J. Smith
(Well Driller)

License No. 195165 Dated 8/6, 1974

SKETCH LOCATION OF WELL ON REVERSE SIDE

WELL LOCATION SKETCH

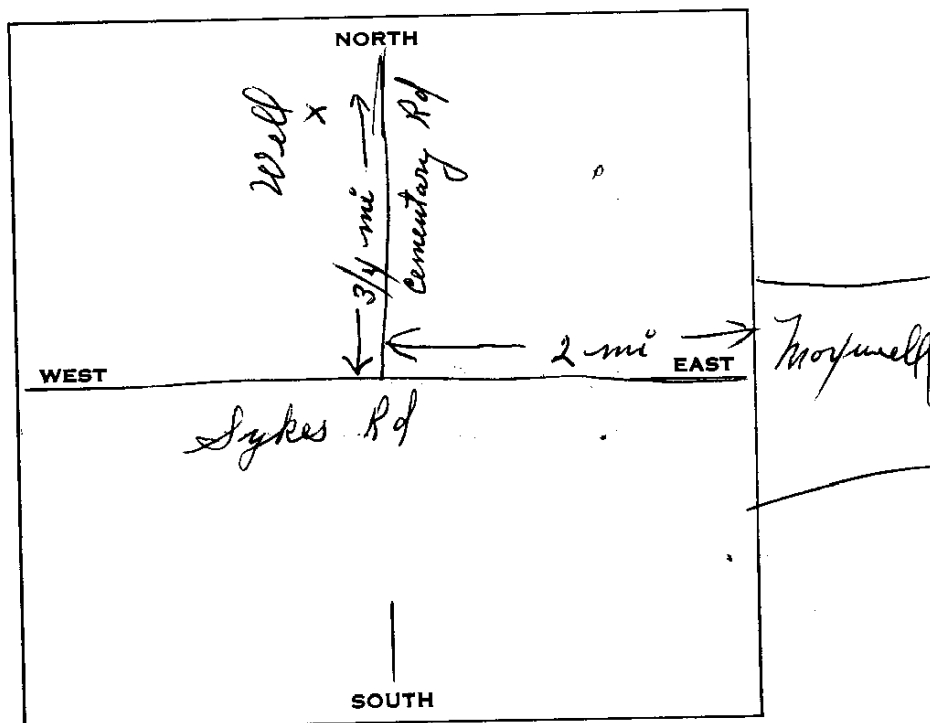


Township _____ N/S

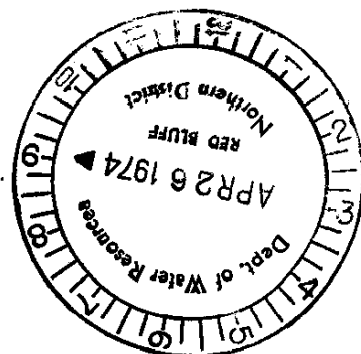
Range _____ E/W

Section No. _____

- A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



- B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.



WATER WELL DRILLERS REPORT

FIELD WORK SHEET

Report No. 93562

Owner

Pump No. SUB

Meter No.

1100 ft by Engle

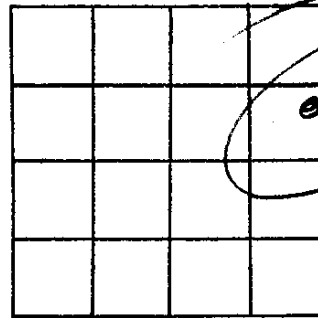
see attached for more location

LOCATION

Section 324

Township 17N

Range 3W



MAXWELL

SIKES RD

MAXWELL CEMETERY

N
↓

STONE CORRAL CREEK

RED BARN

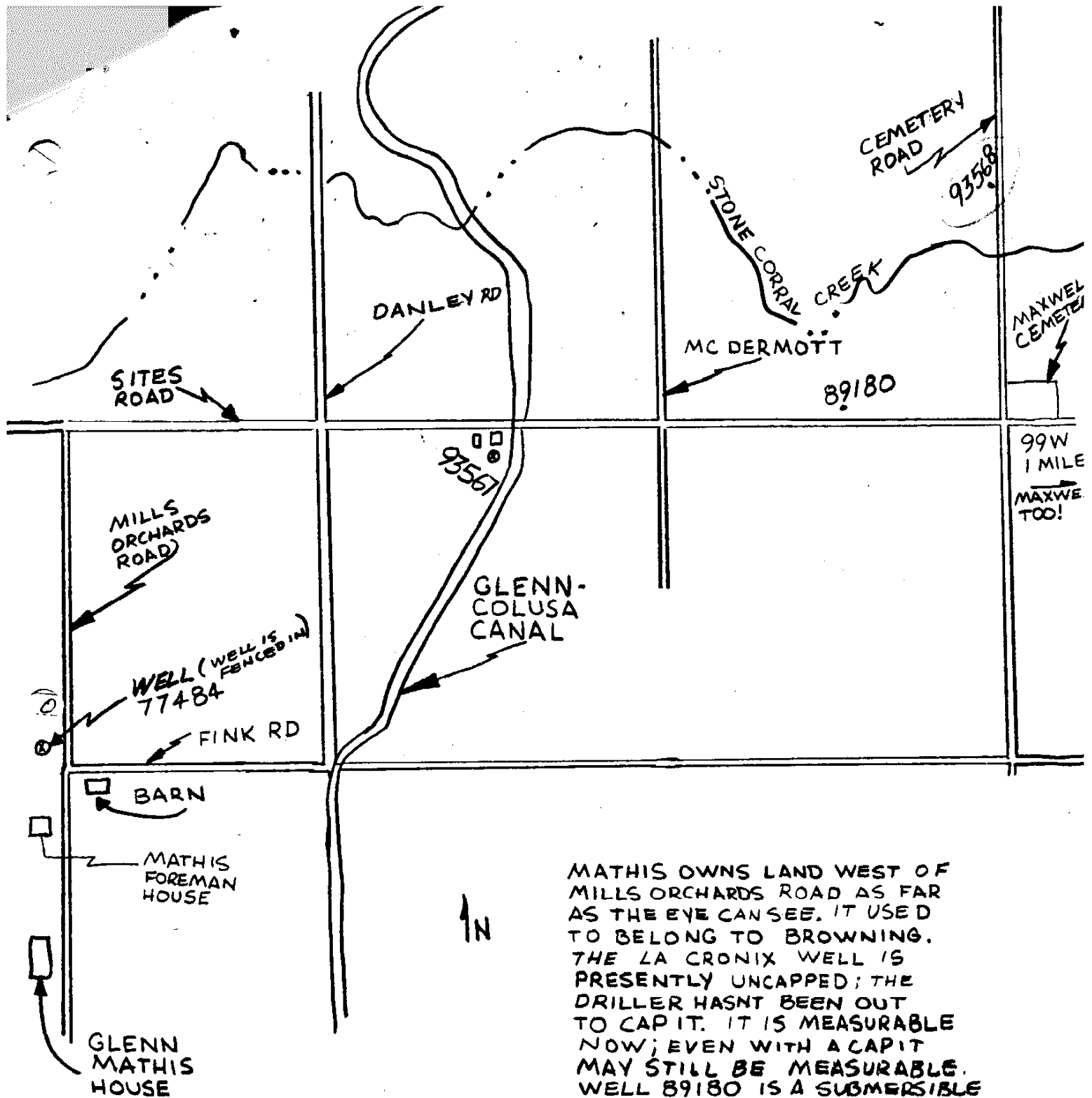
_____ feet North,

_____ feet West from S. E. corner of Section

REMARKS

measurable - the well is on the west side of tin shed (which east of red barn)

Sam
Field Checked by
8-12-74



MATHIS OWNS LAND WEST OF MILLS ORCHARDS ROAD AS FAR AS THE EYE CAN SEE. IT USED TO BELONG TO BROWNING. THE LA CRONIX WELL IS PRESENTLY UNCAPPED; THE DRILLER HASNT BEEN OUT TO CAP IT. IT IS MEASURABLE NOW; EVEN WITH A CAP IT MAY STILL BE MEASURABLE. WELL 89180 IS A SUBMERSIBLE LOCATED BEHIND THE LARGE BRICK HOUSE SURROUNDED BY RICE FIELDS.

18N/02W-36M

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 177869

Notice of Intent No. _____

Local _____ at No. or Date _____

State Well No. _____

Other Well No. _____

(2) LOCATION OF WELL (See instructions):

County Colusa Owner's Well Number _____

Well address if different from above _____

Township 18N Range 2W Section 36

Distance from cities, roads, railroads, fences, etc. _____

Extreme Northeast corner of
Section 36

(3) TYPE OF WORK:

New Well ☒ Deepening ☐Reconstruction ☐Reconditioning ☐Horizontal Well ☐Destruction ☐ (Describe
destruction materials and
procedures in Item 12)

(4) PROPOSED USE:

Domestic ☐Irrigation ☒Industrial ☐Tie Well ☐Stock ☐Municipal ☐Other ☐

WELL LOCATION SKETCH

(5) EQUIPMENT:

Rotary ☐Reverse ☐Yes ☐ No ☒ Size _____Cable ☒Air ☐

Diameter of bore _____

Other ☐Bucket ☐

Packed from _____ to _____ ft.

(7) CASING INSTALLED:

Steel ☒Plastic ☐Concrete ☐

(8) PERFORATIONS:

Type of perforation or size of screen _____

From ft.	To ft.	Dia. in.	Cage or Wall	From ft.	To ft.	Slot size
0	234	18	1/4	88	128	4" Mills Knife
230	410	16	8-6A	195	225	4" Mills Knife
				210	340	4" Mills Knife

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☐ No ☒ If yes, to depth _____ ft.Were strata sealed against pollution? Yes ☒ No ☐ Interval _____ ft.Method of sealing Clay Seal

(10) WATER LEVELS:

Depth of first water, if known 40 ft.Standing level after well completion 38 ft.

(11) WELL TESTS:

Was well test made? Yes ☒ No ☐ If yes, by whom? Valley PumpType of test Pump ☒ Bailer ☐ Air lift ☐Depth to water at start of test 38 ft. At end of test 36 ft.Discharge 3400 gal/min after 90 hours Water temperature _____Chemical analysis made? Yes ☐ No ☒ If yes, by whom? _____Was well log made? Yes ☐ No ☒ If yes, attach copy to this report(12) WELL LOG: Total depth 455 ft. Depth of completed well 455 ft.

from ft. to ft. Formation (Describe by color, character, size or material)

0	9	top soil
9	38	Brown clay
38	41	gravel
41	88	Brown clay
88	127	Sand & Gravel
127	196	Blue clay
196	224	River Rock
224	268	Blue clay
268	310	Sand & Gravel
310	446	Blue clay
446	455	Shale & Gravel

DEC 3 1985

Work started Jan 2 1985 Completed Jan 16 1985

WELL DRILLER'S STATEMENT:

00281

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed: [Signature] (Well Driller)NAME Valley Pump motor Works Inc.
(Person, firm, or corporation) (Typed or printed)Address 470 No. Geo. Wash BlvdCity Yuba City CA Zip 95991License No. 256384 Date of this report May 16, 1985

ORIGINAL
File with DWR

Page 1 of 2

Owner's Well No. 7564

Date Work Began 6/23/2003, Ended 7/1/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 161-03

Permit Date 6/23/2003

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726833

ABC

DWR USE ONLY — DO NOT FILL IN

18 N / 01 W - 02 M

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD

ROTARY

FLUID MUD

DEPTH FROM SURFACE

DESCRIPTION

Describe material, grain, size, color, etc.

Ft. to Ft.

0

40

YELLOW/BROWN CLAY

40

140

LOOSE SAND AND GRAVEL WITH MINIMUM

YELLOW CLAY STREAKS

140

150

BROWN CLAY

150

200

GRAY CLAY

200

265

GRAY/BLUE CLAY

265

280

SAND AND GRAVEL WITH GRAY CLAY

280

410

GRAY CLAY WITH SAND

410

425

SAND AND GRAVEL

425

432

GRAY CLAY WITH SAND

432

455

SAND

455

480

SAND AND GRAVEL

480

490

SAND

490

510

GRAY CLAY WITH SAND AND GRAVEL STRKS

510

540

GRAY CLAY WITH SAND

540

555

SAND

555

800

SAND WITH GRAY CLAY STREAKS

Address 1.45 MI S OF HWY 162 & .6 MI W OF C/R 2

City CA

County GLENN

APN Book 013 Page 060 Parcel 050

Township 18 N Range 1 W Section 2

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 760 (Feet)

TOTAL DEPTH OF COMPLETED WELL 739 (Feet)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL		
		TYPE (✓)	TYPE (✓)	TYPE (✓)	TYPE (✓)	MATERIAL / GRADE			CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)
ZONE 1											
0	110	12	✓			PVC	2-1/2	SCH 80			
110	120	12		✓		PVC	2-1/2	SCH 80			
120	130	12	✓			PVC	2-1/2	SCH 80			
ZONE 2											
0	450	12	✓			PVC	2-1/2	SCH 80			
0	60										
60	200										
200	320										
320	492										
492	680										
680	760										

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

07/14/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 2

Owner's Well No. 7564

Date Work Began 6/23/2003, Ended 7/1/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 161-03

Permit Date 6/23/2003

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726833**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)		DRILLING METHOD	FLUID
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	40	YELLOW/BROWN CLAY	
40	140	LOOSE SAND AND GRAVEL WITH MINIMUM YELLOW CLAY STREAKS	
140	150	BROWN CLAY	
150	200	GRAY CLAY	
200	265	GRAY/BLUE CLAY	
265	280	SAND AND GRAVEL WITH GRAY CLAY	
280	410	GRAY CLAY WITH SAND	
410	425	SAND AND GRAVEL	
425	432	GRAY CLAY WITH SAND	
432	455	SAND	
455	480	SAND AND GRAVEL	
480	490	SAND	
490	510	GRAY CLAY WITH SAND AND GRAVEL STRKS	
510	540	GRAY CLAY WITH SAND	
540	555	SAND	
555	800	SAND WITH GRAY CLAY STREAKS	
TOTAL DEPTH OF BORING 760 (Feet)			
TOTAL DEPTH OF COMPLETED WELL 739 (Feet)			

WELL LOCATION		
Address 1.45 MI S OF HWY 162 & .6 MI W OF C/R 2		
City CA		
County GLENN		
APN Book 013	Page 060	Parcel 050
Township 18 N	Range 1 W	Section 2
Latitude		
DEG.	MIN.	SEC.
LOCATION SKETCH		
NORTH		
WEST		
EAST		
SOUTH		
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.		

ACTIVITY (✓)	
<input checked="" type="checkbox"/> NEW WELL	
MODIFICATION/REPAIR	
<input type="checkbox"/> Deepen	
<input type="checkbox"/> Other (Specify)	
<input type="checkbox"/> DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
<input type="checkbox"/> Domestic	<input type="checkbox"/> Public
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Industrial
MONITORING <input checked="" type="checkbox"/>	
TEST WELL <input type="checkbox"/>	
CATHODIC PROTECTION <input type="checkbox"/>	
HEAT EXCHANGE <input type="checkbox"/>	
DIRECT PUSH <input type="checkbox"/>	
INJECTION <input type="checkbox"/>	
VAPOR EXTRACTION <input type="checkbox"/>	
SPARGING <input type="checkbox"/>	
REMEDATION <input type="checkbox"/>	
OTHER (SPECIFY) <input type="checkbox"/>	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER	(Ft.) BELOW SURFACE
DEPTH OF STATIC	
WATER LEVEL	(Ft.) & DATE MEASURED
ESTIMATED YIELD *	(GPM) & TEST TYPE
TEST LENGTH	(Hrs.) TOTAL DRAWDOWN (Ft.)
May not be representative of a well's long-term yield.	

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
Ft. to Ft.		BLANK	SCREEN	CONDUCTOR	FILL PIPE		
450	460	12	✓			PVC	2-1/2
460	470	12	✓			PVC	2-1/2
ZONE	3	12					
0	719	12	✓			PVC	2-1/2
719	729	12	✓			PVC	2-1/2
729	739	12	✓			PVC	2-1/2

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
Ft. to Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

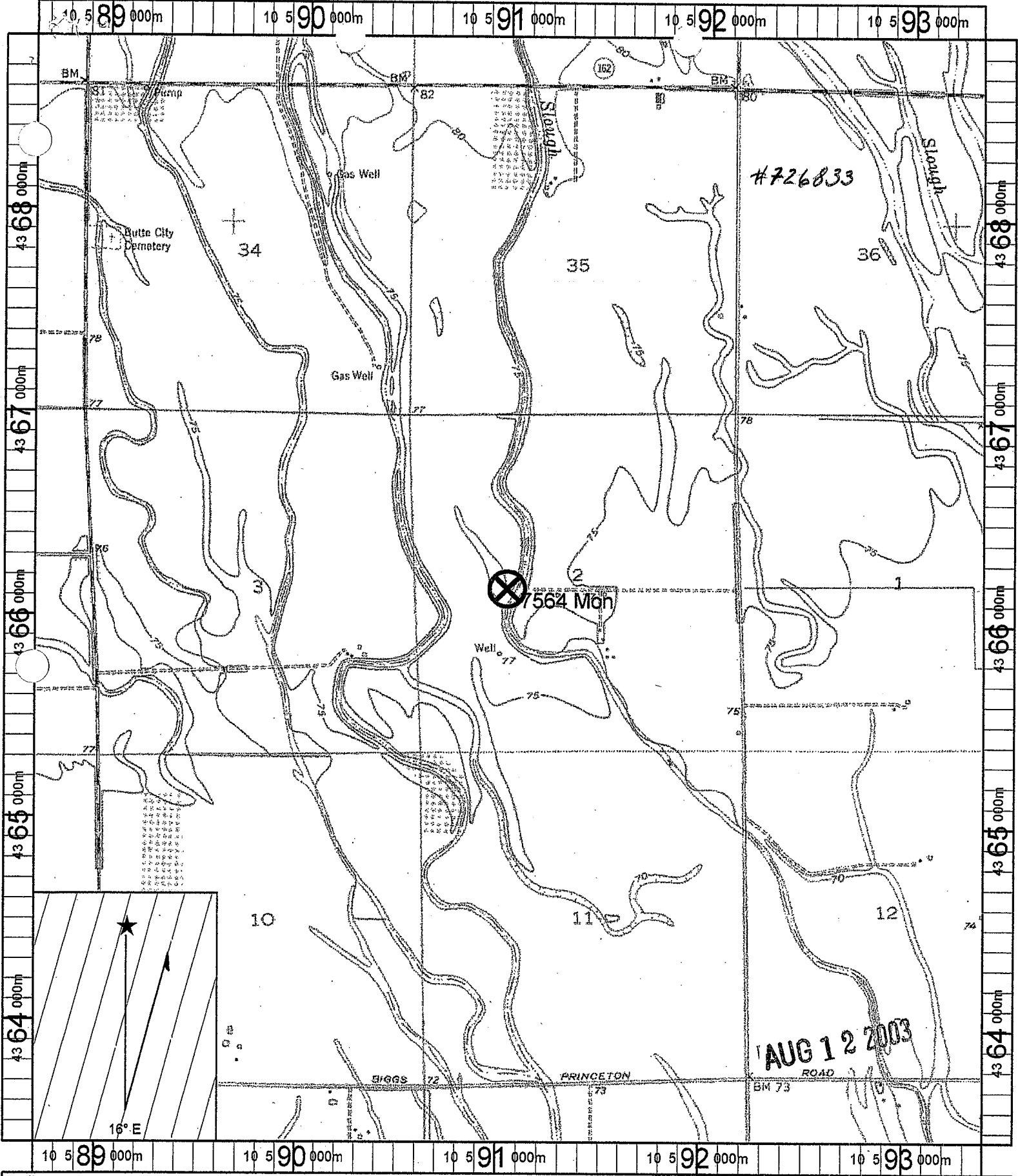
WELL DRILLER/AUTHORIZED REPRESENTATIVE

07/14/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER



Name: BUTTE CITY
Date: 6/23/2003
Scale: 1 inch equals 2000 feet

Caption: Glenn County - Job# 7556 Dom
APN: 013-060-050
T18N R1W s2

ORIGINAL
File with DWR

Page 1 of 12

Owner's Well No. 7986

Date Work Began 9/5/2006, Ended 9/14/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 247-06

Permit Date 6/15/2006

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E045412**

DWR USE ONLY -- DO NOT FILL IN

18N 122W - 18

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 20	DARK BROWN CLAY
20 100	SILTY ORANGE BROWN CLAY
100 170	SILTY YELLOW BROWN CLAY WITH FINE SAND
170 210	TAN CLAY WITH MINIMUM SAND
210 280	BROWN TAN CLAY WITH COARSE SAND
280 400	BROWN TAN CLAY WITH SAND
400 520	SOFT YELLOW BROWN CLAY WITH COARSE SAND
520 700	SAND AND GRAVEL WITH BRITTLE YELLOW BROWN CLAY
700 710	BLUE CLAY WITH SAND AND GRAVEL
710 720	SOFT YELLOW BROWN CLAY WITH SAND AND GRAVEL
720 760	SOFT BLUE GRAY CLAY WITH SAND AND GRAVEL
760 800	SOFT YELLOW CLAY WITH SAND
800 850	SOFT YELLOW CLAY WITH BRITTLE GRAY CLAY AND SAND
850 1025	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL
1025 1040	COARSE SAND
1040 1195	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1000 (Feet)

WELL LOCATION

Address 93 MI NOF RD 68 & 525 E OF NORMAN RD

City CA

County GLENN

APN Book 013 Page 280 Parcel 001

Township 18 N Range 2 W Section 18

Latitude DEG. MIN. SEC. Longitude DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE	ANNULAR MATERIAL			
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)		GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to Ft.	BLANK	SCREEN	CONDUIT	FILL PIPE								
ZONE	1												
0	246	14	✓			PVC F480	2.5	SCH 80		✓			SAND SLURRY
246	256	14		✓		PVC F480	2.5	SCH 80	.030		✓		BENTONITE S
256	266	14	✓			PVC F480	2.5	SCH 80				✓	SRI#8 SAND
ZONE	2												
0	510	14	✓			PVC F480	2.5	SCH 80				✓	SRI#8 SAND
											✓		BENTONITE S

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed *Mark Dameron*

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

10/05/06

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 2 of 12

Owner's Well No. 7986

No. **E045412**

Date Work Began 9/5/2006, Ended 9/14/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 247-06

Permit Date 6/15/2006

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)	
DEPTH FROM SURFACE	DRILLING METHOD <u>ROTARY</u> FLUID <u>MUD</u>
Ft. to Ft.	DESCRIPTION <i>Describe material, grain, size, color, etc.</i>
0	20
20	100
100	170
170	210
210	280
280	400
400	520
520	700
700	710
710	720
720	760
760	800
800	850
850	1025
1025	1040
1040	1195
TOTAL DEPTH OF BORING <u>1200</u> (Feet)	
TOTAL DEPTH OF COMPLETED WELL <u>1000</u> (Feet)	

WELL LOCATION	
Address <u>.93 MI NOF RD 68 & 525 EOF NORMAN RD</u>	
City <u>CA</u>	
County <u>GLENN</u>	
APN Book <u>013</u> Page <u>280</u> Parcel <u>001</u>	
Township <u>18 N</u> Range <u>2 W</u> Section <u>18</u>	
Latitude	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	
WEST	
EAST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
<input checked="" type="checkbox"/> NEW WELL	
MODIFICATION/REPAIR	
<input type="checkbox"/> Deepen	
<input type="checkbox"/> Other (Specify)	
<input type="checkbox"/> DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
<input type="checkbox"/> Domestic <input type="checkbox"/> Public	
<input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial	
MONITORING <input checked="" type="checkbox"/>	
TEST WELL	
CATHODIC PROTECTION	
HEAT EXCHANGE	
DIRECT PUSH	
INJECTION	
VAPOR EXTRACTION	
SPARGING	
REMEDICATION	
OTHER (SPECIFY)	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER	(Ft.) BELOW SURFACE
DEPTH OF STATIC	
WATER LEVEL	(Ft.) & DATE MEASURED
ESTIMATED YIELD *	(GPM) & TEST TYPE
TEST LENGTH	(Hrs.) TOTAL DRAWDOWN (Ft.)
May not be representative of a well's long-term yield.	

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL				
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to	Ft.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE		CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)	
510	520		14	✓			PVC F480	2.5	SCH 80	.030	290	488			✓	SRI#8 SAND
520	530		14	✓			PVC F480	2.5	SCH 80		488	500		✓		BENTONITE S
ZONE 3											500	543			✓	SRI#8 SAND
0	620		14	✓			PVC F480	2.5	SCH 80		543	553		✓		BENTONITE S
620	630		14		✓		PVC F480	2.5	SCH 80	.030	553	598			✓	SRI#8 SAND
630	670		14	✓			PVC F480	2.5	SCH 80		598	608		✓		BENTONITE S

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed Mark Dawson
WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

10/05/06
DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Owner's Well No. **7986**

No. **E045412**

Date Work Began **9/5/2006**, Ended **9/14/2006**

Local Permit Agency **GLENN COUNTY HEALTH DEPT**

Permit No. **MW 247-06** Permit Date **6/15/2006**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE <input type="checkbox"/> (SPECIFY)		DRILLING METHOD ROTARY	FLUID MUD
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	20	DARK BROWN CLAY	
20	100	SILTY ORANGE BROWN CLAY	
100	170	SILTY YELLOW BROWN CLAY WITH FINE SAND	
170	210	TAN CLAY WITH MINIMUM SAND	
210	280	BROWN TAN CLAY WITH COARSE SAND	
280	400	BROWN TAN CLAY WITH SAND	
400	520	SOFT YELLOW BROWN CLAY WITH COARSE SAND	
520	700	SAND AND GRAVEL WITH BRITTLE YELLOW BROWN CLAY	
700	710	BLUE CLAY WITH SAND AND GRAVEL	
710	720	SOFT YELLOW BROWN CLAY WITH SAND AND GRAVEL	
720	760	SOFT BLUE GRAY CLAY WITH SAND AND GRAVEL	
760	800	SOFT YELLOW CLAY WITH SAND	
800	850	SOFT YELLOW CLAY WITH BRITTLE GRAY CLAY AND SAND	
850	1025	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL	
1025	1040	COARSE SAND	
1040	1195	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL STREAKS	
TOTAL DEPTH OF BORING 1200 (Feet)			
TOTAL DEPTH OF COMPLETED WELL 1000 (Feet)			

WELL LOCATION			
Address .93 MI NOF RD 68 & 525 EOF NORMAN RD			
City CA			
County GLENN			
APN Book 013	Page 280	Parcel 001	
Township 18 N	Range 2 W	Section 18	
Latitude		Longitude	
DEG.	MIN.	SEC.	DEG. MIN. SEC.
LOCATION SKETCH		ACTIVITY (✓)	
NORTH		<input checked="" type="checkbox"/> NEW WELL	
WEST		MODIFICATION/REPAIR	
EAST		<input type="checkbox"/> Deepen	
SOUTH		<input type="checkbox"/> Other (Specify)	
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")			
PLANNED USES (✓)			
WATER SUPPLY			
<input type="checkbox"/> Domestic <input type="checkbox"/> Public			
<input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial			
MONITORING <input checked="" type="checkbox"/>			
TEST WELL <input type="checkbox"/>			
CATHODIC PROTECTION <input type="checkbox"/>			
HEAT EXCHANGE <input type="checkbox"/>			
DIRECT PUSH <input type="checkbox"/>			
INJECTION <input type="checkbox"/>			
VAPOR EXTRACTION <input type="checkbox"/>			
SPARGING <input type="checkbox"/>			
REMEDICATION <input type="checkbox"/>			
OTHER (SPECIFY) <input type="checkbox"/>			
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.			

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL				
				TYPE (✓)				MATERIAL / GRADE			INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)				FILL (✓)	FILTER PACK (TYPE/SIZE)
670	680	14		✓			PVC F480	2.5	SCH 80	.030	608	693		✓	SRI#8 SAND
680	700	14	✓				PVC F480	2.5	SCH 80		693	716		✓	BENTONITE S
ZONE		4									716	930		✓	SRI#8 SAND
0	975	14/8-3/4	✓				PVC F480	2.5	SCH 80		930	944		✓	BENTONITE S
975	985	8-3/4		✓			PVC F480	2.5	SCH 80	.030	944	996		✓	SRI#8 SAND
985	1000	8-3/4	✓				PVC F480	2.5	SCH 80		996	1002		✓	BENTONITE S

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

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(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

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WOODLAND

CA 95695

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Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

10/05/06

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E045412**

Owner's Well No. 7986

Date Work Began 9/5/2006, Ended 9/14/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 247-06 Permit Date 6/15/2006

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG		
ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)		
DRILLING METHOD <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> FLUID MUD		
DEPTH FROM SURFACE		DESCRIPTION
Ft. to Ft.		Describe material, grain, size, color, etc.
0	20	DARK BROWN CLAY
20	100	SILTY ORANGE BROWN CLAY
100	170	SILTY YELLOW BROWN CLAY WITH FINE SAND
170	210	TAN CLAY WITH MINIMUM SAND
210	280	BROWN TAN CLAY WITH COARSE SAND
280	400	BROWN TAN CLAY WITH SAND
400	520	SOFT YELLOW BROWN CLAY WITH COARSE SAND
520	700	SAND AND GRAVEL WITH BRITTLE YELLOW BROWN CLAY
700	710	BLUE CLAY WITH SAND AND GRAVEL
710	720	SOFT YELLOW BROWN CLAY WITH SAND AND GRAVEL
720	760	SOFT BLUE GRAY CLAY WITH SAND AND GRAVEL
760	800	SOFT YELLOW CLAY WITH SAND
800	850	SOFT YELLOW CLAY WITH BRITTLE GRAY CLAY AND SAND
850	1025	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL
1025	1040	COARSE SAND
1040	1195	BRITTLE GRAY BROWN CLAY WITH SAND AND GRAVEL STREAKS
TOTAL DEPTH OF BORING 1200 (Feet)		
TOTAL DEPTH OF COMPLETED WELL 1000 (Feet)		

WELL LOCATION	
Address 93 MI NOF RD 68 & 525' EOF NORMAN RD	
City CA	
County GLENN	
APN Book 013 Page 280 Parcel 001	
Township 18 N Range 2 W Section 18	
Latitude	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	
WEST	
EAST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
<input checked="" type="checkbox"/> NEW WELL	
MODIFICATION/REPAIR	
<input type="checkbox"/> Deepen	
<input type="checkbox"/> Other (Specify)	
DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
<input type="checkbox"/> Domestic <input type="checkbox"/> Public	
<input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial	
MONITORING <input checked="" type="checkbox"/>	
TEST WELL <input type="checkbox"/>	
CATHODIC PROTECTION <input type="checkbox"/>	
HEAT EXCHANGE <input type="checkbox"/>	
DIRECT PUSH <input type="checkbox"/>	
INJECTION <input type="checkbox"/>	
VAPOR EXTRACTION <input type="checkbox"/>	
SPARGING <input type="checkbox"/>	
REMEDATION <input type="checkbox"/>	
OTHER (SPECIFY) <input type="checkbox"/>	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE HOLE DIA. (Inches)	CASING (S)				ANNULAR MATERIAL			
Ft. to Ft.	TYPE (✓)		MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE	TYPE	FILTER PACK (TYPE/SIZE)	
0	246	14	✓		PVC F480	2.5	SCH 80			
246	256	14	✓		PVC F480	2.5	SCH 80			
256	266	14	✓		PVC F480	2.5	SCH 80			
0	510	14	✓		PVC F480	2.5	SCH 80			
1002	1200							✓	NATIVE FILL	

ATTACHMENTS (✓)

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analysis

☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

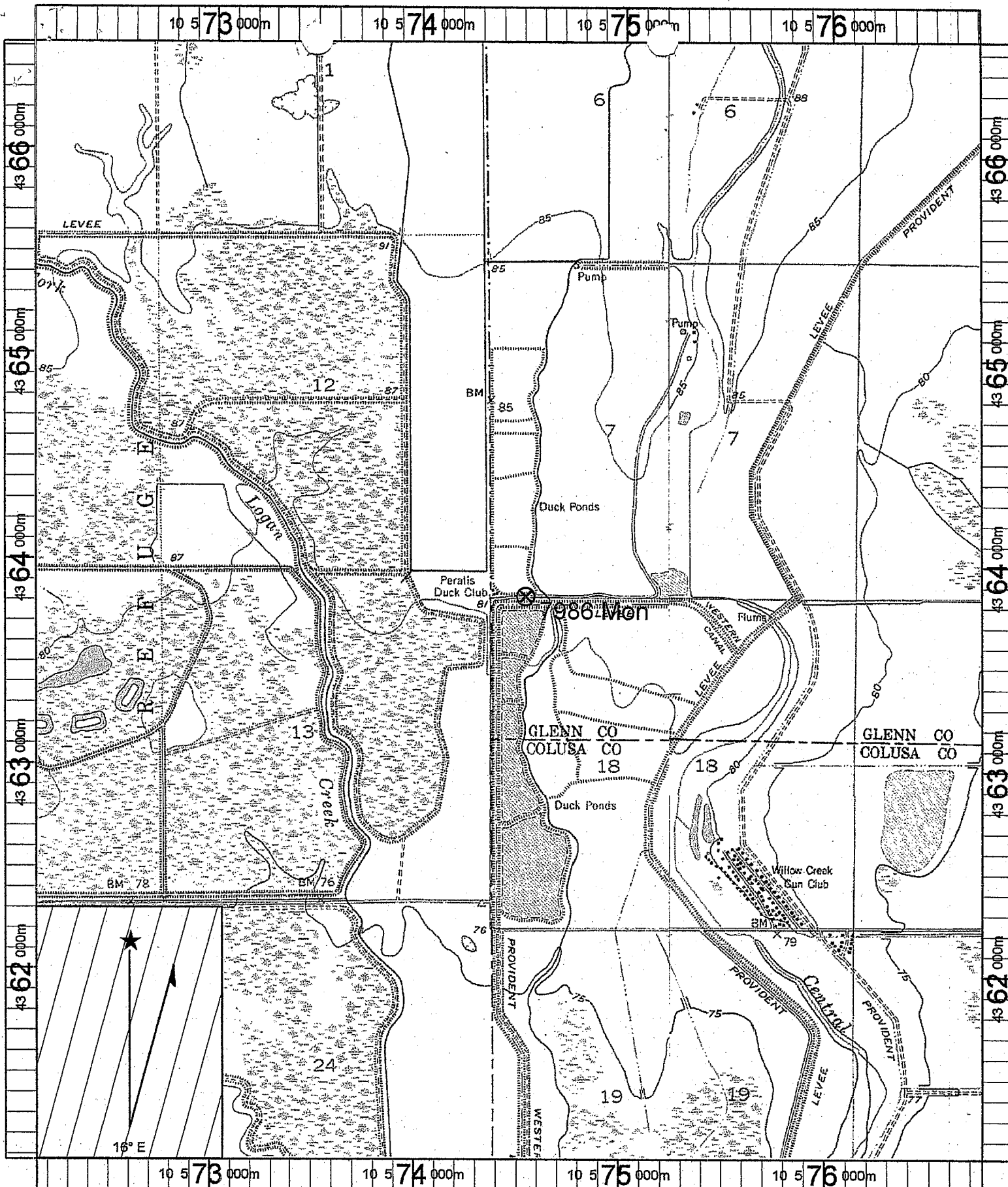
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE WOODLAND CA 95695

ADDRESS CITY STATE ZIP

Signed *Mark D. Dawson* 10/05/06 C57 A HIC - 133783

WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER



Name: LOGANDALE

Date: 6/12/2006

Scale: 1 inch equals 2000 feet

Caption: DWR (GCID) - Job# 7986 Mon

APN: 013-280-001 (103 acres)

T18N R2W s18

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 1 of 6

Owner's Well No. 7842

No. **816274**

Date Work Began 9/26/05, Ended 9/30/05

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW228-05 Permit Date 5/24/05

DWR USE ONLY — DO NOT FILL IN

19N/01W-22

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE ☐ (SPECIFY)

DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE
Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

0	85	BROWN CLAY WITH COARSE SAND
85	107	COARSE SAND AND GRAVEL
107	120	SOFT BROWN CLAY
120	345	GRAY BLUE CLAY AND BLACK SANDSTONE
345	365	COARSE SAND AND FINE GRAVEL
365	545	GRAY BLUE CLAY AND BLACK SANDSTONE
545	780	GRAY BLUE CLAY WITH SAND AND GRAVEL
780	790	BLUE GRAY CLAY WITH SAND AND GRAVEL
790	810	GRAY BLUE SILTY CLAY

TOTAL DEPTH OF BORING 820 (Feet)

TOTAL DEPTH OF COMPLETED WELL 800 (Feet)

WELL LOCATION

Address 780' EOF AFTON BLVD & 1.96 MI NOF HWY 162

City CA

County GLENN

APN Book 015 Page 018 Parcel 003

Township 19 N Range 1 W Section 22

Latitude DEG. MIN. SEC. LONGITUDE DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL
MODIFICATION/REPAIR
☐ Deepen
☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL				
			TYPE (✓)				MATERIAL / GRADE			INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)				FILL (✓)	FILTER PACK (TYPE/SIZE)
ZONE	1													
0	80	14	✓			PVC	2.5	SCH 80				✓		SAND SLURRY
80	90	14		✓		PVC	2.5	SCH 80						SRI#8 SAND
90	100	14	✓			PVC	2.5	SCH 80						SAND SLURRY
ZONE	2													
0	340	14	✓			PVC	2.5	SCH 80					✓	SRI#8 SAND
														SAND SLURRY

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed Mark D. Davison

WELL DRILLER/AUTHORIZED REPRESENTATIVE

11/07/05
DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 6

Owner's Well No. 7842

Date Work Began 9/26/05, Ended 9/30/05

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW228-05

Permit Date 5/24/05

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **816274**

DWR USE ONLY — DO NOT FILL IN	
19N/01W-22	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	85	BROWN CLAY WITH COARSE SAND
85	107	COARSE SAND AND GRAVEL
107	120	SOFT BROWN CLAY
120	345	GRAY BLUE CLAY AND BLACK SANDSTONE
345	365	COARSE SAND AND FINE GRAVEL
365	545	GRAY BLUE CLAY AND BLACK SANDSTONE
545	780	GRAY BLUE CLAY WITH SAND AND GRAVEL
780	790	BLUE GRAY CLAY WITH SAND AND GRAVEL
790	810	GRAY BLUE SILTY CLAY

WELL LOCATION

Address 780' EOF AFTON BLVD & 1.96 MI NOF HWY 162

City CA

County GLENN

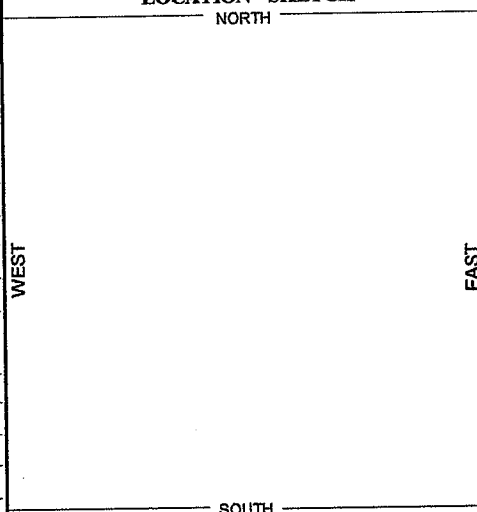
APN Book 015 Page 018 Parcel 003

Township 19 N Range 1 W Section 22

Latitude DEG. MIN. SEC.

LOCATION SKETCH

NORTH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL
MODIFICATION/REPAIR
☐ Deepen
☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 820 (Feet)
TOTAL DEPTH OF COMPLETED WELL 800 (Feet)

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)					ANNULAR MATERIAL							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE				
			BLANK	SCREEN	CON- DUCTOR	FILL PIPE					CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)	
Ft.	to Ft.														
340	350	14		✓			PVC	2.5	SCH 80	.030					
350	360	14	✓				PVC	2.5	SCH 80						
ZONE 3															
0	520	14	✓				PVC	2.5	SCH 80						
520	530	14		✓			PVC	2.5	SCH 80	.030					
530	540	14	✓				PVC	2.5	SCH 80						

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed

Mark D. Davis
WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

11/07/05

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. **816274**

DWR USE ONLY — DO NOT FILL IN

19N/01W-22

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Owner's Well No. **7842**

Date Work Began **9/26/05**, Ended **9/30/05**

Local Permit Agency **GLENN COUNTY HEALTH DEPT**

Permit No. **MW228-05** Permit Date **5/24/05**

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 85	BROWN CLAY WITH COARSE SAND
85 107	COARSE SAND AND GRAVEL
107 120	SOFT BROWN CLAY
120 345	GRAY BLUE CLAY AND BLACK SANDSTONE
345 365	COARSE SAND AND FINE GRAVEL
365 545	GRAY BLUE CLAY AND BLACK SANDSTONE
545 780	GRAY BLUE CLAY WITH SAND AND GRAVEL
780 790	BLUE GRAY CLAY WITH SAND AND GRAVEL
790 810	GRAY BLUE SILTY CLAY

WELL LOCATION

Address **780' EOF AFTON BLVD & 1.96 MI NOF HWY 162**

City **CA**

County **GLENN**

APN Book **015** Page **018** Parcel **003**

Township **19 N** Range **1 W** Section **22**

Latitude DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (FL) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (FL) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (FL)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE		ANNULAR MATERIAL			
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)			GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									CE- MENT (✓)
ZONE	4													
0	780	14	✓			PVC	2.5	SCH 80		✓			SAND SLURRY	
780	790	14	✓			PVC	2.5	SCH 80	.030				SRI#8 SAND	
790	800	14	✓			PVC	2.5	SCH 80		✓			SAND SLURRY	
											✓		BENTONITE C	
												✓	SRI#8 SAND	
										✓			SAND SLURRY	

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed *Mark Davison*

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

11/07/05

DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 1 of 6

Owner's Well No. 7679

Date Work Began 7/19/2004, Ended 7/23/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 206-04

Permit Date 5/3/2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **726952A B**

19N 02W-08
STATE WELL NO./STATION NO.
LATITUDE
LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH FROM SURFACE
Ft. to Ft.
DRILLING METHOD **REVERSE** FLUID **WATER**

DESCRIPTION

Describe material, grain, size, color, etc.

0	68	TAN BROWN CLAY
68	92	SAND AND GRAVEL
92	160	TAN BROWN CLAY
160	202	TAN BROWN SILTY CLAY
202	226	GRAVEL AND SAND
226	240	BLUE CLAY
240	260	TAN BROWN CLAY
260	298	TAN BROWN SILTY CLAY WITH SAND
298	374	TAN BROWN CLAY WITH SAND
374	462	TAN BROWN SILTY CLAY WITH SAND
462	468	GRAVEL
468	556	TAN BROWN CLAY WITH SILTY SAND
556	600	TAN BROWN SILTY CLAY
600	638	SANDSTONE AND CLAYEY SAND
638	776	TAN BROWN SILTY CLAY
776	796	GRAVEL
796	822	LIGHT TAN CLAY
822	826	SANDSTONE
826	856	LIGHT TAN CLAY WITH FINE SAND
856	882	GRAVEL
882	936	TAN BROWN SILTY, CLAYEY FINE SAND
936	965	GRAVEL AND SAND WITH BLUE TAN SILTY CLAY
965	1000	BLUE SILTY SANDY CLAY

TOTAL DEPTH OF BORING 1000 (Feet)

TOTAL DEPTH OF COMPLETED WELL 939.7 (Feet)

WELL LOCATION
Address **SOE HWY 162 & EOF C/R R**
City **CA**
County **GLENN**
APN Book **016** Page **210** Parcel **012**
Township **19 N** Range **2 W** Section **8**
Latitude

DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public
Irrigation Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)
ZONE 1															
0		77	24/18	✓				PVC C200	2.5	SCH 80				✓	SAND SLURRY
77		87	18		✓			PVC C200	2.5	SCH 80					SRI#8 SAND
87		97	18	✓				PVC C200	2.5	SCH 80					BENTONITE S
ZONE 2															
0		208	24/18	✓				PVC C200	2.5	SCH 80				✓	SRI#8 SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

09/16/04

DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 2 of 6

Owner's Well No. 7679

No. **726952**

Date Work Began 7/19/2004, Ended 7/23/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 206-04

Permit Date 5/3/2004

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ☒ REVERSE ☐ FLUID WATER

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 - 68	TAN BROWN CLAY
68 - 92	SAND AND GRAVEL
92 - 160	TAN BROWN CLAY
160 - 202	TAN BROWN SILTY CLAY
202 - 226	GRAVEL AND SAND
226 - 240	BLUE CLAY
240 - 260	TAN BROWN CLAY
260 - 298	TAN BROWN SILTY CLAY WITH SAND
298 - 374	TAN BROWN CLAY WITH SAND
374 - 462	TAN BROWN SILTY CLAY WITH SAND
462 - 468	GRAVEL
468 - 556	TAN BROWN CLAY WITH SILTY SAND
556 - 600	TAN BROWN SILTY CLAY
600 - 638	SANDSTONE AND CLAYEY SAND
638 - 776	TAN BROWN SILTY CLAY
776 - 796	GRAVEL
796 - 822	LIGHT TAN CLAY
822 - 826	SANDSTONE
826 - 856	LIGHT TAN CLAY WITH FINE SAND
856 - 882	GRAVEL
882 - 936	TAN BROWN SILTY, CLAYEY FINE SAND
936 - 965	GRAVEL AND SAND WITH BLUE TAN SILTY CLAY
965 - 1000	BLUE SILTY SANDY CLAY

TOTAL DEPTH OF BORING 1000 (Feet)

TOTAL DEPTH OF COMPLETED WELL 939.7 (Feet)

WELL LOCATION

Address SOF HWY 162 & EOF C/R R

City CA

County GLENN

APN Book 016 Page 210 Parcel 012

Township 19 N Range 2 W Section 8

Latitude DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

ACTIVITY (✓)

☒ NEW WELL

☐ MODIFICATION/REPAIR

Deepen

Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

☐ WATER SUPPLY

Domestic Public

Irrigation Industrial

☒ MONITORING

☐ TEST WELL

☐ CATHODIC PROTECTION

☐ HEAT EXCHANGE

☐ DIRECT PUSH

☐ INJECTION

☐ VAPOR EXTRACTION

☐ SPARGING

☐ REMEDIATION

☐ OTHER (SPECIFY)

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)				ANNULAR MATERIAL			
Ft.	to Ft.		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	FILTER PACK (TYPE/SIZE)	
208	218	18	<input checked="" type="checkbox"/>	PVC C200	2.5	SCH 80	.030			
218	228	18	<input checked="" type="checkbox"/>	PVC C200	2.5	SCH 80				
0	290.6	24/18	<input checked="" type="checkbox"/>	ASTM-135	4	.312				
290.6	299.9	18		COMP SEC						
299.9	720.9	18	<input checked="" type="checkbox"/>	ASTM-135	4	.312				

DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
910	1000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SAND SLURRY

ATTACHMENTS (✓)

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analysis

☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE. WOODLAND CA 95695

ADDRESS CITY STATE ZIP

Signed Mark Damion DATE SIGNED 09/16/04 C57 A HIC - 133783

WELL DRILLER/AUTHORIZED REPRESENTATIVE

C-57 LICENSE NUMBER

Owner's Well No. 7679

Date Work Began 7/19/2004, Ended 7/23/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 206-04

Permit Date 5/3/2004

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726952

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓)		✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)	
DEPTH FROM SURFACE		DRILLING METHOD REVERSE	FLUID WATER
Ft. to Ft.		DESCRIPTION Describe material, grain, size, color, etc.	
0	68	TAN BROWN CLAY	
68	92	SAND AND GRAVEL	
92	160	TAN BROWN CLAY	
160	202	TAN BROWN SILTY CLAY	
202	226	GRAVEL AND SAND	
226	240	BLUE CLAY	
240	260	TAN BROWN CLAY	
260	298	TAN BROWN SILTY CLAY WITH SAND	
298	374	TAN BROWN CLAY WITH SAND	
374	462	TAN BROWN SILTY CLAY WITH SAND	
462	468	GRAVEL	
468	556	TAN BROWN CLAY WITH SILTY SAND	
556	600	TAN BROWN SILTY CLAY	
600	638	SANDSTONE AND CLAYEY SAND	
638	776	TAN BROWN SILTY CLAY	
776	796	GRAVEL	
796	822	LIGHT TAN CLAY	
822	826	SANDSTONE	
826	856	LIGHT TAN CLAY WITH FINE SAND	
856	882	GRAVEL	
882	936	TAN BROWN SILTY, CLAYEY FINE SAND	
936	965	GRAVEL AND SAND WITH BLUE TAN SILTY CLAY	
965	1000	BLUE SILTY SANDY CLAY	
TOTAL DEPTH OF BORING 1000 (Feet)			
TOTAL DEPTH OF COMPLETED WELL 939.7 (Feet)			

WELL LOCATION	
Address SOF HWY 162 & EOF C/R R	
City CA	
County GLENN	
APN Book 016	Page 210 Parcel 012
Township 19 N	Range 2 W Section 8
Latitude	
DEG. MIN. SEC.	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	
WEST	
EAST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
NEW WELL	
MODIFICATION/REPAIR	
Deepen	
Other (Specify)	
DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
Domestic Public	
Irrigation Industrial	
MONITORING ✓	
TEST WELL	
CATHODIC PROTECTION	
HEAT EXCHANGE	
DIRECT PUSH	
INJECTION	
VAPOR EXTRACTION	
SPARGING	
REMEDIATION	
OTHER (SPECIFY)	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER	(Ft) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL	(Ft) & DATE MEASURED
ESTIMATED YIELD *	(GPM) & TEST TYPE
TEST LENGTH	(Hrs.) TOTAL DRAWDOWN (Ft)
May not be representative of a well's long-term yield.	

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL				
Ft.	to Ft.		TYPE (✓)	BLANK	SCREEN	CON- DUCTOR					FILL PIPE	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
720.9	730.2	18					COMP SEC								
730.2	856.6	18	✓				ASTM-135	4	.312				✓		SAND SLURRY
856.6	876.6	18		✓			DBL MILLSL	4	.312	.060				✓	SRI#8 SAND
876.6	939.7	18	✓				ASTM-135	4	.312					✓	BENTONITE S
														✓	SRI#8 SAND
														✓	BENTONITE S
														✓	SRI#8 SAND

ATTACHMENTS (✓)
Geologic Log
Well Construction Diagram
Geophysical Log(s)
Soil/Water Chemical Analysis
Other
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT	
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.	
NAME EATON DRILLING CO.	
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)	
20 W. KENTUCKY AVE.	WOODLAND CA 95695
ADDRESS	CITY STATE ZIP
Signed Mark Davison	DATE SIGNED 09/16/04
WELL DRILLER/AUTHORIZED REPRESENTATIVE	C57 A HIC - 133783
	C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page ____ of ____

Owner's Well No. _____

Date Work Began 11/7/94 **D.W.R.** 11/11/94

Local Permit Agency Glenn County Environmental Health

Permit No. 59698 Permit Date 10/17/94

RECEIVED

DEC 20 1994

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **581475**

DWR USE ONLY - DO NOT FILL IN

19N/02W-32M

STATE WELL NO./SECTION NO.

LATITUDE _____ LONGITUDE _____

APN/TRS/OTHER _____

GEOLOGIC LOG

WELL OWNER

ORIENTATION () ☒ VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY)

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE
Ft. to Ft.

0	7	Clay
7	17	Gravel
17	25	Clay
25	33	Gravel
33	44	Clay
44	46	Gravel
46	120	Clay
120	124	Small gravel
124	160	Clay
160	190	Gravel, cobblestones
190	197	Clay
197	251	Gravel, cobblestones
251	265	Clay
265	270	Gravel
270	274	Small gravel
274	300	Clay

WELL LOCATION

Address 3/4 - 1 mi. West of SS on 60

City 4 Corners

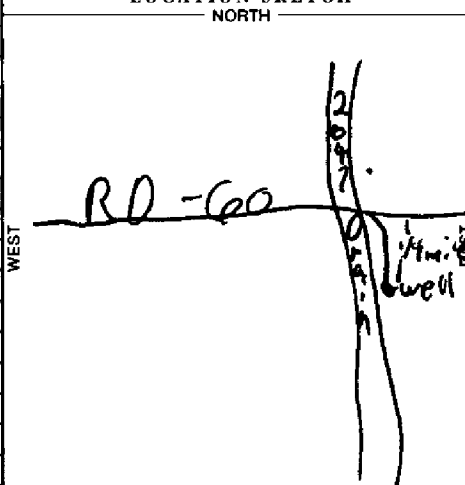
County Glenn

APN Book 13 Page 22 Parcel 0 - 018

Township 19N Range 02W Section 32M

Latitude _____ NORTH Longitude _____ WEST

LOCATION SKETCH NORTH



ACTIVITY ()

☒ NEW WELL

MODIFICATION/REPAIR

_____ Deepen

_____ Other (Specify)

_____ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S)

() _____

_____ MONITORING

WATER SUPPLY

_____ Domestic

_____ Public

☒ Irrigation

_____ Industrial

_____ "TEST WELL"

_____ CATHODIC PROTECTION

_____ OTHER (Specify)

DRILLING METHOD Reverse Rotary FLUID Water

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 4 (Ft.) & DATE MEASURED 12-7-94

ESTIMATED YIELD* 5000 (GPM) & TEST TYPE turbine

TEST LENGTH 10 (Hrs.) TOTAL DRAWDOWN 70 (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 300 (Feet)

TOTAL DEPTH OF COMPLETED WELL 260 (Feet)

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING(S)						DEPTH FROM SURFACE			ANNULAR MATERIAL							
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)				GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE					
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to	Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)
0		100	28	X				steel	20	.250				0		35	X			
100		160	28	X				steel	16	.250				35		260				3/8" grav
160		260	28		X			steel	16		.080									

ATTACHMENTS ()

- _____ Geologic Log
- _____ Well Construction Diagram
- _____ Geophysical Log(s)
- _____ Soil / Water Chemical Analyses
- _____ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Sullivan Drilling 1768
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

P.O. Box 1448 Corning CA 96021
ADDRESS CITY STATE ZIP

Signed Charlie Sullivan 12/14/94 656504
WELL DRILLER / AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

20N/2W-11A1

REGION _____
 COUNTY Glenn
 NEAR _____

DATA FOR RESOURCES

DATE 20N/2W-11A1 12
 OTHER NOS. SCF 5 A3

LOG# 3669

WELL LOG

LOCATION 1,050' West and 5,200' North of SW corner, NE 1/4 of Sec. 11, T20N R2W

DRILLED BY CalTrans for DWR ADDRESS P. O. Box 607, Red Bluff, CA 96080

DRILLING METHOD Rotary GRAVEL PACKED 0-700' DATE COMPLETED 9-2-76

hole 4 3/4" TO 70' & 4 1/2" TO 700' DATE STARTED 8-30-76
 SIZE OF CASING-DEPTH A1 A2 A3 STRUCK WATER AT

PERFORATIONS @ 70-90', @ 140-160', @ 440-510' SIZE 1 1/2" PVC PIPES

WATER LEVEL BEFORE PERFORATING _____ AFTER _____

TEST DATA: DISCHARGE G. P. M. _____ DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. 120' DATUM MSL SOURCE OF INFORMATION Geologist

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICK-NESS	SP. YIELD %
0-3'		soil	3'	
3-70		yellow clay with some gravel	67	
70-92		medium-small gravel	22	
92-109		gravelly brown clay	11	
109-160		medium-small gravel with thin beds of fine gravel	51	
160-258		sandy brown clay	98	
258-283		coarse sand with medium-small gravel	25	
283-303		brown sandy clay	20	
303-335		fine sand beds (thin) with brown clay	32	
335-350		coarse sand and medium-small gravel with brown clay	15	
350-388		brown clay with medium sand	38	
388-398		fine sand	10	
398-405		fine sand with brown clay	8	
405-412		fine sand	7	
412-438		fine sand with brown clay	26	
438-450		fine-coarse sand	12	
450-456		brown silty clay	6	
456-480		fine-coarse sand	24	
480-515		medium-small gravel beds (1' thick) in medium sand	35	
515-526		brown silty clay with sand	11	
526-578		fine-medium sand with brown clay	52	
578-592		medium coarse sand with small gravel	14	
592-598		sandy brown clay	6	
598-608		medium-small gravel with thin sandy brown clay beds	10	
608-624		medium coarse gravel with coarse sand	16	

FOR FIELD COPIES USE ALTERNATE LINES

LOG OBTAINED BY Jorge MartinezDATE 10-4-76

SHEET 1 OF 2

FOR FIELD COPIES USE ALTERNATE LINES

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ____ of ____

Owner's Well No. G-1

No. 801448A,B,C,D

Date Work Began 10/3/01, Ended 1/23/02

Local Permit Agency Glenn Co

Permit No. MW 120-01 Permit Date _____

20N/02W-18
DWR USE ONLY - DO NOT FILL IN
20N/02W/18R(5-7)M
STATE WELL NO./STATION NO.
QUADRAPEX **COMPLETION**
LATITUDE well LONGITUDE _____
APN/TRS/OTHER _____

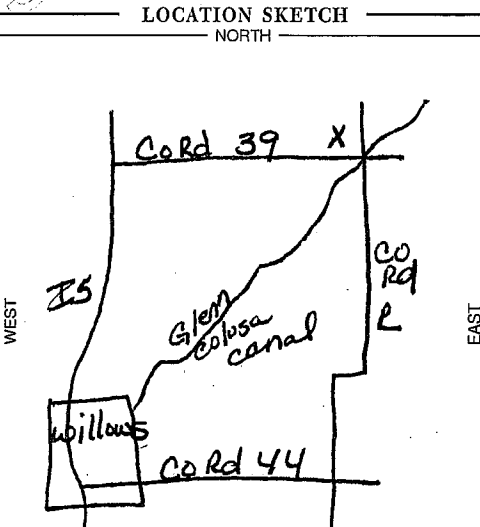
GEOLOGIC LOG

ORIENTATION (°)		VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DRILLING METHOD	FLUID		
Fl. to Fl.		DESCRIPTION			
		Describe material, grain size, color, etc.			
0	70	Rotary	Mud		
70	80		Brown to tan Clay		
80	130		Coarse Sand		
130	180		Blue Grey Clay		
180	290		Sand & gravel		
290	295		Light Brown Clay		
295	445		Sand		
445	451		Brown to tan Clay		
451	490		Sand		
490	500		Brown Clay		
500	515		Sand		
515	525		Yellow to tan Clay		
525	575		Sand		
575	580		Yellow Clay		
580	630		Sand		
630	655		Yellow to Tan Clay		
655	695		Sand		
695	705		Yellow to Tan Clay		
705	750		Silt/Tuff Deposit		
750	805		Yellow to Tan Clay		
805	822		Brown siltstone w/ Tuff Fragments		
822	840		Green / Grey Siltstone		
840	905		Lt. Grey Clay		
905	940		Brown Siltstone with Clay		
940	950		Sand w/ Basalt Chips		
950	977		Blue / Grey Clay		
977	1020		Volcanic Sands		
		Lt Green to Yellow Clay			

TOTAL DEPTH OF BORING 1020 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1000 (Feet)

WELL LOCATION
Address Co. Rd R + Co. Rd 39
City Glenn
County Glenn
APN Book 019 Page 220 Parcel 011
Township _____ Range _____ Section _____
Latitude _____ NORTH _____ WEST _____
Longitude _____ DEG. MIN. SEC. _____

LOCATION SKETCH
NORTH _____
WEST _____ EAST _____ SOUTH _____

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (°)
☒ NEW WELL
☐ MODIFICATION/REPAIR
 ___ Deepen
 ___ Other (Specify) _____
☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
PLANNED USES (°)
WATER SUPPLY
 ___ Domestic ___ Public
 ___ Irrigation ___ Industrial
MONITORING ☒
TEST WELL _____
CATHODIC PROTECTION _____
HEAT EXCHANGE _____
DIRECT PUSH _____
INJECTION _____
VAPOR EXTRACTION _____
SPARGING _____
REMEDIATION _____
OTHER (SPECIFY) _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC
WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL						
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE			
Ft.	to	Ft.	BLANK	SCREEN	CON-DUCTOR	FILL PIPE									Ft.	to	Ft.	CE- MENT (✓)
Please see attach. Log.																		
									</									

ATTACHMENTS (°)

- ☒ Geologic Log
☒ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Spectrum Exploration
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. Box 471

Signed Charlie Boichus
WELL DRILLER/AUTHORIZED REPRESENTATIVE

Zamora Ca 95698
CITY STATE ZIP

DATE SIGNED 3/18/02 512268
C-57 LICENSE NUMBER

Department of Water Resources

G-1

10/15/01 - 01/23/02

#801448

Casing

Deep Well

Ft. to Ft.	Borehole Dia.	Type	Material Grade	Internal Dia	Gauge	Slot Size
1000 - 980		Blank	Steel	2"	Sch 40	
980 - 970		Screen	Steel	2"	Sch 40	.020
970 - 930		Blank	Steel	2"	Sch 40	
930 - 920		Screen	Steel	2"	Sch 40	.020
920 - +6"		Blank	Steel	2"	Sch 40	

#2 Well

Ft. to Ft.	Borehole Dia.	Type	Material Grade	Internal Dia	Gauge	Slot Size
675 - 655		Blank	Steel	2"	Sch 40	
655 - 635		Screen	Steel	2"	Sch 40	.020
635 - +1		Blank	Steel	2"	Sch 40	

Middle Well

Ft. to Ft.	Borehole Dia.	Type	Material Grade	Internal Dia	Gauge	Slot Size
545 - 525		Blank	Steel	2"	Sch 40	
526 - 515		Screen	Steel	2"	Sch 40	.020
515 - 460		Blank	Steel	2"	Sch 40	
460 - 450		Screen	Steel	2"	Sch 40	.020
450 - +2.5		Blank	Steel	2"	Sch 40	

Shallow Well

Ft. to Ft.	Borehole Dia.	Type	Material Grade	Internal Dia	Gauge	Slot Size
201 - 180		Blank	Steel	2"	Sch 40	
180 - 170		Screen	Steel	2"	Sch 40	.020
170 - 150		Blank	Steel	2"	Sch 40	
150 - 140		Screen	Steel	2"	Sch 40	.020
140 - +2		Blank	Steel	2"	Sch 40	

Annular Material

Ft. to Ft.	Type
100 - 925	#8 Sand
925 - 917	#60 Sand
917 - 902	Hot Batch Grout
902 - 513	Cement Grout
531 - 403	#8 Sand
403 - 393	#60 Sand
393 - 283	Cement Grout
283 - 171	#8 Sand
171 - 163	#60 Sand
163 - 101	Cement Grout
101 - 35	# 8 Sand
35 - 31	#60 Sand
31 - Surface	Cement Grout

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ____ of ____

Owner's Well No. G-2

Date Work Began 10/3/01, Ended 1/23/02

Local Permit Agency Glenn Co

Permit No. MW121-01 Permit Date 10/1/01

20N/02W-25
DWR USE ONLY - DO NOT FILL IN
20N/02W-25/A(1-4)M
STATE WELL NO./STATION NO.
QUADRANGLE WELLS CORNER 25
LATITUDE _____ LONGITUDE _____
APN/TRS/OTHER _____

GEOLOGIC LOG

ORIENTATION () _____ VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY)

DEPTH FROM SURFACE _____ DRILLING METHOD _____ FLUID _____

DESCRIPTION

Describe material, grain size, color, etc.

0	20	Sand
20	60	Lt. Brown Clay
60	80	Sands & Gravels
80	190	Brown Clay
190	200	Coarse Sand
260	250	Brown Clay
250	260	Sand
260	410	Blue/Grey Clay
410	440	Sand
440	450	Blue/Grey Clay
450	480	Sand
480	510	Blue/Grey Clay
510	520	Sand & Gravel
520	930	Blue/Grey Clay
930	960	Sand
960	1000	Blue/Grey Clay

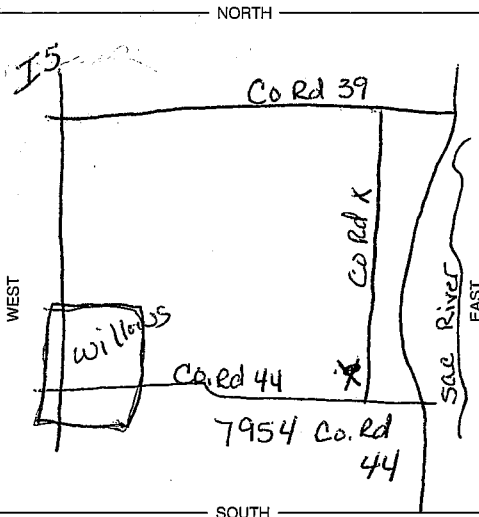
TOTAL DEPTH OF BORING 1000 (Feet)

TOTAL DEPTH OF COMPLETED WELL 980 (Feet)

WELL LOCATION

Address 7954 Co Rd 44
City Glenn
County Glenn
APN Book 019 Page 110 Parcel 025-9
Township _____ Range _____ Section _____
Latitude _____ NORTH Longitude _____ WEST
DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

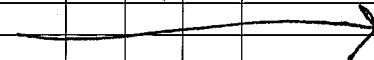


ACTIVITY ()

☒ NEW WELL
MODIFICATION/REPAIR
____ Deepen
____ Other (Specify) _____
____ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
PLANNED USES ()
WATER SUPPLY
____ Domestic ____ Public
____ Irrigation ____ Industrial
MONITORING ☒
TEST WELL _____
CATHODIC PROTECTION _____
HEAT EXCHANGE _____
DIRECT PUSH _____
INJECTION _____
VAPOR EXTRACTION _____
SPARGING _____
REMEDICATION _____
OTHER (SPECIFY) _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____
ESTIMATED YIELD 7 (GPM) & TEST TYPE Airlift
TEST LENGTH 7 (Hrs.) TOTAL DRAWDOWN _____ (Ft.)
* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE		ANNULAR MATERIAL			
			TYPE (\leq)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)			GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									CE- MENT (\leq)
Please see attach log 														
DEC 24 2002														

ATTACHMENTS ()

- ____ Geologic Log
- ____ Well Construction Diagram
- ____ Geophysical Log(s)
- ____ Soil/Water Chemical Analyses
- ____ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Spectrum Exploration Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS P.O. Box 471 CITY Zamora STATE Ca ZIP 95695
Signed Charlene Bercher DATE SIGNED 3/15/23 5/2268
WELL DRILLER/AUTHORIZED REPRESENTATIVE C-57 LICENSE NUMBER

Department of Water Resources

G - 2

#782025

Casing

Deep Well

	<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
A	980 - 960		Blank	Steel	2"	Sch 40	
	960 - 940		Screen	Steel	2"	Sch 40	.020
	940 - +6"		Blank	Steel	2"	Sch 40	

#2 Well

	<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
B	490 - 470		Blank	Steel	2"	Sch 40	
	470 - 460		Screen	Steel	2"	Sch 40	.020
	460 - 430		Blank	Steel	2"	Sch 40	
	430 - 420		Screen	Steel	2"	Sch 40	.020
	420 - +1		Blank	Steel	2"	Sch 40	

Middle Well

	<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
C	280 - 260		Blank	Steel	2"	Sch 40	
	260 - 250		Screen	Steel	2"	Sch 40	.020
	250 - 200		Blank	Steel	2"	Sch 40	
	200 - 190		Screen	Steel	2"	Sch 40	.020
	190 - +2.5		Blank	Steel	2"	Sch 40	

Shallow Well

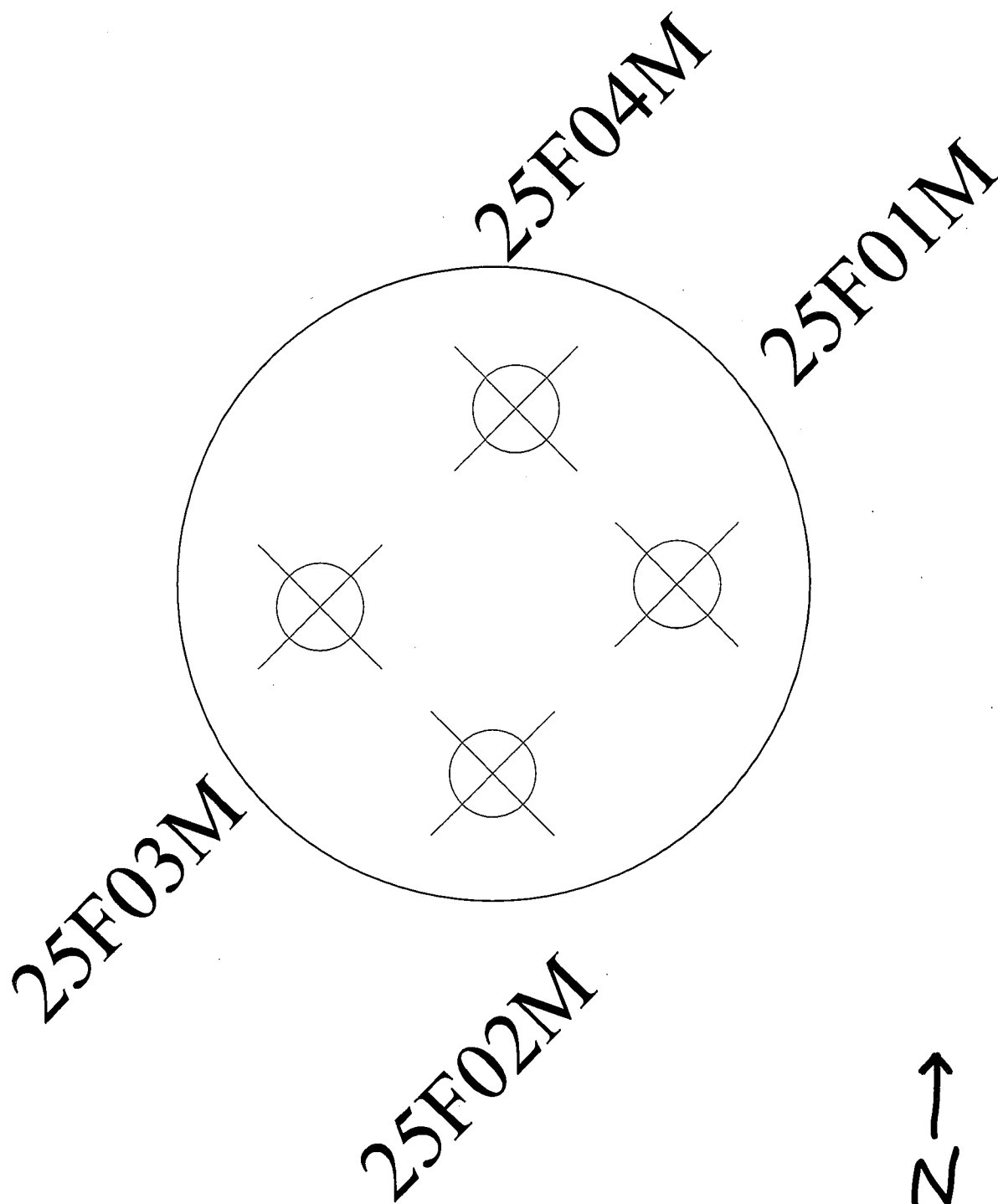
	<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
D	85 - 65		Blank	Steel	2"	Sch 40	
	65 - 55		Screen	Steel	2"	Sch 40	.020
	55 - +2		Blank	Steel	2"	Sch 40	

Annular Material

<u>Ft. to Ft.</u>	<u>Type</u>
985 - 925	#8 Sand
925 - 500	Cement Grout
500 - 400	#8 Sand
400 - 285	Cement Grout
285 - 170	#8 Sand
170 - 85	Cement Grout
85 - 45	#8 Sand
45 - Surface	Cement Grout

#782025

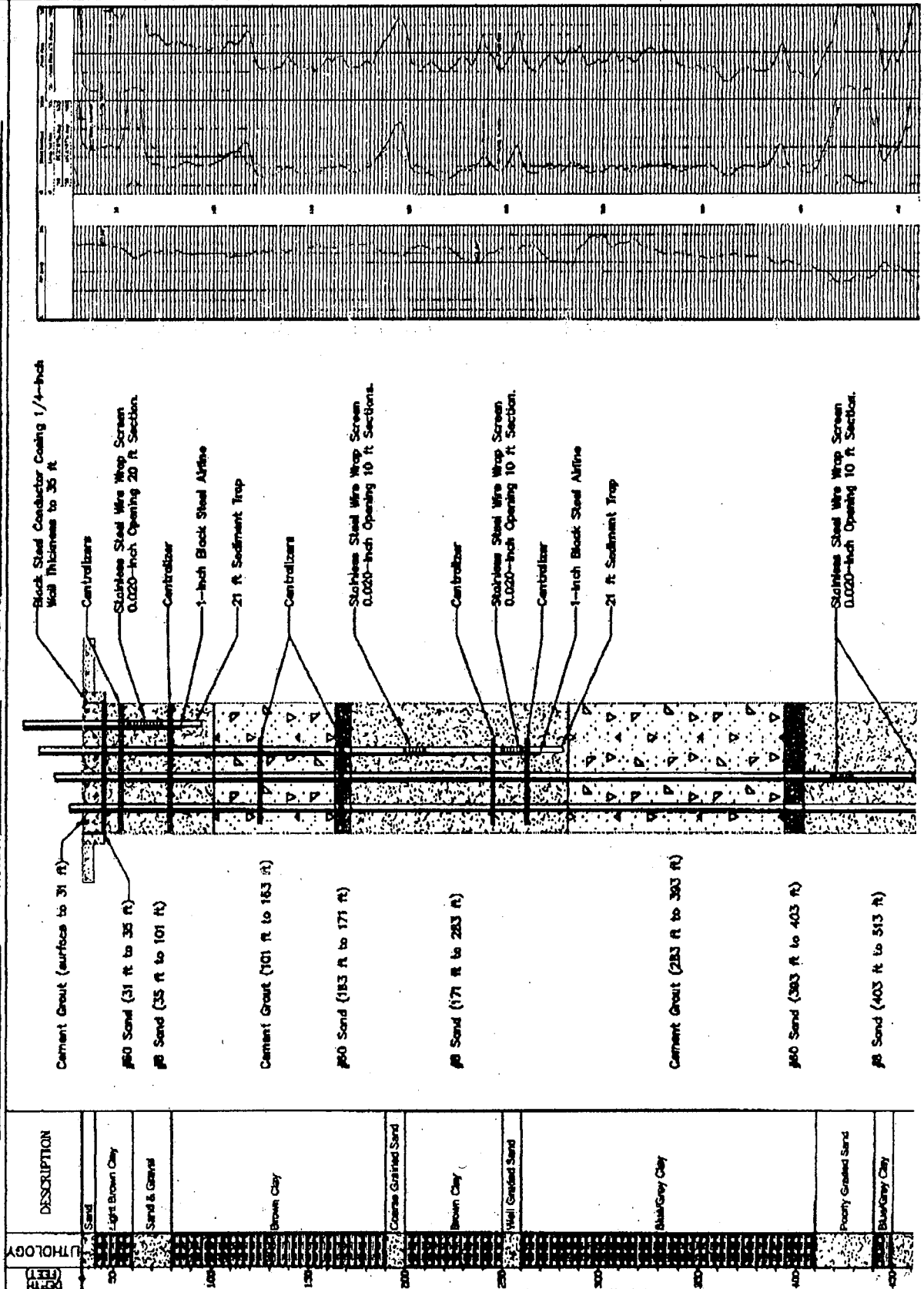
20N02W-Mirande Farms (G-2)

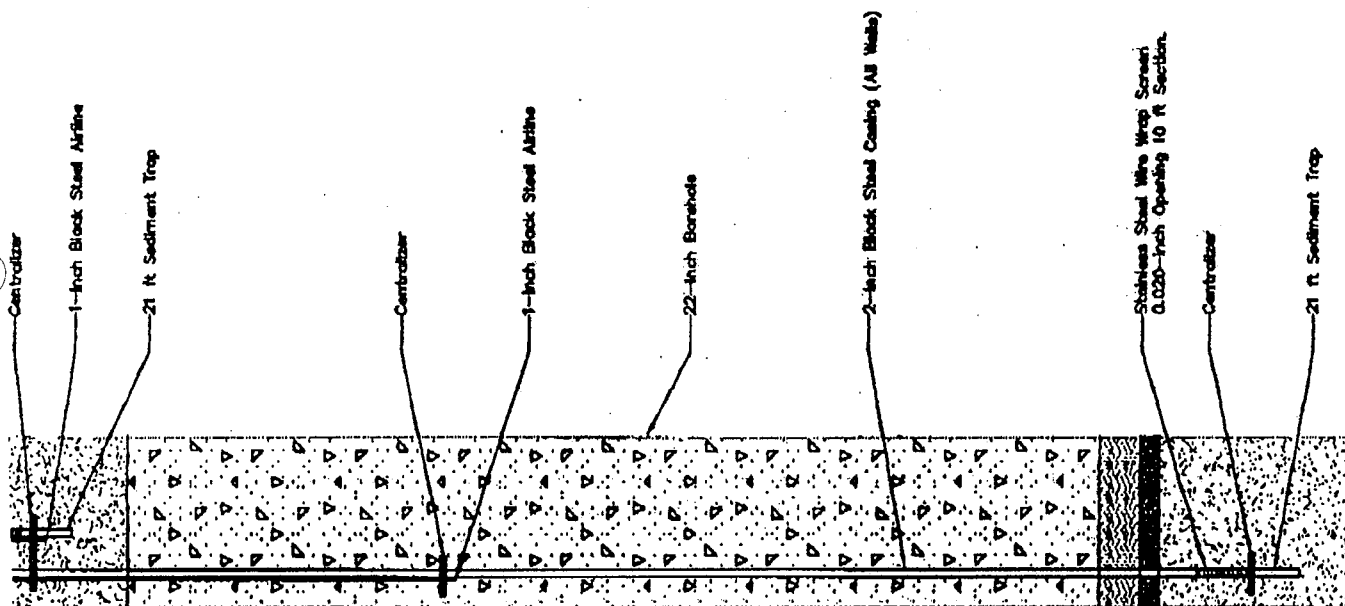
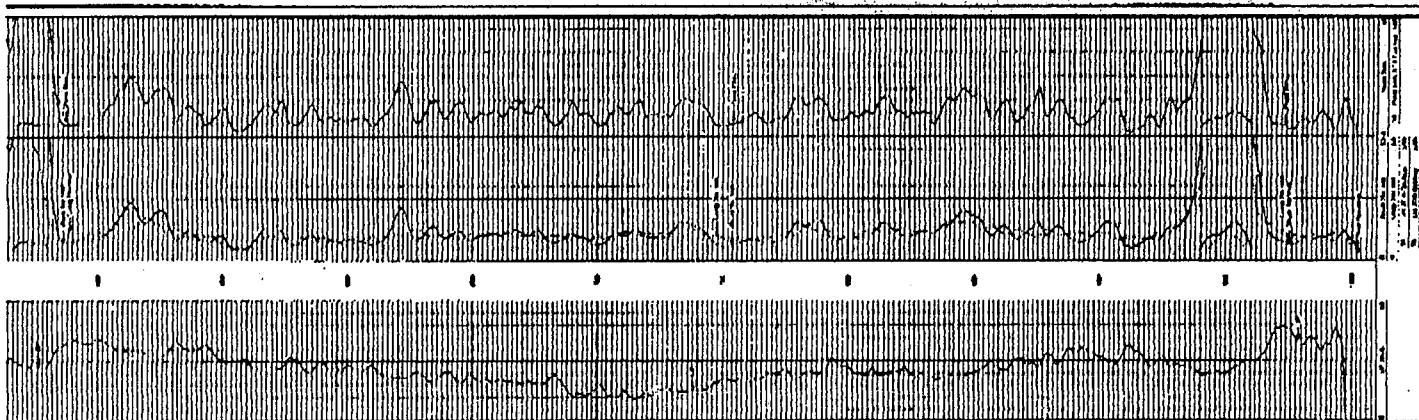


#782025

STATE OF CALIFORNIA - RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

FEATURE Quadrangle Correlation Monitoring Well HOLE NUMBER 522 MINUTE FRAME 10 UTM COORDINATES UTM 10 S 059104 4179116
TYPE OF HOLE Recessed Mud Battery TYPE OF RIG Horizontal TOTAL DEPTH 1000 ft DATE STARTED 10/25/01 DATE COMPLETED 01/23/02
CONTRACTOR Sandium Exploration Inc. DRILL FOREMAN Steve A. Davis DRILL HELPER(S) Kenneth NUMBER OF COMPLETIONS 1
INSPECTED BY J. Sisson & D. Stander PROJECT Alameda Green Drilling 2001 COMMENTS 9.5 inch test hole drilled 10/25/01 to 10/26/01 well construction from 12/1/01 to 01/23/02



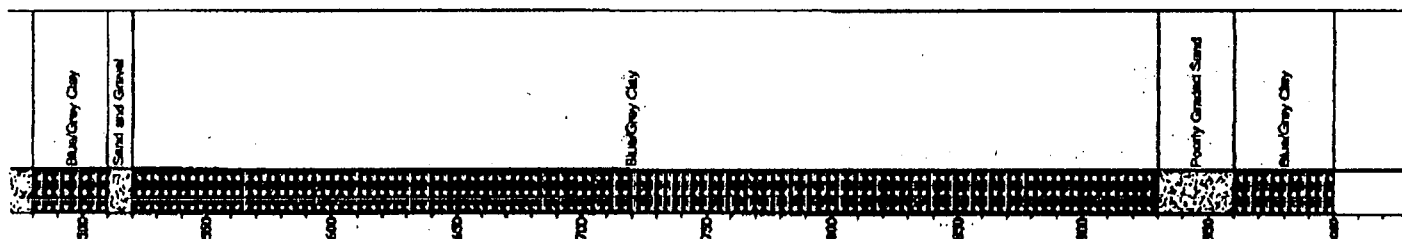


Concrete Grout (513 ft to 902 ft)

Hot Bitum Grout (902 ft to 917 ft)

#40 Sand (917 ft to 925 ft)

#6 Sand (925 ft to 1000 ft)



REGION _____
COUNTY Glenn
NEAR _____

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Basin 5-21.02
DWR No. 20N/2W-33B MD
OTHER NOS SCF-6

WELL LOG

LOCATION 1 mile west from intersection of "Rd V" and "Rd 46"; and 2200' north
of intersection of "Rd 46" and irrigation road west of Lewis home west side of road

DRILLED BY Caltrans for DWR ADDRESS Northern Division, Red Bluff, Ca.

DRILLING METHOD Rotary GRAVEL PACKED yes DATE COMPLETED 8/15/77 - 8/23/77

SIZE OF CASING DEPTH 10 5/8" hole; 3" casing 0-20'; 6" casing 0-320' STRUCK WATER AT 74'

PERFORATIONS 100'-120' ; 200-320' SIZE 6" casing No. _____

WATER LEVEL BEFORE PERFORATING _____ AFTER _____

TEST DATA: DISCHARGE G. P. M. _____ DRAWDOWN FT. _____ HOURS RUN _____

OTHER DATA AVAILABLE: WATER LEVEL RECORD _____ ANALYSIS _____

SURFACE ELEV. 103' DATUM MSL SOURCE OF INFORMATION Geologist

DEPTH	ELEV. OF BOTTOM OF STRATUM	MATERIAL	THICK-NESS	SP. YIELD %
0-8'		Sandy brown soil	8'	
8-15'		Brown clay	7'	
15-20'		Pea Gravel lense	5'	
20-42'		Sandy brownish-yellow clay w/minor gravel	22'	
42-46'		Brown clay, very little fine sand	4'	
46-70'		Sandy brown clay	24'	
70-84'		Coarse sand and pea gravel w/minor brown clay	14'	
84-86'		Brown clay	2'	
86-92'		Coarse sand and pea gravel	6'	
92-98'		Brown silty clay	6'	
98-120'		Coarse sand and pea gravel	22'	
120-144'		Sandy clay (red-brown, green-brown, and buff-brown)	24'	
144-160'		Silty clay (red-brown and green-brown)	16'	
160-170'		Pea gravel	10'	
170-188'		Silty clay w/minor fine sand (green-black and green-brown)	18'	
188-198'		Greenish-brown clay	10'	
198-218'		Red-brown and green-brown clayey sand w/minor pea gravel lenses	20'	
218-223'		Greenish brown clay	5'	
223-236'		Greenish brown clayey sand	13'	
236-240'		Pea Gravel	4'	
240-260'		Whiteish-tan clayey sand w/minor gravel lenses	20'	
260-261'		Pea Gravel	1'	
261-268'		Whiteish-tan clayey sand	7'	
268-282'		Pea gravel and coarse sand	14'	

OBTAINED BY Peter Straud DATE 9/19/77 SHEET 1 OF 2

WELL LOG

[illegible]

FOR FIELD COPIES USE ALTERNATE LINES

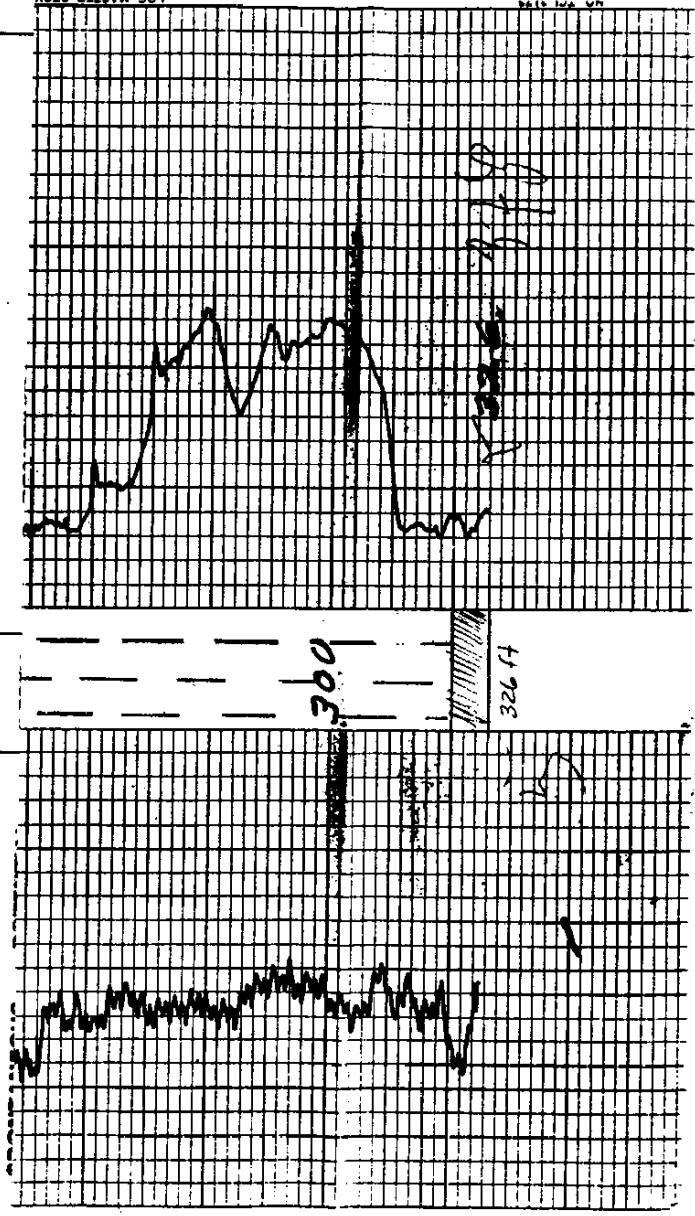


APPLIED GEOLOGICAL ENGINEERING, INC.

ELECTRICAL WELL LOG

8055 CALLISON RD.
NEWCASTLE, CA 95658
(916) 943-2886

Company		CALIFORNIA STATE DIVISION OF WATER RESOURCE		Red Bluff, Dist.	
County		Glenn		State	
Elevation		120		Location	
S.E.		33		T20N, R2 W.	
Test Hole No.		SCF-6		Run No. 1	
Date		Aug. 24, 1977		Run No. 2	
First Reading		10		Natural + Bentonite	
Last Reading		326		40 + 72	
Footage Logged		316		40 + 72	
Bottom (Driller)		325		40 + 72	
Casing (From Log)		-		40 + 72	
Casing (Driller)		-		40 + 72	
Casing Size		10		40 + 72	
Bit Size		10		40 + 72	
MUD		-		40 + 72	
Density		-		40 + 72	
Viscosity		-		40 + 72	
Res. @ 100		-		40 + 72	
pH		-		40 + 72	
Circ. Temp.		-		40 + 72	
S.H. Temp.		-		40 + 72	
Logged by		PAULSEN		40 + 72	
Witnessed by		LYONS, PEARSON		40 + 72	



ORIGINAL
File with DWR

Page 1 of 12

Owner's Well No. 8123

Date Work Began 6/4/2007, Ended 6/18/2007

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 280-07

Permit Date 5/31/2007

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E057712**

DWR USE ONLY DO NOT FILL IN

20N 03W - 7

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE	DESCRIPTION
Ft. to Ft.	Describe material, grain, size, color, etc.
0 10	TOP SOIL
10 40	BROWN CLAY WITH SAND AND GRAVEL
40 130	YELLOW BROWN CLAY WITH SAND STREAKS
130 140	SAND AND GRAVEL
140 250	YELLOW BROWN CLAY WITH SAND STREAKS
250 260	SAND AND GRAVEL
260 310	YELLOW BROWN CLAY WITH SAND STREAKS
310 465	YELLOW BROWN CLAY WITH SAND AND GRAVEL
465 485	SAND AND GRAVEL WITH BLUE CLAY
485 500	SAND AND GRAVEL
500 530	BLUE CLAY WITH SAND
530 625	BLUE AND YELLOW CLAY MIX WITH SAND AND GRAVEL STREAKS
625 700	SAND AND GRAVEL WITH YELLOW AND BLUE CLAY MIX
700 865	YELLOW BROWN AND BLUE CLAY MIX WITH SAND AND GRAVEL
865 1000	GRAY CLAY WITH SAND AND GRAVEL STREAK
1000 1050	SAND AND GRAVEL
1050 1200	SAND AND GRAVEL WITH BLUE GRAY CLAY
1200 1300	YELLOW ORANGE CLAY WITH SAND AND GRAVEL STREAKS
1300 1395	SOFT YELLOW GRAY CLAY WITH SAND AND GRAVEL
1395 1400	HARD ROCK

TOTAL DEPTH OF BORING 1400 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1034 (Feet)

WELL LOCATION

Address 50' EOF RD D & 46 MI SOF RD 35

City CA

County GLENN

APN Book 020 Page 210 Parcel 008

Township 20 N Range 3 W Section 7

Latitude DEG. MIN. SEC. NORTH

LOCATION SKETCH

WEST EAST

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL					
			TYPE (✓)				MATERIAL / GRADE			INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to Ft.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE		CE-MENT (✓)	BEN-TONITE (✓)				FILL (✓)	FILTER PACK (TYPE/SIZE)	
ZONE	1														
0	118	16	✓			PVC	2.5	SCH 80			✓				SAND SLURRY
118	128	16		✓		PVC	2.5	SCH 80	.030			✓			BENTONITE C
128	138	16	✓			PVC	2.5	SCH 80					✓		SRI#8 SAND
ZONE	2														
0	380	16/14	✓			PVC	2.5	SCH 80					✓		BENTONITE C
											✓				BENTONITE C

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE
ADDRESS

Signed *Mark D. Damion*
WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND CA 95695
CITY STATE ZIP

07/06/07 C57 A HIC - 133784
DATE SIGNED C-57 LICENSE NUMBER

ORIGINAL
File with DWR
Page 1 of 2

Owner's Well No. 7448-1

Date Work Began 8/26/2002, Ended 9/6/2002

Local Permit Agency GLENN CNTY HEALTH DEPT.

Permit No. MW-139-02

Permit Date 8/21/2002

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726740, A

DWR USE ONLY DO NOT FILL IN

21N/02W-01M
STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ☒ ROTARY FLUID MUD

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 10	WELL GRADED SAND W/SILT AND FINE GRVL
10 20	WELL GRADED SAND WITH FINE GRAVEL
20 50	POORLY GRADED SAND AND GRAVEL
50 60	POORLY GRADED SAND AND GRVL W/TAN CLY
60 70	POORLY GRADED SAND WITH GRAVEL
70 80	POORLY GRADED GRAVEL
80 100	GRAY/BROWN CLAY WITH SAND AND GRAVEL
100 110	POORLY GRADED SAND
110 120	POORLY GRADED SAND WITH FINE GRAVEL
120 150	POORLY GRADED GRAVEL
150 160	GRAVEL AND SAND W/YELLOW STICKY CLAY
160 190	YELLOW CLAY WITH GRAVEL AND SAND
190 200	POORLY GRADED GRAVEL W/SAND AND CLAY
200 230	YELLOW CLAY WITH SAND AND GRAVEL
230 240	YELLOW SILTY CLAY
240 250	YELLOW SILTY CLAY W/SAND AND GRAVEL
250 260	SMALL GRAVEL WITH SAND AND SILTY CLAY
260 270	POORLY GRADED GRAVEL WITH SAND
270 280	POORLY GRADED GRAVEL
280 300	GRAVEL
300 310	GRAVEL WITH FINE SAND
310 340	GRAVEL
340 350	TUSCAN ROCK WITH GRAVEL AND SAND
350 370	TUSCAN ROCK W/SANDSTONE, QUARTZ, OTHER METAMORPHICS, TUFF, BASALT, SAND
370 380	COARSE SAND
380 450	TUSCAN AND METAMORPHIC RCK W/SND, CLY
450 460	SILTSTONE WITH GRAVEL, QUARTZ, RED
	CHERT, AND VOLCANICS
460 555	MIXED COLORED CLAY WITH GRAVEL

TOTAL DEPTH OF BORING 600 (Feet)

TOTAL DEPTH OF COMPLETED WELL 578 (Feet)

WELL LOCATION

Address .25 MI SOF C/R 24 & .75 MI EOF C/R V V

City CA

County GLENN

APN Book 037 Page 360 Parcel 060

Township 22 N Range 2 W Section 15 01

Latitude 21N

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public

Irrigation Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON-DUCTOR	FILL PIPE		
ZONE 1							
0 232	12					ACCESS TB	1
0 547	12/8	✓				SCH 40	2
547 557	8		✓			SS SCREE	2
557 578	8	✓				SCH 40	2
ZONE 2							

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 220	✓			SAND SLURRY
220 230		✓		CHIPS
230 385			✓	#8 GRD SAND
385 505	✓			SAND SLURRY
505 600			✓	#8 GRD SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

10/03/02

CA

STATE

DATE SIGNED

95695

ZIP

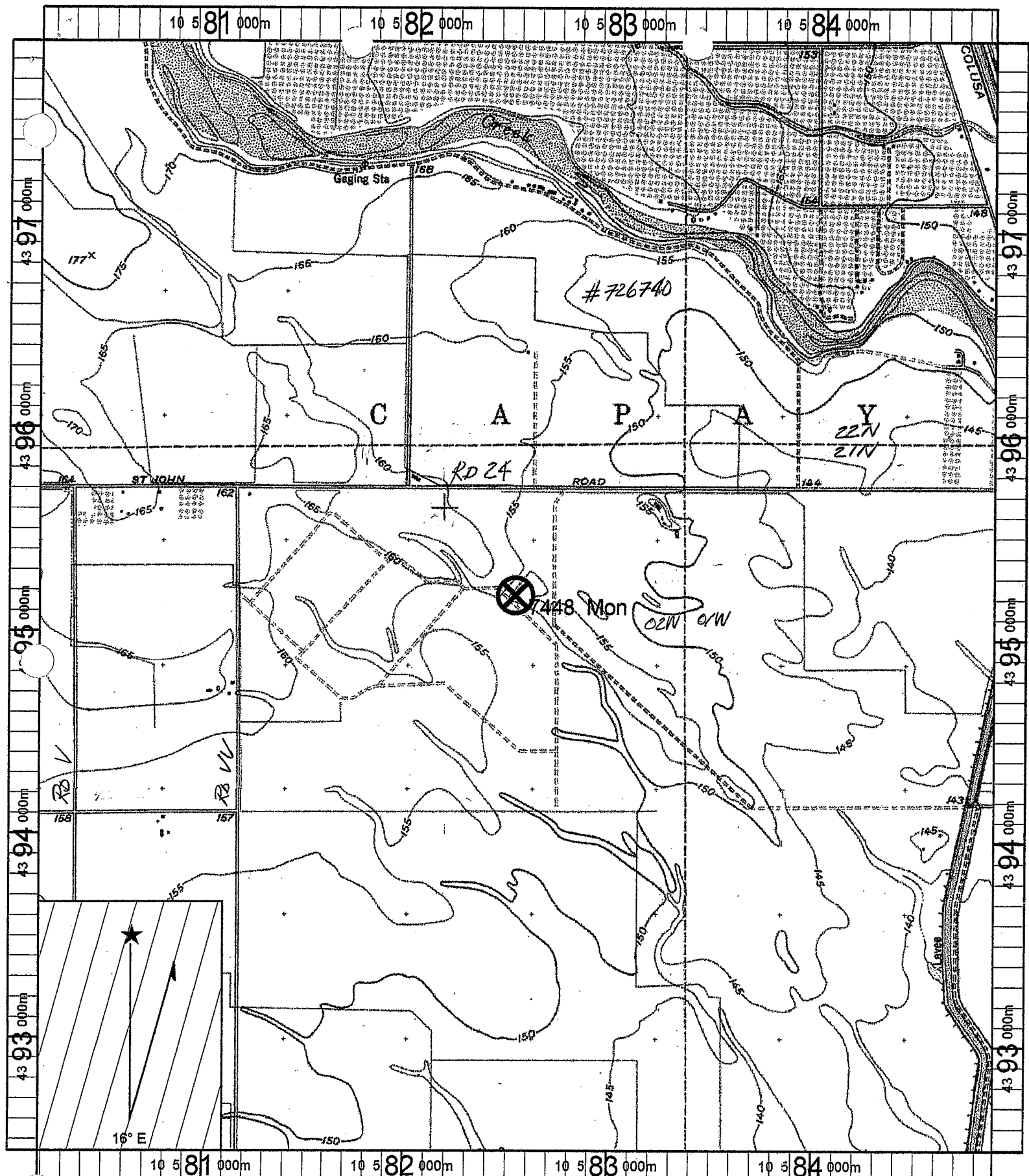
133783-C57A

C-57 LICENSE NUMBER

Refer to Instruction Pamphlet

APN/TRS/OTHER

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



Name: HAMILTON CITY
 Date: 8/15/2002
 Scale: 1 inch equals 2000 feet

Caption: Glenn Co. (St. Johns Farms)
 Job# 7448 Mon
 APN: 037-360-06

ORIGINAL
File with DWR

Page 2 of 2

Owner's Well No. 7448-2

Date Work Began: 8/26/2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Report to be submitted to: Completed

No. **726741**

Final: 8/6/2002

Local Permit Agency: GLENN CNTY HEALTH DEPT

Permit No. MW-139-02

Permit Date: 8/21/2002

WELL USE ONLY - DO NOT FILE HERE

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

WELLS OTHER

GEOLOGIC LOG

ORIENTATION		VERTICAL	HORIZONTAL	ANGLE	SPECIFIC
DRILLING METHOD		ROTARY			
DEPTH FROM SURFACE	DESCRIPTION				
555	575 GRAVEL				
575	605 MIXED COLORED CLAY W/SAND AND GRAVEL				

LOCAL DEPTH OF FINISH: 125

LOCAL DEPTH OF COMPLETED WELL: 124

WELL LOCATION

Address: .25 MI SOF OR 24 & .75 MI EOF OR V V

City: CA

County: GLENN

APN: Book 037 Page 360 Parcel 960

Township: 22 N Range 2 W Section 15

Latitude: _____

Longitude: _____

LOCATION SWITCH

WEST _____ EAST _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER: _____

DEPTH OF STATIC WATER LEVEL: _____

ESTIMATED YIELD: _____

TEST LENGTH: _____

DEPTH FROM SURFACE	BURL HOLE DIA	TYPE	CASING (SI)			
			MATERIAL GRADE	INTERNAL DIAMETER (inches)	GRADE OR WALL THICKNESS	JOINT SIZE (inches)
0	55	15	ACCESS TS.	1		
0	55	15	SCH 40	2		
55	65	15	SS SCREE	2		.030
65	75	15	SCH 40	2		

DEPTH FROM SURFACE	CEMENT	BEN	TYPE
0	46	✓	SAND SLURRY
46	80	✓	#8 GRO SAND
80	100	✓	CHIPS
100	115	✓	#8 GRO SAND
115	125	✓	CHIPS

ATTACHMENTS

Geologic Log

Well Construction Diagram

Geophysical Log

Soil/Water Chemical Analysis

Other

ATTACH ADDITIONAL INFORMATION IF IT EXISTS

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME: EATON DRILLING CO

PERSON, FIRM OR CORPORATION (TYPE OR PRINT):

20 W. KENTUCKY

ADDRESS: _____

City: WOODLAND

State: CA

Zip: 95695

Signature: _____

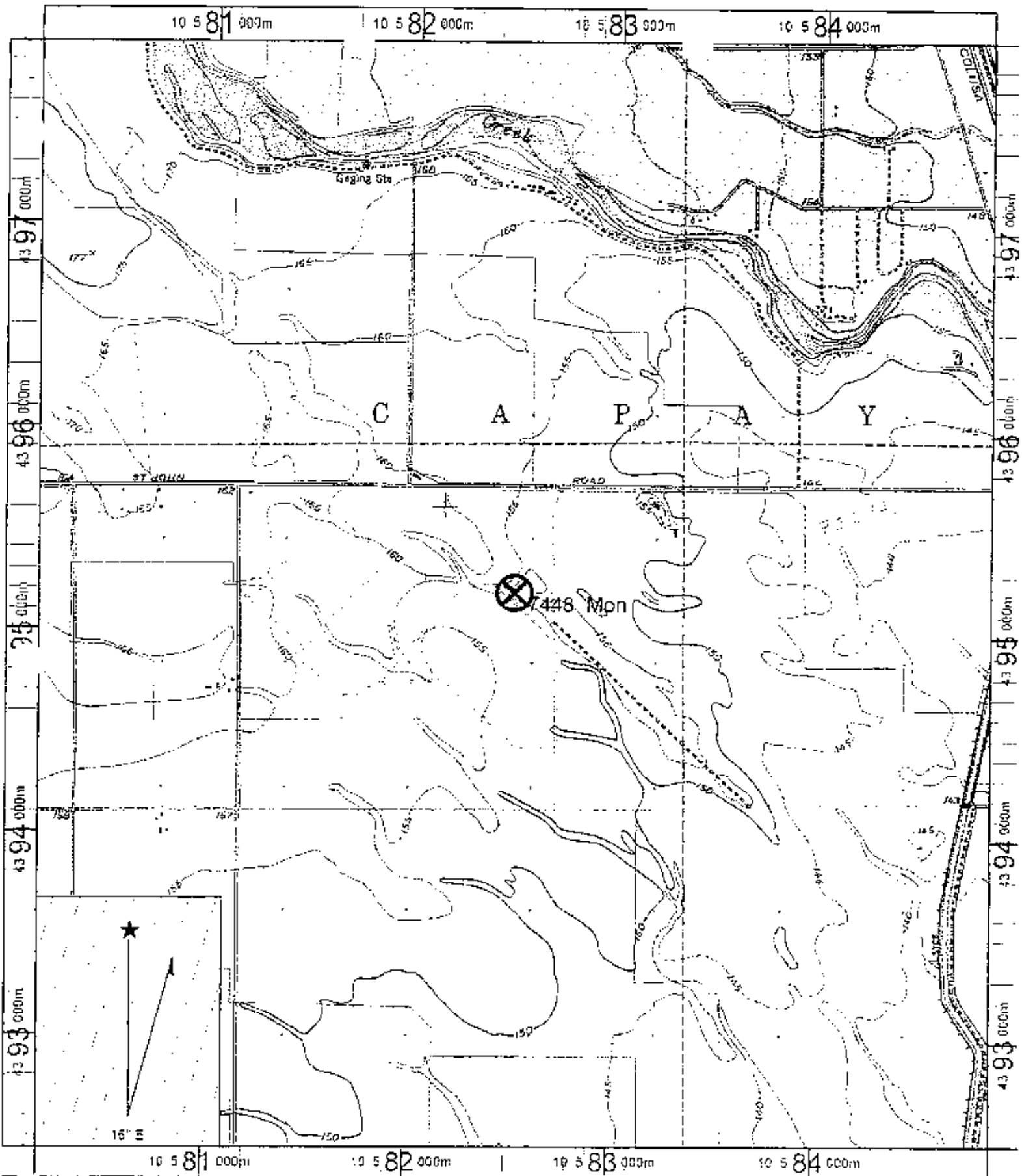
DATE: 10/03/02

WELL DRILLER AUTHORIZED REPRESENTATIVE

DATE & SIGNATURE: 10/03/02

STATE OF CALIFORNIA: 133782-C37A

REGISTRATION #147659



Name: HAMILTON CITY
 Date: 8/15/2002
 Scale: 1 inch equals 2000 feet

Caption: Glenn Co. (St. Johns Farms)
 Job# 7448 Mon
 APN: 037-360-06

ORIGINAL
File with DWR

Page 10 of 12

Owner's Well No. 7987

Date Work Began 7/12/2006, Ended 7/28/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW248-06

Permit Date 6/14/2006

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E044112**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH FROM SURFACE DRILLING METHOD **ROTARY** FLUID **MUD**

Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

0	3	TOP SOIL
3	20	SAND AND GRAVEL
20	110	3/4" GRAVEL WITH YELLOW BROWN CLAY
110	150	YELLOW BROWN CLAY
150	290	YELLOW BROWN CLAY WITH SAND AND GRAVEL
290	330	LOOSE GRAVEL WITH SAND
330	460	SOFT GRAY CLAY WITH SAND AND GRAVEL
460	500	BRITTLE YELLOW AND GRAY CLAY MIX WITH COARSE SAND
500	620	BRITTLE YELLOW CLAY WITH SAND AND GRAVEL
620	920	BRITTLE GRAY CLAY WITH SAND AND GRAVEL
920	1200	SOFT SILTY GRAY CLAY WITH SAND STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 948 (Feet)

WELL LOCATION

Address .5 MI SOF RD 24 & .67 MI EOF RD S

City CA

County GLENN

APN Book 023 Page 220 Parcel 005

Township 21 N Range 2 W Section 4

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☐

WEST EAST
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON-DUCTOR	FILL PIPE		
165	175	14	✓			PVC F480	2.5
175	269	14	✓			PVC F480	2.5
269	279	14	✓			PVC F480	2.5
279	289	14	✓			PVC F480	2.5
ZONE	3						
+1.5	673.5	14	✓			PVC F480	2.5
						SCH 80	

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	41	✓		SAND SLURRY
41	45	✓		BENTONITE C
45	99		✓	SRI#8 SAND
99	104	✓		BENTONITE C
104	130		✓	SRI#8 SAND
130	135	✓		BENTONITE C

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

Mark Damion
WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/05/06

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 12 of 12

Owner's Well No. 7987

Date Work Began 7/12/2006, Ended 7/28/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW248-06 Permit Date 6/14/2006

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E044112**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH FROM SURFACE DRILLING METHOD **ROTARY** FLUID **MUD**

Describe material, grain, size, color, etc.

0	3	TOP SOIL
3	20	SAND AND GRAVEL
20	110	3/4" GRAVEL WITH YELLOW BROWN CLAY
110	150	YELLOW BROWN CLAY
150	290	YELLOW BROWN CLAY WITH SAND AND GRAVEL
290	330	LOOSE GRAVEL WITH SAND
330	460	SOFT GRAY CLAY WITH SAND AND GRAVEL
460	500	BRITTLE YELLOW AND GRAY CLAY MIX WITH COARSE SAND
500	620	BRITTLE YELLOW CLAY WITH SAND AND GRAVEL
620	920	BRITTLE GRAY CLAY WITH SAND AND GRAVEL
920	1200	SOFT SILTY GRAY CLAY WITH SAND STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 948 (Feet)

WELL LOCATION

Address .5 MI SOF RD 24 & .67 MI EOF RD S

City CA

County GLENN

APN Book 023 Page 220 Parcel 005

Township 21 N Range 2 W Section 4

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public

☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIALATION ☐

OTHER (SPECIFY) ☐

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		
928	938	8-3/4	✓			PVC F480	2.5
938	948	8-3/4	✓			PVC F480	2.5

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL TYPE			
	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
736	902	✓		SAND SLURRY
902	914		✓	BENTONITE C
914	964		✓	SRI#8 SAND
964	977		✓	BENTONITE C
977	1200		✓	NATIVE FILL

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA 95695

STATE

ZIP

Signed

Mark Davison

WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/05/06

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

Department of Water Resources
Jasper Deep

1/11/14 10:50

Casing

Deep Well

<u>Fl. to Fl.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
475 - 452		Blank	Steel	2"	Sch 40	
452 - 442		Screen	Steel	2"	Sch 40	0.20
442 - -		Blank	Steel	2"	Sch 40	
402 - -		Blank	Steel	1"	Sch 40	

Middle Well

<u>Fl. to Fl.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
153 - 132		Blank	Steel	2"	Sch 40	
132 - 122		Screen	Steel	2"	Sch 40	0.20
122 - -		Blank	Steel	2"	Sch 40	
122 - -		Blank	Steel	1"	Sch 40	

Shallow Well

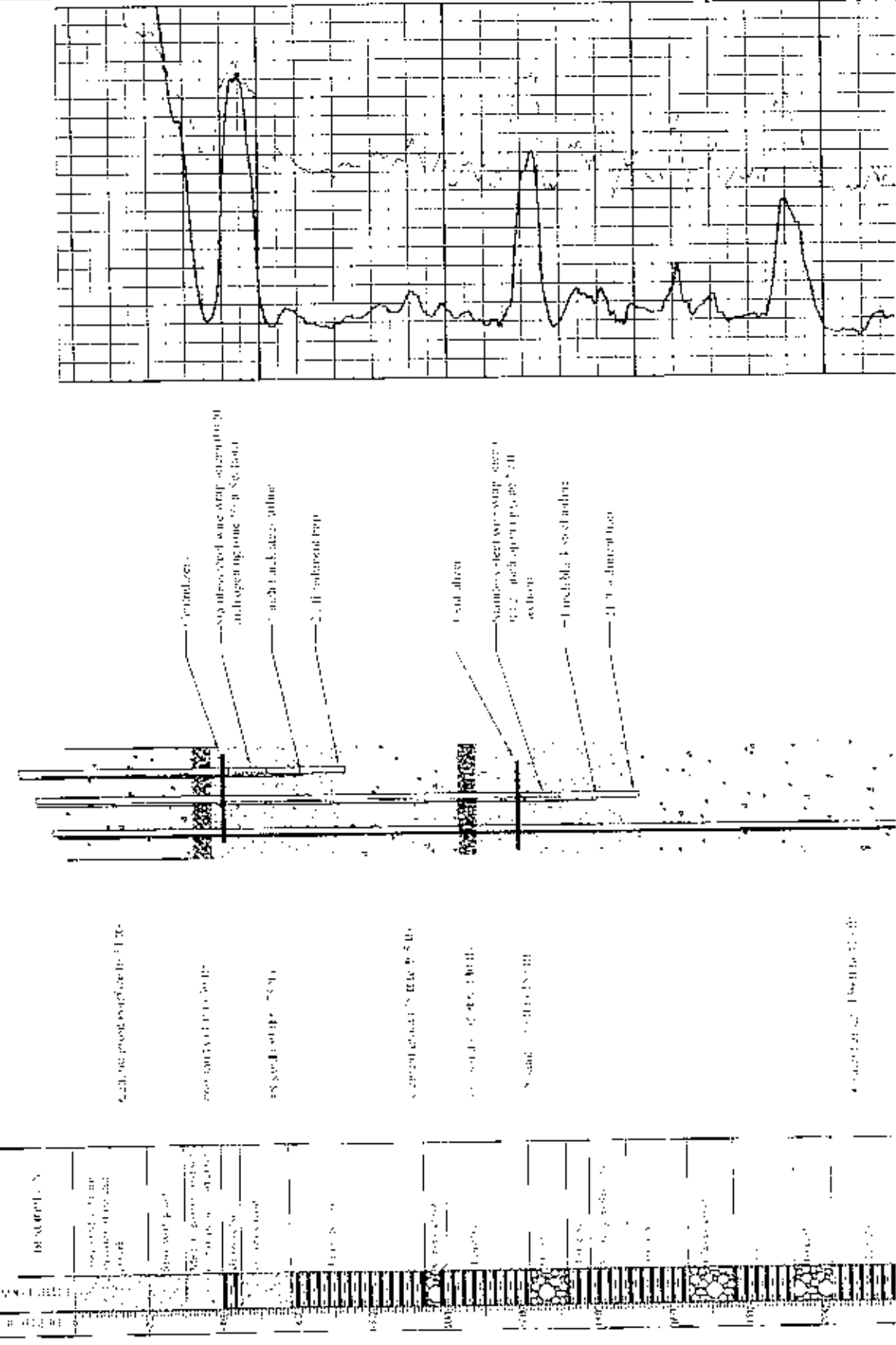
<u>Fl. to Fl.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
55 - 54		Blank	Steel	2"	Sch 40	
54 - 44		Screen	Steel	2"	Sch 40	0.20
44 - -		Blank	Steel	2"	Sch 40	
05 - -		Blank	Steel	1"	Sch 40	

Annular Material

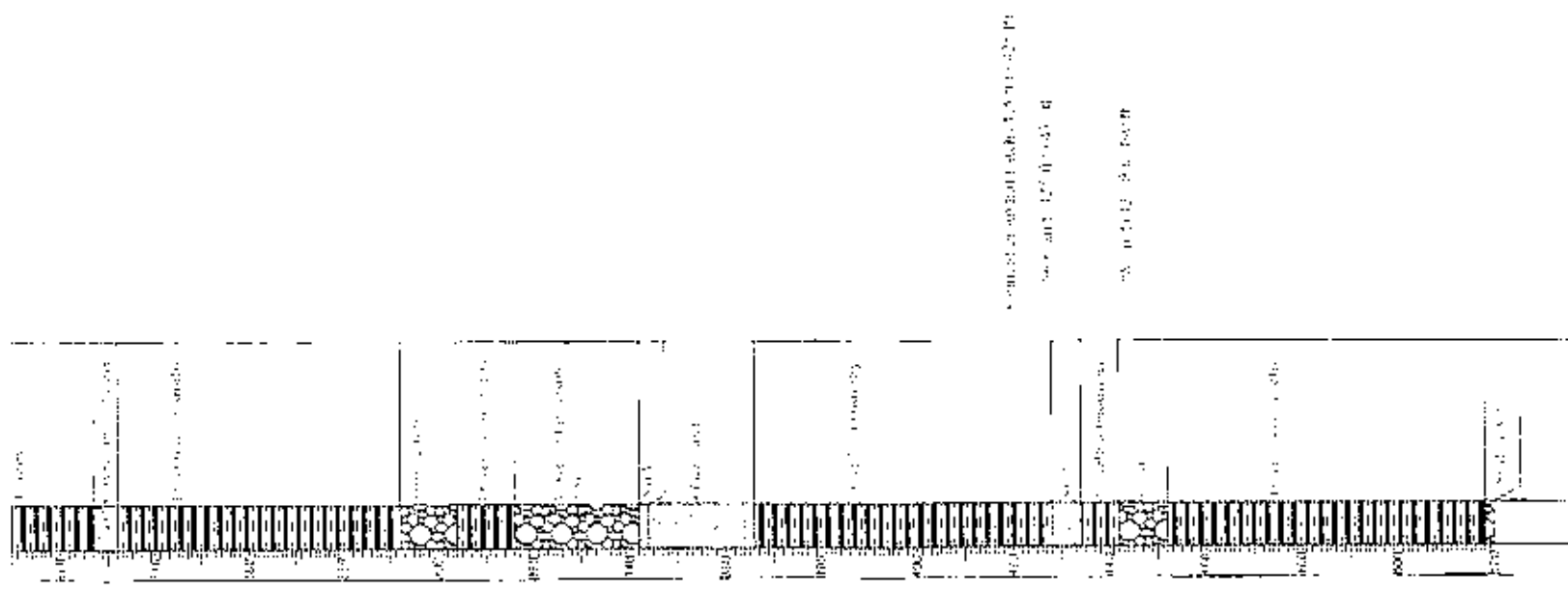
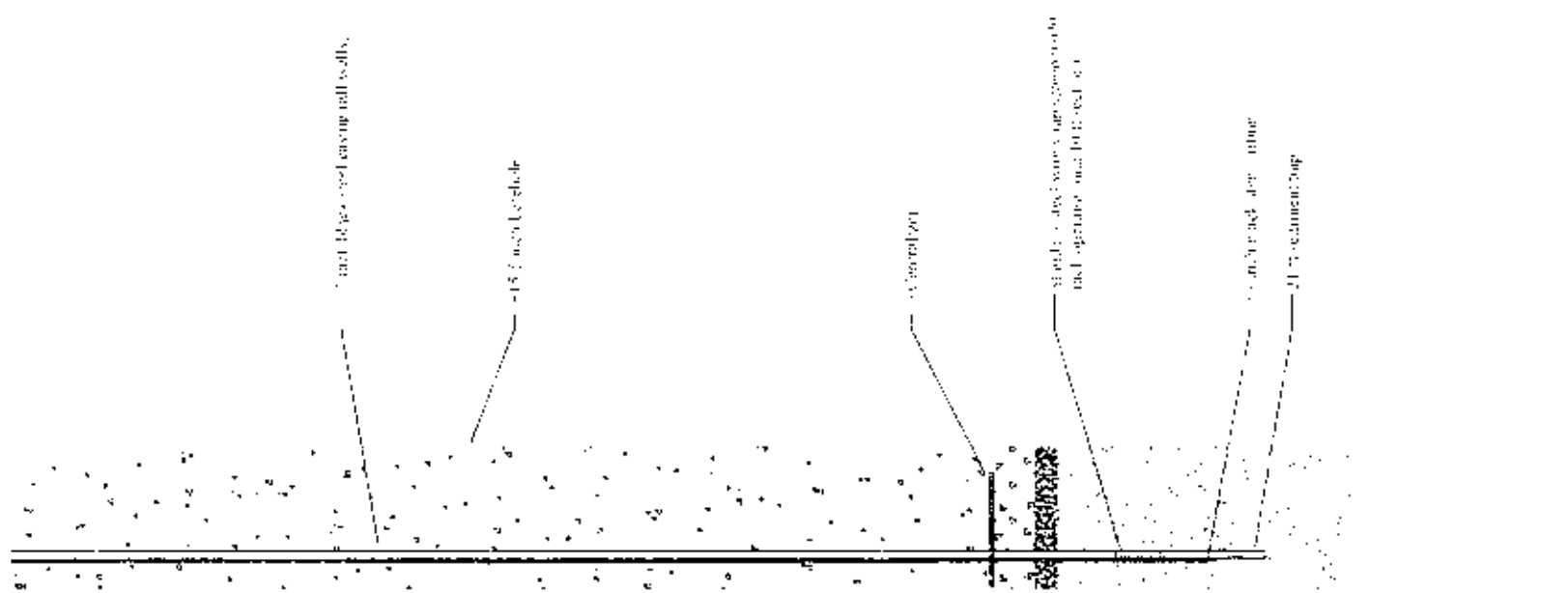
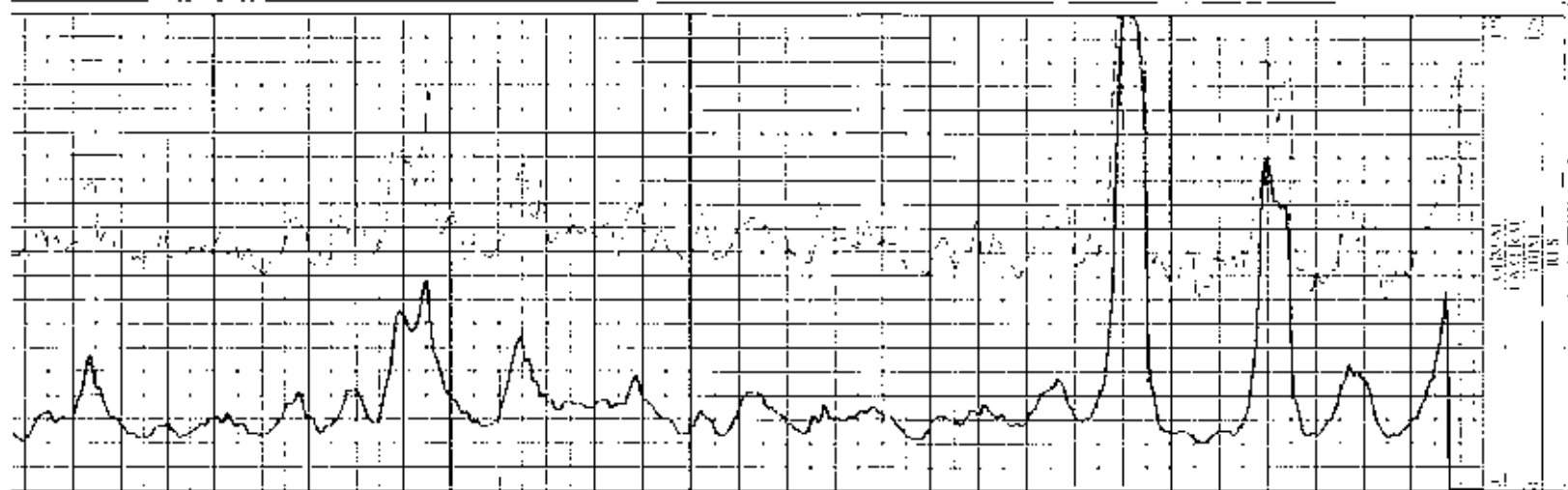
Fl. to Fl. Type

7-10-42

STATE OF CALIFORNIA - RESOURCES AGENCY DEPARTMENT OF WATER RESOURCES SOUTHERN DISTRICT		STATION WITH RECORDS: <u>PERROW EXPORT Pipe Line</u> <u>PERROW EXPORT Pipe Line</u> <u>PERROW EXPORT Pipe Line</u>	
PROJECT NO. <u>100-1000000-1000000</u>	DATE OF REPORT <u>10-10-42</u>	CONTRACTOR <u>PERROW EXPORT Pipe Line</u>	SHEET NO. <u>100-1000000-1000000</u>
PROJECT NAME <u>PERROW EXPORT Pipe Line</u>	DATE OF REPORT <u>10-10-42</u>	ENGINEER <u>PERROW EXPORT Pipe Line</u>	SHEET NO. <u>100-1000000-1000000</u>
PROJECT NO. <u>100-1000000-1000000</u>	DATE OF REPORT <u>10-10-42</u>	ENGINEER <u>PERROW EXPORT Pipe Line</u>	SHEET NO. <u>100-1000000-1000000</u>
PROJECT NAME <u>PERROW EXPORT Pipe Line</u>	DATE OF REPORT <u>10-10-42</u>	ENGINEER <u>PERROW EXPORT Pipe Line</u>	SHEET NO. <u>100-1000000-1000000</u>



10/1/1991



ORIGINAL
File with DWR
Page 1 of 3

AUG 08 2002 WELL

STATE OF CALIFORNIA
COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY DO NOT FILL IN
21N/02W-33M
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 7450

No. **726724** **ABC**

Date Work Began 7/11/2002, Ended 7/19/2002

Local Permit Agency **GLENN COUNTY HEALTH DEPT.**

Permit No. **MW134-02**

Permit Date **6/25/2002**

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)		DRILLING METHOD REVERSE	FLUID WATER
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	20	BROWN/YELLOW CLAY	
20	36	STICKY BROWN/YELLOW CLAY	
36	48	PALE OLIVE CLAY	
48	60	DARK YELLOW/BROWN CLAY	
60	80	SUBANGULAR TO ROUNDED GRAVEL	
80	100	SILTY SANDY CLAY	
100	133	SILTY SANDY CLAY WITH ROUNDED GRAVEL	
133	160	POORLY GRADED, ROUNDED TO SUBROUNDED GRAVEL	
160	190	DUSKY YELLOW/BROWN SILTY CLAY	
190	209	DUSKY YELLOW/BROWN SILTY CLAY WITH SIL AND SAND	
209	229	MEDIUM BROWN/YELLOW CLAY	
229	240	POORLY SORTED GRAVEL WITH VERY COARSE SAND	
240	250	GRAVEL	
250	260	YELLOW/BROWN CLAY	
260	270	BLUE/GREEN CLAY	
270	280	GRAVELLY CLAY	
280	290	BLUE/GREEN CLAY AND GRAVELLY SAND	
290	310	BLUE/GREEN CLAY	
310	320	GRAVEL AND CLAY	
320	330	BLUE/GREEN SILTY CLAY	
330	340	CLAY AND GRAVEL	
340	430	BLUE/GREEN CLAY	
430	469	BLUE/GREEN CLAY WITH GRAVEL AND SAND	
469	529	GREEN/BLUE CLAY	
529	549	GRAVEL AND SAND	
549	589	VERY STICKY BLUE/GREEN CLAY WITH FINE SA	
589	689	BLUE/GREEN CLAY WITH COARSE SAND	

TOTAL DEPTH OF BORING **1020** (Feet)

TOTAL DEPTH OF COMPLETED WELL **974.2** (Feet)

WELL LOCATION
Address **.4 MI N OF C/R 33 & W OF C/R S**
City **CA**
County **GLENN**
APN Book **023** Page **190** Parcel **010**
Township **21 N** Range **2 W** Section **33**
Latitude _____ DEG. MIN. SEC. _____
LOCATION SKETCH
NORTH _____
WEST _____ EAST _____ SOUTH _____
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.
ACTIVITY (✓)
☒ NEW WELL
MODIFICATION/REPAIR
____ Deepen
____ Other (Specify) _____
PLANNED USES (✓)
WATER SUPPLY
____ Domestic _____ Public
____ Irrigation _____ Industrial
MONITORING ☒
TEST WELL _____
CATHODIC PROTECTION _____
HEAT EXCHANGE _____
DIRECT PUSH _____
INJECTION _____
VAPOR EXTRACTION _____
SPARGING _____
REMEDIATION _____
OTHER (SPECIFY) ☒ **EXTENSOMETER**

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL		
Ft.	to Ft.		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	Ft.	to Ft.	TYPE	FILL	FILTER PACK (TYPE/SIZE)
MON	1		BLANK					0	40	SAND SLURRY	✓	
0	161.1	36/18	✓	ACCESS TB	1	SCH 40		0	95.5	HALLIBURTON	✓	
0	140	36/18	✓	BLCK PIPE	2	SCH 40		95.5	210	#8 GRD SAND	✓	
140	150	18	✓	STL STEEL	2		.020	210	507.5	HALLIBURTON	✓	
150	171.1	18	✓	BLCK PIPE	2	SCH 40		507.5	577	#8 GRD SAND	✓	
MON	2							577	796	HALLIBURTON	✓	

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed **Mike Dawson**

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND
CITY

CA
STATE

95695
ZIP

08/07/02
DATE SIGNED

133783-C57A
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 3

Owner's Well No. 7450

Date Work Began 7/11/2002, Ended 7/19/2002

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW134-02

Permit Date 6/25/2002

AUG 08 2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726724**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)		DRILLING METHOD	FLUID
		REVERSE	WATER
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	20	BROWN/YELLOW CLAY	
20	36	STICKY BROWN/YELLOW CLAY	
36	48	PALE OLIVE CLAY	
48	60	DARK YELLOW/BROWN CLAY	
60	80	SUBANGULAR TO ROUNDED GRAVEL	
80	100	SILTY SANDY CLAY	
100	133	SILTY SANDY CLAY WITH ROUNDED GRAVEL	
133	160	POORLY GRADED, ROUNDED TO SUBROUNDED GRAVEL	
160	190	DUSKY YELLOW/BROWN SILTY CLAY	
190	209	DUSKY YELLOW/BROWN SILTY CLAY WITH SIL AND SAND	
209	229	MEDIUM BROWN/YELLOW CLAY	
229	240	POORLY SORTED GRAVEL WITH VERY COARSE SAND	
240	250	GRAVEL	
250	260	YELLOW/BROWN CLAY	
260	270	BLUE/GREEN CLAY	
270	280	GRAVELLY CLAY	
280	290	BLUE/GREEN CLAY AND GRAVELLY SAND	
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320	330	BLUE/GREEN SILTY CLAY	
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589	689	BLUE/GREEN CLAY WITH COARSE SAND	

TOTAL DEPTH OF BORING 1020 (Feet)

TOTAL DEPTH OF COMPLETED WELL 974.2 (Feet)

WELL LOCATION	
Address .4 MI N OF C/R 33 & W OF C/R S	
City CA	
County GLENN	
APN Book 023	Page 190
Parcel 010	
Township 21 N	Range 2 W
Section 33	
Latitude	
DEG. MIN. SEC.	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	
WEST	
EAST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
<input checked="" type="checkbox"/> NEW WELL	
MODIFICATION/REPAIR	
— Deepen	
— Other (Specify)	
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
— Domestic — Public	
— Irrigation — Industrial	
MONITORING <input checked="" type="checkbox"/>	
TEST WELL	
CATHODIC PROTECTION	
HEAT EXCHANGE	
DIRECT PUSH	
INJECTION	
VAPOR EXTRACTION	
SPARGING	
REMEDIATION	
OTHER (SPECIFY) <input checked="" type="checkbox"/>	
EXTENSOMETER	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.		TYPE (✓)					Ft.	to Ft.	TYPE			
			BLANK	SCREEN	CON- DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)			
869	890	18		✓			MILLSLOT	4			0	40	SAND SLURRY
890	974.2	18	✓				BLACK PIPE	4	SCH 40		0	95.5	HALLIBURTON
											95.5	210	#8 GRD SAND
											210	507.5	HALLIBURTON
											507.5	577	#8 GRD SAND
											577	796	HALLIBURTON

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

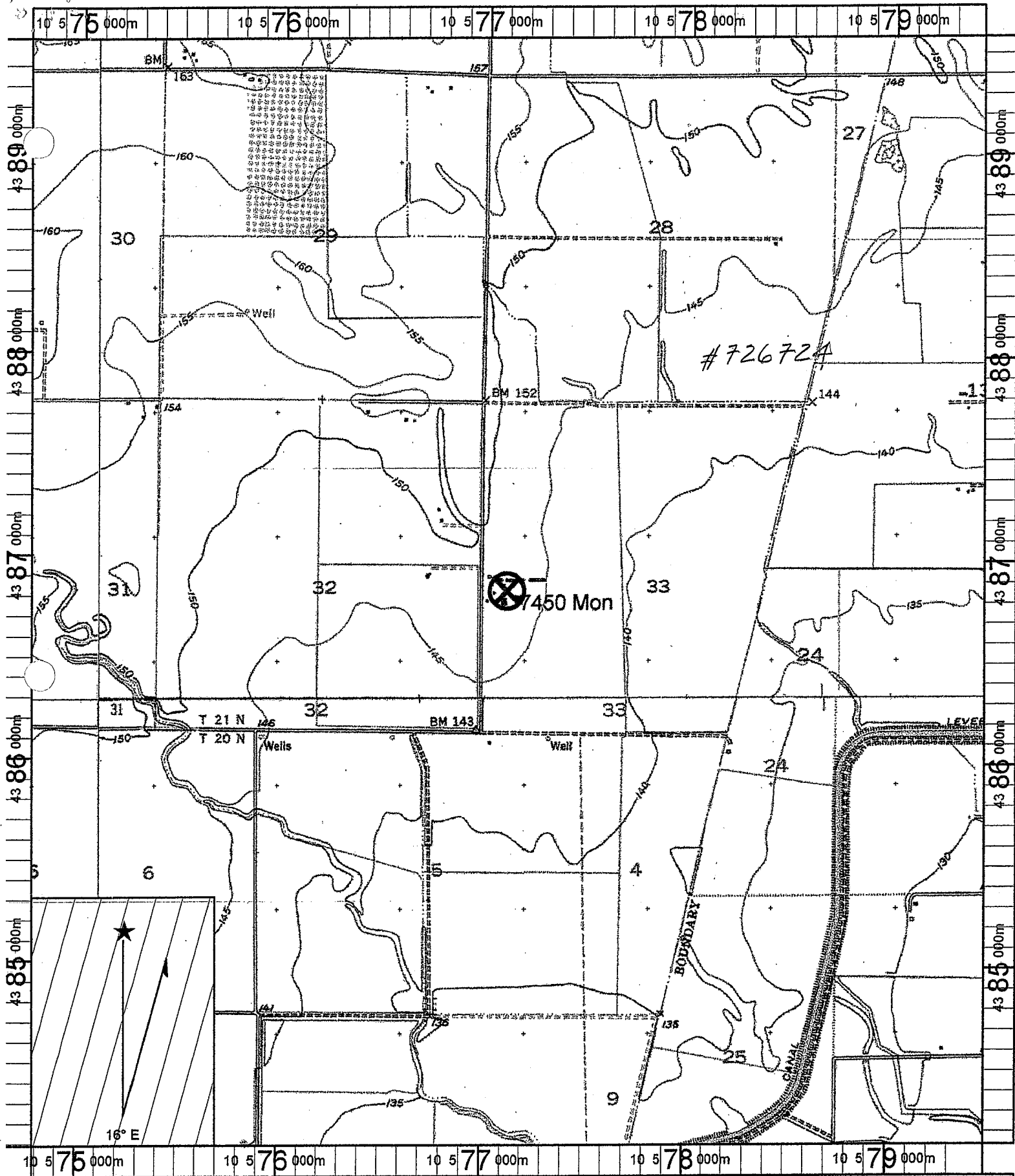
ZIP

08/07/02

DATE SIGNED

133783-C57A

C-57 LICENSE NUMBER



One: HAMILTON CITY
 Date: 8/7/2002
 Scale: 1 inch equals 2000 feet

Location: 10 577107 E 4386837 N
 Caption: Glenn County
 Job# 7450 Mon
 APN: 23-19-1

STATE OF CALIFORNIA - RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

PROJECT Glenn County AB 303 Monitoring Well Project
FEATURE Extensometer/Trip Completion Monitoring Well
LOCATION Glenn County, County Road S and County Road 30
UTM COORDINATES 577199, 4387045 NAD 83

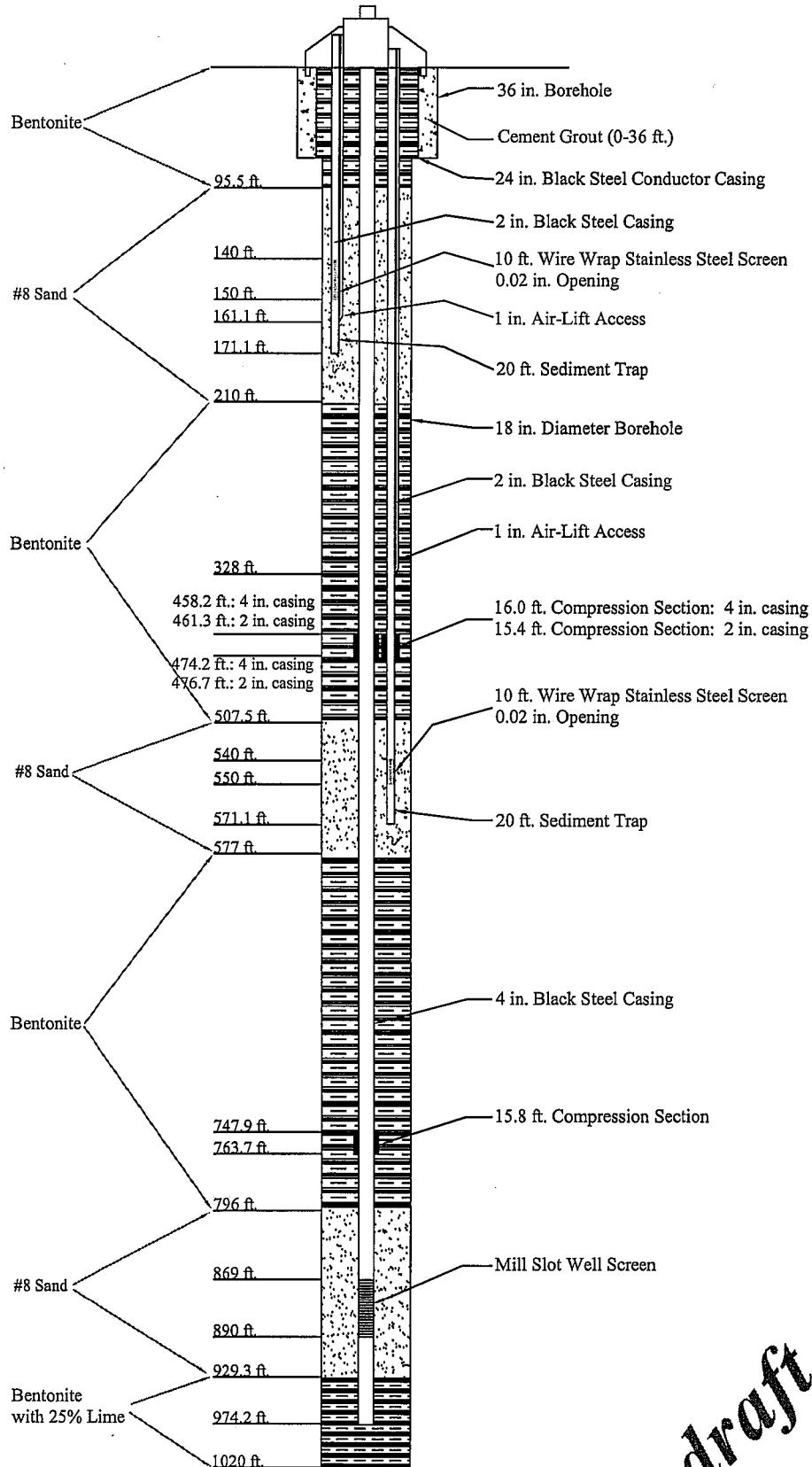
HOLE NUMBER GC AB 303-1
TOTAL DEPTH 1020 ft
DATE STARTED 7/12/02
DATE COMPLETED 7/24/02

NUMBER OF COMPLETIONS 3
TYPE OF HOLE Reverse Rotary
TYPE OF RIG
COMMENTS Test hole drilled to 1020 ft.; well completed to 974.2 ft.

CONTRACTOR Eaton Drilling
DRILL FOREMAN Gary Frost
INSPECTED BY Sutton, McManus & Lawrence



#726724



draft

21N/02W-36M

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in

No. 315494

Permit of Intent No. _____
Local Permit No. or Date B5768

State Well No. _____
Other Well No. 90215-1

(2) LOCATION OF WELL (See instructions): 47
County Glenn Owner's Well Number DMW-2
Well address if different from above _____
Township 21N Range 2W Section 36
Distance from cities, roads, railroads, fences, etc. _____
APN#: 23-08-041

(12) WELL LOG: Total depth 155 ft. Completed depth 145 ft.
from ft. to ft. Formation (Describe by color, character, size or material)
0 - 15 Brn sandy clay
15 - 25 Brn sandy clay and gravel
25 - 34 Grey clay and sand
34 - 40 Clay
40 - 55 Clay sand and gravel
55 - 68 Gravel
68 - 130 Gravel and clay
130 - 155 Gravel

See Attached

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic ☒
Irrigation ☐
Industrial ☐
Test Well ☐
Municipal ☐
Other ☒ (Describe) Monitoring

WELL LOCATION SKETCH

(5) EQUIPMENT:

Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:

Yes ☒ No ☐
Size 6 ☒ 12
Diameter of bore _____
Packed from 110 to 155 ft.

(7) CASING INSTALLED:

Steel ☒ Plastic ☐ Concrete ☐

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	120	6	3/16	120	140	.050
140	145	6	3/16			

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 110 ft.

Were strata sealed against pollution? Yes ☐ No ☐ Interval _____ ft.

Method of sealing _____

(10) WATER LEVELS:

Depth of first water, if known _____ ft.

Standing level after well completion _____ ft.

(11) WELL TESTS:

Was well test made? Yes ☐ No ☒ If yes, by whom? _____

Type of test Pump ☐ Bailer ☐ Air lift ☐
to water at start of test _____ ft. At end of test _____ ft.

Discharge _____ gal/min after _____ hours Water temperature _____

Chemical analysis made? Yes ☐ No ☒ If yes, by whom? _____

Was electric log made Yes ☐ No ☒ If yes, attach copy to this report

Work started 3-22 19 89 Completed 3-24 19 89

WELL DRILLER'S STATEMENT:

153
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Michael B. Maggiora (Well Driller)

NAME Maggiora Bros. Drilling, Inc.

Address 595 Airport Blvd. (Person, firm, or corporation) (Typed or printed)

City Watsonville, CA ZIP 95076

License No. 249957 Date of this report 6-30-89

MAR 02 2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726894**

Page 1 of 1

Owner's Well No. 7617 MON

Date Work Began 12/10/2003, Ended 12/17/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 188-03 Permit Date 12/16/2003

DWR USE ONLY -- DO NOT FILL IN	
21N/03W-01M	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	2	TOPSOIL
2	70	SAND AND GRAVEL
70	82	YELLOW BROWN CLAY W/SAND AND GRAVEL
82	100	SAND AND GRAVEL
100	190	YELLOW BRWN CLY W/SND AND GRVL STRKS
190	230	BLUE CLAY W/SAND AND GRAVEL STREAKS
230	254	SAND AND GRAVEL
254	324	BLUE CLAY WITH SAND
324	340	SAND AND GRAVEL
340	780	BLUE CLAY W/SAND AND GRAVEL STREAKS
780	800	BLACK SAND AND GRAVEL
800	808	DARK GRAY BRITTLE CLAY
808	830	BLACK SAND AND GRAVEL
830	894	BRITTLE DARK GRAY CLAY WITH SAND
894	920	BLACK SAND AND GRAVEL
920	1038	LIGHT GRAY CLAY W/SAND AND GRVL STRKS
1038	1066	BLACK SAND WITH SMALL GRAVEL
1066	1100	LIGHT GRAY CLAY WITH SAND STREAKS

WELL LOCATION
Address **50 FT N OF C/R 25 & 3.5 MI E OF I-5**
City **CA**
County **GLENN**
APN Book **024** Page **020** Parcel **015**
Township **21 N** Range **3 W** Section **1**
Latitude

DEG. MIN. SEC.	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	EAST
WEST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	

ACTIVITY (✓)
<input checked="" type="checkbox"/> NEW WELL
MODIFICATION/REPAIR
<input type="checkbox"/> Deepen
<input type="checkbox"/> Other (Specify)
DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
PLANNED USES (✓)
WATER SUPPLY
<input type="checkbox"/> Domestic <input type="checkbox"/> Public
<input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial
MONITORING <input checked="" type="checkbox"/>
TEST WELL <input type="checkbox"/>
CATHODIC PROTECTION <input type="checkbox"/>
HEAT EXCHANGE <input type="checkbox"/>
DIRECT PUSH <input type="checkbox"/>
INJECTION <input type="checkbox"/>
VAPOR EXTRACTION <input type="checkbox"/>
SPARGING <input type="checkbox"/>
REMEDATION <input type="checkbox"/>
OTHER (SPECIFY) <input type="checkbox"/>

TOTAL DEPTH OF BORING **1530** (Feet)TOTAL DEPTH OF COMPLETED WELL **255** (Feet)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE		ANNULAR MATERIAL							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)			GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE					
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to	Ft.	CE- MENT (✓)
0		235	6-5/8	✓				PVC	2	SCH 40			0	204	✓			SAND SLURRY
235		245	6-5/8		✓			PVC	2	SCH 40	.030		204	263			✓	#8 GRD SAND
245		255	6-5/8	✓				PVC	2	SCH 40			263	271		✓		CHIPS
													271	360			✓	#8 GRD SAND
													360	1530	✓			SAND SLURRY

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

12/18/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

Page ____ of ____

Owner's Well No. _____

Date Work Began 3/20/02

Ended 3/29/02

No. 801404ABC

Local Permit Agency Glenn Co. Health Dept.

Permit No. _____

Permit Date 3/12/02

21N/03W-23

DWR USE ONLY - DO NOT FILL IN

21N03W23D(1+3)41

STATE WELL NO./STATION NO.

TRIPLET COMPLETION

LATITUDE WELL LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (°)		VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DRILLING METHOD	FLUID		
Fl.	to	Fl.	DESCRIPTION		
			Describe material, grain size, color, etc.		
0	20		med. to coarse Sand		
20	30		gravel		
30	38		gravel w/ fine to coarse Sand		
38	39		gravel and Sand		
39	40		clay		
40	60		gravel with fine to coarse Sand		
60	70		gravel & Sand		
70	80		gravel w/ med. Sand & clay		
80	140		lt Brown to tan Clay w/ gravel		
140	150		Sand w/ gravel & clay		
150	160		Gravel & med. to coarse Sand		
160	170		gravel & tan to Brown Clay		
170	180		tan/Brown clay w/ gravel		
180	190		clay & Gravel w/ med. Sand		
190	220		Gravel w/ tan to Brown Clay		
220	320		clay w/ minor amounts of gravel		
320	330		gravel w/ tan/Brown clay slightly gravelly		
330	340		Gravel w/ tan/Brown clay		
340	360		clay		
360	370		gravel w/ minor amounts of clay & Sand		
370	460		clay w/ minor amounts of gravel		
460	500		clay w/ minor amounts of Sand & gravel		

WELL LOCATION
Address Co Road 30
City Artois
County Glenn
APN Book 024 Page 050 Parcel D14-9
Township _____ Range _____ Section _____
Latitude _____ Longitude _____

LOCATION SKETCH
NORTH

ACTIVITY (°)
☒ NEW WELL
MODIFICATION/REPAIR
____ Deepen
____ Other (Specify)
____ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
PLANNED USES (°)
WATER SUPPLY
____ Domestic ____ Public
____ Irrigation ____ Industrial
MONITORING ☒
TEST WELL ____
CATHODIC PROTECTION ____
HEAT EXCHANGE ____
DIRECT PUSH ____
INJECTION ____
VAPOR EXTRACTION ____
SPARGING ____
REMEDIAL ____
OTHER (SPECIFY) ____

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 420 (Feet) 420'

TOTAL DEPTH OF COMPLETED WELL 393.5 (Feet)

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE	ANNULAR MATERIAL			
		TYPE (°)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)		TYPE	CE-MENT (°)	BEN-TONITE (°)	FILL (°)
Fl. to Fl.		BLANK SCREEN CON-DUCTOR FILL PIPE					Fl. to Fl.				
1. 393, 363, 373, Surface	X		Steel	2"	Sch 40	—	420 339	#8 Sand			
373 363	X		S.S.	2"	Sch 40	0.020	339 200	#8 Sand	✓		
2. 171, 142, 160, 152, 142, 0X	X		Steel	2"	Sch 40	—	200 127	#8 Sand			
170, 152, 160, 142	X		S.S.	2"	Sch 40	0.020	127 84	#8 Sand	✓		
3. 73, 42, 72, Surface	X		Steel	2"	Sch 40	—	84 33	#8 Sand			
72 42	X		S.S.	2"	Sch 40	0.020	33 0	#8 Sand	✓		

ATTACHMENTS (°)

- ____ Geologic Log
- ____ Well Construction Diagram
- ____ Geophysical Log(s)
- ____ Soil/Water Chemical Analyses
- ____ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Spectrum Exploration Inc
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS P.O. Box 471 CITY Zamora CA STATE CA ZIP 95698
Signed Charles Borchers DATE SIGNED 4/18/02 C-57 LICENSE NUMBER 512268
WELL DRILLER/AUTHORIZED REPRESENTATIVE

Department of Water Resources
Van Tol Deep

801404

Casing

Deep Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
393.5- 373		Blank	Steel	2"	Sch 40	
373 - 363		Screen	Steel	2"	Sch 40	.020
363 - +1'		Blank	Steel	2"	Sch 40	

Middle Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
191.5 - 170		Blank	Steel	2"	Sch 40	
170 - 160		Screen	Steel	2"	Sch 40	.020
160 - 152		Blank	Steel	2"	Sch 40	
152 - 142		Screen	Steel	2"	Sch 40	.020
142 - +1.5'		Blank	Steel	2"	Sch 40	

Shallow Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
93.5 - 72		Blank	Steel	2"	Sch 40	
72 - 42		Screen	Steel	2"	Sch 40	.020
42 - +2		Blank	Steel	2"	Sch 40	

Annular Material

<u>Ft. to Ft.</u>	<u>Type</u>
393.5 - 353	#8 Sand
353 - 345	#60 Sand
345 - Surface	Cement Grout

801 404

STATE WELL NUMBERS: 21N03W23D01M-Deer Creek
21N03W23D02M-Middle Zone
21N03W23D03M-Shallow Zone

STATE OF CALIFORNIA-RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

PROJECT Stony Creek Recharge Pilot Project
FEATURE Triple Completion Monitoring Well
LOCATION Clemon County, County Rd 27 and County Rd M
UTM COORDINATES UTM 10 NAD 83 570561, 4391143

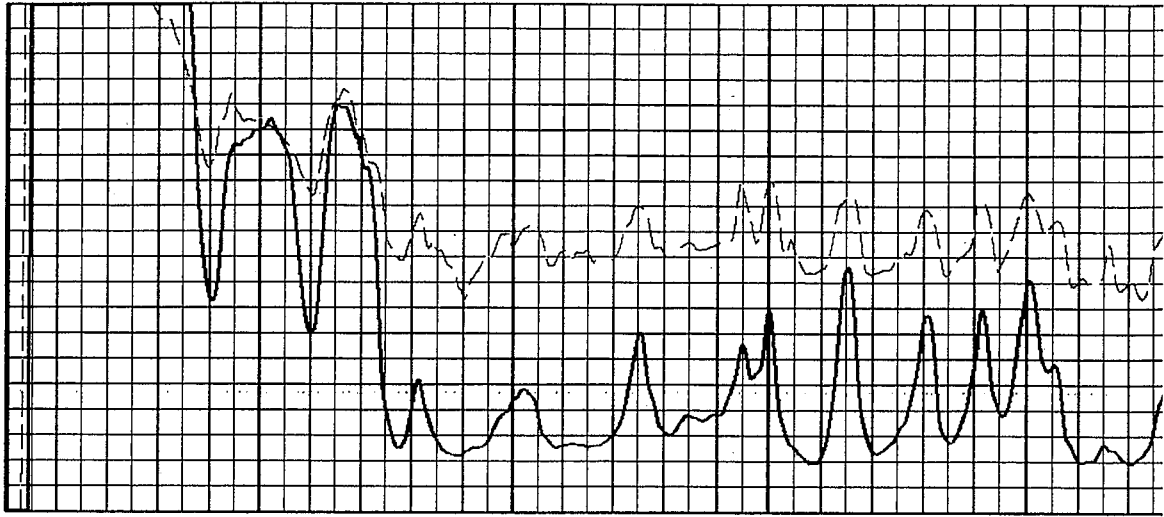
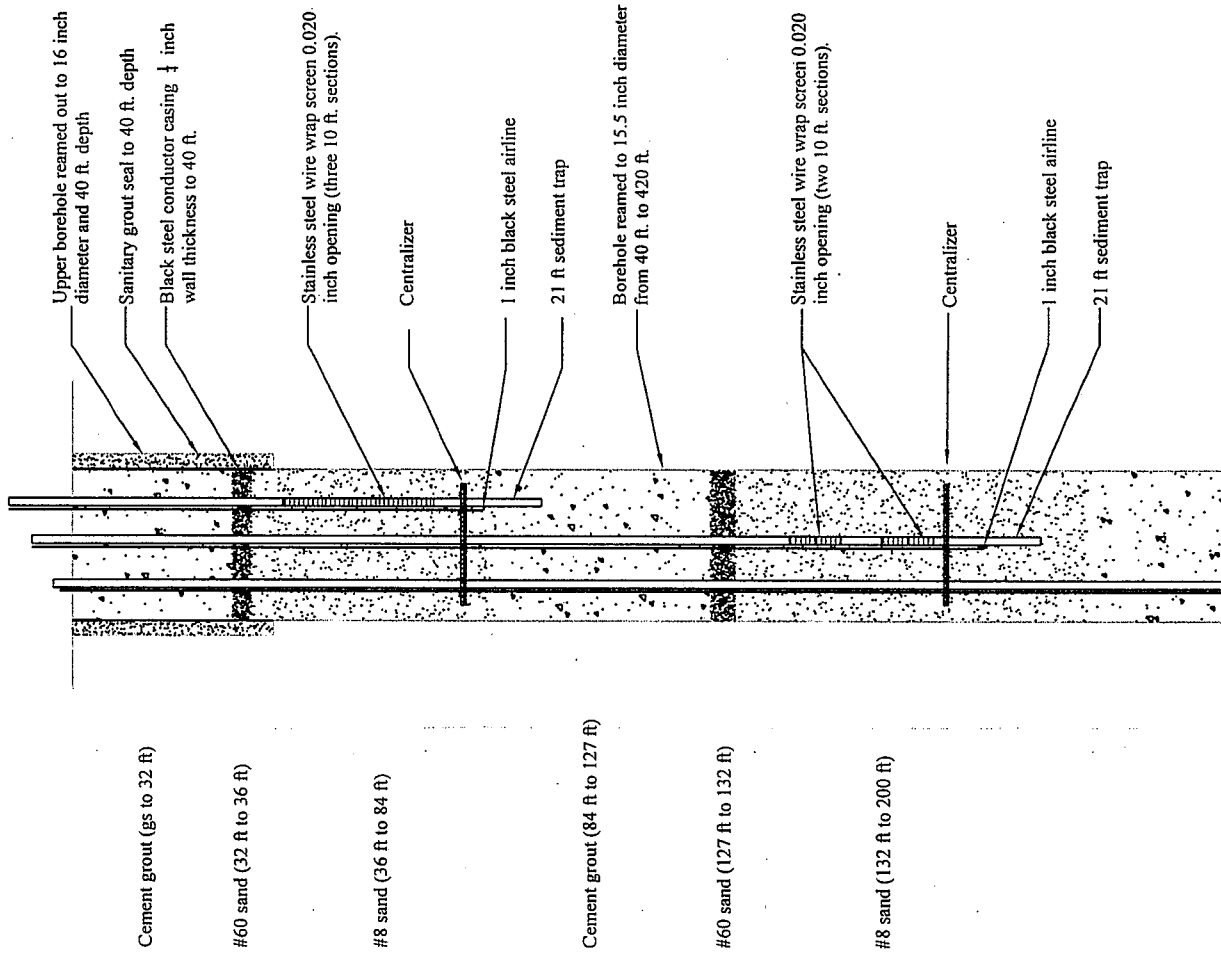
HOLE NUMBER Well A - Van Tol Site
TOTAL DEPTH 420 ft
DATE STARTED 3/20/02
DATE COMPLETED 3/29/02

NUMBER OF COMPLETIONS 3
TYPE OF HOLE Direct Rotary
TYPE OF RIG Ingersoll Rand
COMMENTS Test hole drilled to 500 ft.; well completed to 393 ft.

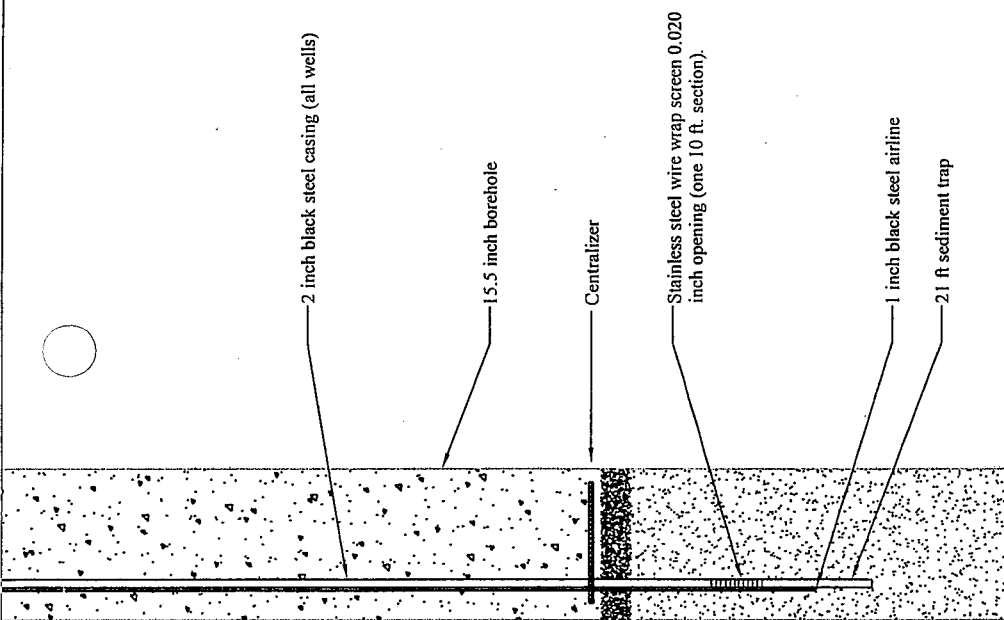
CONTRACTOR Spectrum Exploration, Inc.
DRILL FOREMAN Randy Griner
INSPECTED BY Kelly Sutton



DEPTH (ft.)	LITHOLOGY	DESCRIPTION
0		Poorly graded medium sand, sub-angular to sub-rounded
20		Poorly graded gravel with fine to med. sand of metam. origin, sub-angular to sub-rounded clasts
40		Gravel and sand
45		Clay
60		Gravel with fine to coarse-grained sand
80		Gravel and fine to coarse-grained sand
100		Gravel with minor amount of clay and sand
120		Lt. brown to tan clay with gravel and sand
140		Sand with gravel and clay
160		Gravel and medium to coarse sand
180		Gravel and tan to brown clay
200		Tan/brown clay with gravel
220		Tan/brown clay with gravel and med. sand
240		Gravel with tan to brown clay



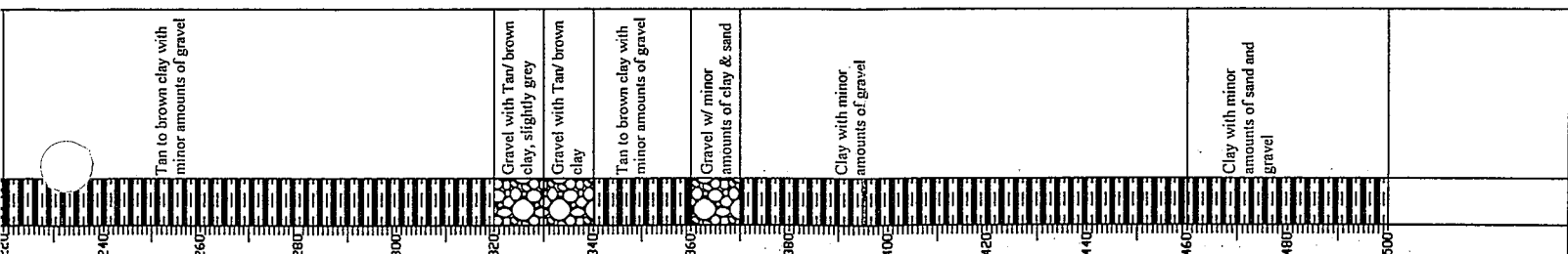
#801404



Cement grout (200 ft to 339 ft)

#60 sand (339 ft to 345 ft)

#8 sand (345 ft to 420 ft)



ORIGINAL
File with DWR

Page 1 of 6

MAY 31 2005

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **816224**

DWR USE ONLY -- DO NOT FILL IN

212/03W-341

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Owner's Well No. 7786

Date Work Began 3/7/2005, Ended 3/14/2005

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. IRW280-04

Permit Date 11/4/2004

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 6	TOPSOIL
6 24	SAND AND SMALL GRAVEL
24 33	TAN CLAY
33 45	SANDY BROWN CLAY WITH SAND AND GRAVEL STREAKS
45 90	SAND AND GRAVEL WITH BROWN CLAY STREAKS
90 145	SANDY YELLOW CLAY
145 152	SAND AND GRAVEL
152 210	SANDY YELLOW CLAY
210 333	TAN CLAY WITH SAND
333 342	SAND AND SMALL GRAVEL
342 400	TAN CLAY WITH SAND
400 440	TAN CLAY WITH SAND AND GRAVEL STREAKS
440 580	TAN CLAY WITH SAND
580 585	SAND AND GRAVEL
585 620	TAN CLAY WITH SAND
620 635	SAND AND GRAVEL
635 650	SANDY TAN CLAY
650 656	SAND AND GRAVEL
656 678	SANDY TAN CLAY
678 688	SAND AND GRAVEL
688 750	SANDY TAN CLAY
750 860	TAN CLAY
860 960	SANDY TAN CLAY WITH SAND AND GRAVEL STREAKS
960 1100	BROWN CLAY WITH HARD CLAY STREAKS
1100 1140	BLUE CLAY WITH SAND
1140 1170	SAND WITH BLUE CLAY STREAKS
1170 1200	BLUE CLAY WITH BRITTLE CLAY STREAKS

TOTAL DEPTH OF BORING 1020 (Feet)

TOTAL DEPTH OF COMPLETED WELL 980 (Feet)

WELL LOCATION

Address .1 MI NOF RD 33 & .4 MI WOF DETOUR RD

City CA

County GLENN

APN Book 024 Page 130 Parcel 009

Township 21 N Range 3 W Section 34

Latitude DEG. MIN. SEC. LONGITUDE DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public

Irrigation Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
		TYPE (✓)	TYPE (✓)	TYPE (✓)	TYPE (✓)	TYPE (✓)			CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
ZONE 1	1											
0 60	12	✓							✓			SAND SLURRY
60 70	12		✓				.030			✓		BENTONITE C
70 80	12	✓									✓	SR#8 SAND
80 100										✓		BENTONITE C
100 105									✓			SAND SLURRY
105 135											✓	GRAVEL FILL
135 560												
ZONE 2	2											
0 620	12/10	✓										
620 1200												

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

Signed *Mark Damon*
WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND
CITY

CA
STATE

95695
ZIP

05/23/05
DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 6

Owner's Well No. 7786

Date Work Began 3/7/2005, Ended 3/14/2005

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. IRW280-04

Permit Date 11/4/2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **816224**

DWR USE ONLY -- DO NOT FILL IN	
21N/03W-34	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 to 6	TOPSOIL
6 to 24	SAND AND SMALL GRAVEL
24 to 33	TAN CLAY
33 to 45	SANDY BROWN CLAY WITH SAND AND GRAVEL STREAKS
45 to 90	SAND AND GRAVEL WITH BROWN CLAY STREAKS
90 to 145	SANDY YELLOW CLAY
145 to 152	SAND AND GRAVEL
152 to 210	SANDY YELLOW CLAY
210 to 333	TAN CLAY WITH SAND
333 to 342	SAND AND SMALL GRAVEL
342 to 400	TAN CLAY WITH SAND
400 to 440	TAN CLAY WITH SAND AND GRAVEL STREAKS
440 to 580	TAN CLAY WITH SAND
580 to 585	SAND AND GRAVEL
585 to 620	TAN CLAY WITH SAND
620 to 635	SAND AND GRAVEL
635 to 650	SANDY TAN CLAY
650 to 656	SAND AND GRAVEL
656 to 678	SANDY TAN CLAY
678 to 688	SAND AND GRAVEL
688 to 750	SANDY TAN CLAY
750 to 860	TAN CLAY
860 to 960	SANDY TAN CLAY WITH SAND AND GRAVEL STREAKS
960 to 1100	BROWN CLAY WITH HARD CLAY STREAKS
1100 to 1140	BLUE CLAY WITH SAND
1140 to 1170	SAND WITH BLUE CLAY STREAKS
1170 to 1200	BLUE CLAY WITH BRITTLE CLAY STREAKS

TOTAL DEPTH OF BORING 1020 (Feet)

TOTAL DEPTH OF COMPLETED WELL 980 (Feet)

WELL LOCATION
Address 1 MI NOF RD 33 & 4 MI WOF DETOUR RD
City CA
County GLENN
APN Book 024 Page 130 Parcel 009
Township 21 N Range 3 W Section 34
Latitude

NORTH	LOCATION SKETCH	WEST	EAST	SOUTH	DEG. MIN. SEC.	DEG. MIN. SEC.
					ACTIVITY (✓) <input checked="" type="checkbox"/> NEW WELL MODIFICATION/REPAIR — Deepen — Other (Specify) — DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG") PLANNED USES (✓) WATER SUPPLY — Domestic — Public — Irrigation — Industrial MONITORING <input checked="" type="checkbox"/> TEST WELL — CATHODIC PROTECTION — HEAT EXCHANGE — DIRECT PUSH — INJECTION — VAPOR EXTRACTION — SPARGING — REMEDIATION — OTHER (SPECIFY) —	

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)						DEPTH FROM SURFACE		ANNULAR MATERIAL				
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)			GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft	to	Ft	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									CE- MENT (✓)
620	630	10		✓			PVC F-480	2.5	SCH 80	.030	560	590	✓		SAND SLURRY
630	650	10	✓				PVC F-480	2.5	SCH 80		590	720		✓	SRI#8 SAND
650	660	10		✓			PVC F-480	2.5	SCH 80	.030	720	900	✓		SAND SLURRY
660	680	10	✓				PVC F-480	2.5	SCH 80		900	1020		✓	SRI#8 SAND
680	690	10		✓			PVC F-480	2.5	SCH 80	.030					
690	710	10	✓				PVC F-480	2.5	SCH 80						

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

Mark D. Davison
WELL DRILLER/AUTHORIZED REPRESENTATIVE

05/23/05

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 6

Owner's Well No. 7786

Date Work Began 3/7/2005, Ended 3/14/2005

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. IRW280-04

Permit Date 11/4/2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **816224**

DWR USE ONLY — DO NOT FILL IN

21W / 03W - 34

STATE WELL NO. / STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE		DESCRIPTION
Ft. to Ft.		Describe material, grain, size, color, etc.
0	6	TOPSOIL
6	24	SAND AND SMALL GRAVEL
24	33	TAN CLAY
33	45	SANDY BROWN CLAY WITH SAND AND GRAVE STREAKS
45	90	SAND AND GRAVEL WITH BROWN CLAY STREA
90	145	SANDY YELLOW CLAY
145	152	SAND AND GRAVEL
152	210	SANDY YELLOW CLAY
210	333	TAN CLAY WITH SAND
333	342	SAND AND SMALL GRAVEL
342	400	TAN CLAY WITH SAND
400	440	TAN CLAY WITH SAND AND GRAVEL STREAKS
440	580	TAN CLAY WITH SAND
580	585	SAND AND GRAVEL
585	620	TAN CLAY WITH SAND
620	635	SAND AND GRAVEL
635	650	SANDY TAN CLAY
650	656	SAND AND GRAVEL
656	678	SANDY TAN CLAY
678	688	SAND AND GRAVEL
688	750	SANDY TAN CLAY
750	860	TAN CLAY
860	960	SANDY TAN CLAY WITH SAND AND GRAVEL STREAKS
960	1100	BROWN CLAY WITH HARD CLAY STREAKS
1100	1140	BLUE CLAY WITH SAND
1140	1170	SAND WITH BLUE CLAY STREAKS
1170	1200	BLUE CLAY WITH BRITTLE CLAY STREAKS

TOTAL DEPTH OF BORING 1020 (Feet)

TOTAL DEPTH OF COMPLETED WELL 980 (Feet)

WELL LOCATION

Address 1 MI NOF RD 33 & 4 MI WOF DETOUR RD

City CA

County GLENN

APN Book 024 Page 130 Parcel 009

Township 21 N Range 3 W Section 34

Latitude _____

DEG. MIN. SEC. _____

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify) _____

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL _____

CATHODIC PROTECTION _____

HEAT EXCHANGE _____

DIRECT PUSH _____

INJECTION _____

VAPOR EXTRACTION _____

SPARGING _____

REMEDIATION _____

OTHER (SPECIFY) _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)							
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE					
ZONE		3									
0		930	12/10	✓				PVC F-480	2.5	SCH 80	
930		960	10		✓			PVC F-480	2.5	SCH 80	.030
960		980	10	✓				PVC F-480	2.5	SCH 80	

DEPTH FROM SURFACE			ANNULAR MATERIAL			
			TYPE			
Ft.	to	Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0		40	✓			SAND SLURRY
40		45		✓		BENTONITE C
45		100			✓	SRI#8 SAND
100		105		✓		BENTONITE C
105		135	✓			SAND SLURRY
135		560			✓	GRAVEL FILL

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

Mark Damion
WELL DRILLER/AUTHORIZED REPRESENTATIVE

05/23/05

DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 1 of 2

Owner's Well No. 7449

Date Work Began 8/19/2002, Ended 8/23/2002

Local Permit Agency GLENN CNTY HEALTH DEPT

Permit No. MW133-02 Permit Date 6/25/2002

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726739, A

DWR USE ONLY		DO NOT FILL IN	
21N/04W-12M			
STATE WELL NO./STATION NO.			
LATITUDE		LONGITUDE	
APN/TRS/OTHER			

GEOLOGIC LOG

ORIENTATION (✓)		VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DRILLING METHOD ROTARY FLUID MUD			
Ft. to Ft.		DESCRIPTION			
		Describe material, grain, size, color, etc.			
0	10	WELL GRADED SAND AND GRAVEL			
10	20	LIGHT BROWN CLAY			
20	30	LIGHT BROWN CLAY W/FINE SAND AND GRVL			
30	40	WELL GRADED GRVL W/SND AND LT BRN CLY			
40	50	WELL GRADED SND AND GRVL W/SOME CLY			
50	60	LIGHT BROWN CLAY WITH SAND AND GRAVEL			
60	70	BROWN CLAY WITH SAND AND GRAVEL			
70	80	TAN CLAY			
80	100	BROWN CLAY			
100	110	LIGHT BROWN CLAY			
110	120	LIGHT BROWN CLY W/SAND, GRAVEL, SILT			
120	130	LT BRN CLY W/FINE SILTSTONE, SAND, GRVL			
130	140	LT BROWN CLAY W/FINE SAND AND GRAVEL			
140	160	LT BRN CLAY W/SAND, GRAVEL, SILTSTONE			
160	170	SAND WITH LIGHT BROWN CLAY			
170	190	SILTSTONE WITH TAN CLAY AND SAND			
190	200	FINE SAND WITH COARSE SAND AND TAN CLY			
200	220	LT BRN CLAY W/SILTSTONE, SAND, GRAVEL			
220	230	WELL GRADED SAND WITH CLAY			
230	250	POORLY GRADED SAND AND GRAVEL			
250	260	PPORLY GRADED SAND WITH FINE GRAVEL			
260	270	POORLY GRADED SAND WITH CLAY			
270	280	WELL GRADED SND W/FINE GRVL, TAN CLAY			
280	300	SILTSTONE WITH SAND			
300	310	SILT WITH SAND AND GRAVEL			
310	320	POORLY GRADED SAND WITH CLAY			
320	340	WELL GRADED SAND WITH FINE GRAVEL			
340	350	WELL GRADED SAND W/SILTSTONE, TAN CLAY			
350	360	SILT WITH SAND, GRAVEL, AND CLAY			
360	400	GRAVEL WITH SILTSTONE			

WELL LOCATION	
Address SOF C/R 25 & EOF C/R D	
City CA	
County GLENN	
APN Book 024	Page 200 Parcel 210
Township 21 N	Range 4 W Section 12
Latitude	
DEG. MIN. SEC.	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	SOUTH
WEST	
EAST	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
NEW WELL	
MODIFICATION/REPAIR	
Deepen	
Other (Specify)	
DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
Domestic Public	
Irrigation Industrial	
MONITORING	
TEST WELL	
CATHODIC PROTECTION	
HEAT EXCHANGE	
DIRECT PUSH	
INJECTION	
VAPOR EXTRACTION	
SPARGING	
REMEDIATION	
OTHER (SPECIFY)	

TOTAL DEPTH OF BORING 640 (Feet)
TOTAL DEPTH OF COMPLETED WELL 629 (Feet)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE
DEPTH OF STATIC
WATER LEVEL (Ft.) & DATE MEASURED
ESTIMATED YIELD * (GPM) & TEST TYPE
TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)
May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL					
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to	Ft.
ZONE		1									0		208	✓			SAND SLURRY
0		240	12-1/4				ACCESS TB	1			208		219		✓		CHIPS
0		247	12-1/4	✓			SCH 40	2			219		323			✓	#8 GRD SAND
247		257	12-1/4		✓		STL STEEL	2		.030	323		548	✓			SAND SLURRY
257		278	12-1/4	✓			SCH 40	2			548		559		✓		CHIPS
ZONE		2									559		640			✓	#8 GRD SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND
CITY

CA
STATE

95695
ZIP

10/01/02
DATE SIGNED

133783-C57A
C-57 LICENSE NUMBER

OCT 22 2002

ORIGINAL
File with DWR

Page 2 of 2

Owner's Well No. 7449

Date Work Began 8/19/2002, Ended 8/23/2002

Local Permit Agency GLENN CNTY HEALTH DEPT

Permit No. MW133-02 Permit Date 6/25/2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726739**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO / STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE
Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

400	510	SILTSTONE, SAND WITH GRAVELS
510	530	COARSE SAND
530	540	GRAVEL
540	550	GRAVEL WITH COARSE SAND
550	560	SILTSTONE WITH GRAVEL AND SAND
560	570	COARSE SAND
570	580	MEDIUM GRAINED SAND
580	640	COARSE SAND AND GRAVEL

WELL LOCATION
Address **SOF C/R 25 & EOF C/R D**

City **CA**

County **GLENN**

APN Book **024** Page **200** Parcel **210**

Township **21 N** Range **4 W** Section **12**

Latitude
DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen
☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING **640** (Feet)

TOTAL DEPTH OF COMPLETED WELL **629** (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL					
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to	Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to	Ft.
0		240					ACCESS TB	1			0		208	✓			SAND SLURRY
0		598		✓			SCH 40	2			208		219		✓		CHIPS
598		608			✓		STL STEEL	2		.030	219		323			✓	#8 GRD SAND
608		629		✓			SCH 40	2			323		548	✓			SAND SLURRY
											548		559		✓		CHIPS
											559		640			✓	#8 GRD SAND

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

WOODLAND

CA

95695

ADDRESS

CITY

STATE

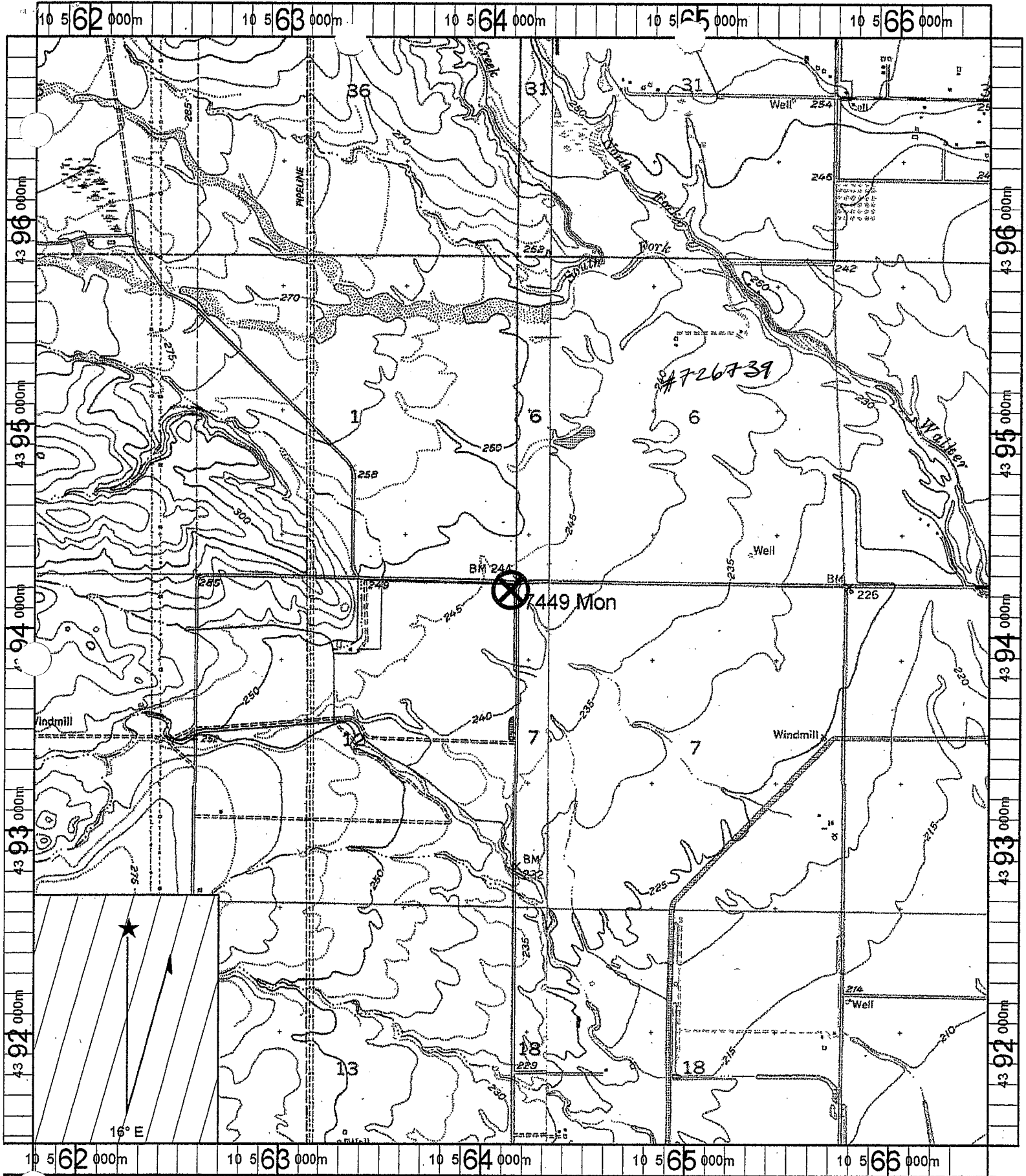
ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

10/01/02
DATE SIGNED

133783-C57A
C-57 LICENSE NUMBER



Name: FRUTO NE
 Date: 6/21/2002
 Scale: 1 inch equals 2000 feet

Caption: Glenn County
 Job# 7449
 APN: 24-200-21

ORIGINAL
File with DWR

JAN 08 2009

WELL COMPLETION REPORT

STATE OF CALIFORNIA
Refer to Instruction Pamphlet

No. **E0103388**

Page 1 of 3

Owner's Well No. 8434

Date Work Began 11/23/2009, Ended 12/3/2009

Local Permit Agency Glenn County Health Dept

Permit No. MW 319-09

Permit Date 11/19/2009

DWR USE ONLY -- DO NOT FILL IN

21N/04W-12

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE

Ft. to Ft.

DESCRIPTION

Describe material, grain, size, color, etc.

0	5	Top soil
5	65	Sand and gravel
65	170	Sandy brown clay
170	180	Sand and gravel
180	230	Sandy brown clay
230	260	Sand and gravel
260	275	Sandy brown clay
275	280	Sand and gravel
280	370	Sandy brown clay
370	380	Sand and gravel
380	515	Sandy blue clay
515	540	Sand with small gravel
540	650	Sandy blue clay with small gravel
650	879	Sandy blue clay
879	900	Small gravel
900	950	Sandy blue clay
950	1080	Black sand

TOTAL DEPTH OF BORING **1080** (Feet)

TOTAL DEPTH OF COMPLETED WELL **1070** (Feet)

WELL LOCATION

Address **70' Sof Road 25 & 70' Wor Road D**

City **CA**

County **GLENN**

APN Book **024** Page **200** Parcel **021**

Township **21 N** Range **4 W** Section **12**

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

*Big Farms
'w
Replacement*

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic

Public

Irrigation

Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE		ANNULAR MATERIAL			
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS			SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to Ft.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE				CE-MENT (✓)	BEN-TONITE (✓)		FILL (✓)	FILTER PACK (TYPE/SIZE)	
Zone	1														
0	520	10-3/4	✓				PVC	2.5	SCH 80		✓			Sand Slurry	
520	530	10-3/4		✓			PVC	2.5	SCH 80	.030		✓		Bentonite Seal	
530	590	10-3/4	✓				PVC	2.5	SCH 80				✓	SRI#8 Sand	
590	600	10-3/4		✓			PVC	2.5	SCH 80	.030		✓		Bentonite Seal	
600	630	10-3/4	✓				PVC	2.5	SCH 80				✓	SRI#8 Sand	
												✓		Bentonite Seal	

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed *Mark Damion*

WELL DRILLER/AUTHORIZED REPRESENTATIVE

12/31/09

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER

ORIGINAL JAN 08 2009

File with DWR

Page 3 of 3

Owner's Well No. 8434

Date Work Began 11/23/2009, Ended 12/3/2009

Local Permit Agency Glenn County Health Dept

Permit No. MW 319-09 Permit Date 11/19/2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. E0103388

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

 ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE ☐ (SPECIFY)
 DRILLING METHOD ROTARY FLUID MUD

 DEPTH FROM SURFACE
 Ft. to Ft. DESCRIPTION Describe material, grain, size, color, etc.

0	5	Top soil
5	65	Sand and gravel
65	170	Sandy brown clay
170	180	Sand and gravel
180	230	Sandy brown clay
230	260	Sand and gravel
260	275	Sandy brown clay
275	280	Sand and gravel
280	370	Sandy brown clay
370	380	Sand and gravel
380	515	Sandy blue clay
515	540	Sand with small gravel
540	650	Sandy blue clay with small gravel
650	879	Sandy blue clay
879	900	Small gravel
900	950	Sandy blue clay
950	1080	Black sand

WELL LOCATION

Address 70' Sof Road 25 & 70' Wor Road DCity CACounty GLENNAPN Book 024 Page 200 Parcel 021Township 21 N Range 4 W Section 12

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen☐ Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public☐ Irrigation ☐ IndustrialMONITORING ☒TEST WELL ☐CATHODIC PROTECTION ☐HEAT EXCHANGE ☐DIRECT PUSH ☐INJECTION ☐VAPOR EXTRACTION ☐SPARGING ☐REMEDICATION ☐OTHER (SPECIFY) ☐

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 1080 (Feet)TOTAL DEPTH OF COMPLETED WELL 1070 (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)
1030		1050	8-3/4	✓			PVC	2.5	SCH 80	.030					
1050		1070	8-3/4	✓			PVC	2.5	SCH 80						

ATTACHMENTS (✓)

- ☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

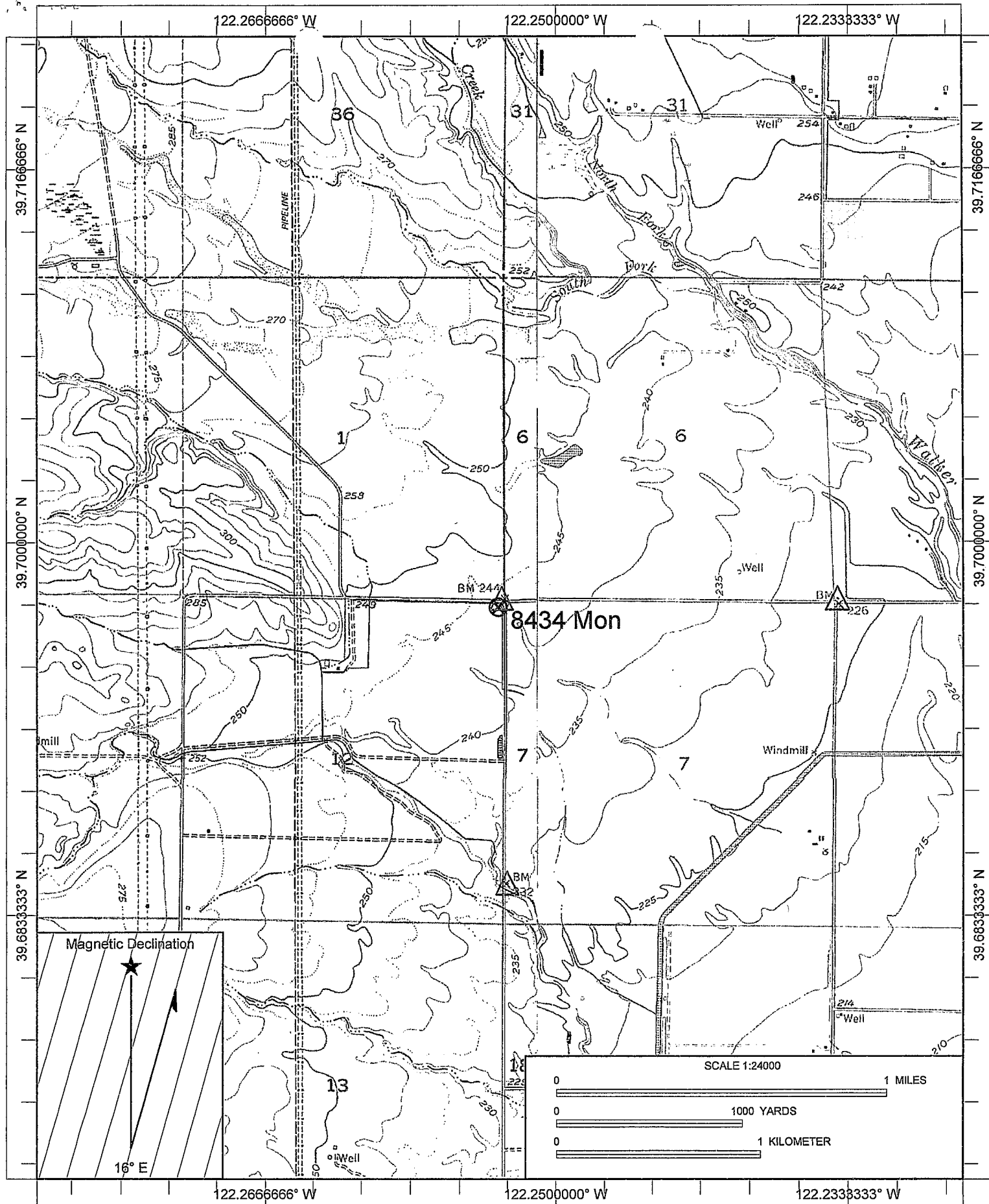
95695

ZIP

Signed Mark D...

WELL DRILLER/AUTHORIZED REPRESENTATIVE

12/31/09
DATE SIGNEDC57 A HIC - 13378
C-57 LICENSE NUMBER



Name: FRUTO NE
 Date: 11/17/2009
 Scale: 1 inch equals 2000 feet

Caption: DWR (Big W) - Job# 8434 Mon
 APN: 024-200-021
 T21N R4W s12

ORIGINAL
File with DWR

JAN 08 2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E0103616** A.B.C.D

DWR USE ONLY — DO NOT FILL IN

22N/01W-29

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Page 1 of 5

Owner's Well No. **8432**

Date Work Began **11/13/2009**, Ended **11/20/2009**

Local Permit Agency **Glenn County Health Dept**

Permit No. **IRW 533-09** Permit Date **11/5/2009**

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)		DRILLING METHOD ROTARY	FLUID MUD
DEPTH FROM SURFACE		DESCRIPTION	
Ft.	to Ft.	Describe material, grain, size, color, etc.	
0	5	Top soil	
5	76	Brown clay	
76	112	Sand and gravel	
112	132	Brown clay	
132	138	Gravel with brown clay	
138	180	Brown clay	
180	204	Sand and gravel	
204	246	Brown clay	
246	270	Sand and gravel	
270	290	Sandy brown clay	
290	304	Sand and gravel	
304	314	Brown clay	
314	338	Sand and gravel	
338	356	Brown clay	
356	396	Sandy brown clay with gravel	
396	546	Brown clay	
546	582	Gravel with sand	
582	592	Brown clay	
592	604	Sand and gravel	
604	626	Brown clay	
626	648	Sand and gravel	
648	860	Sandy brown clay	
860	892	Gravel with brown clay streaks	
892	1170	Black sand with blue clay streaks	
1170	1200	Black sand	
1200	1400	Blue clay	

TOTAL DEPTH OF BORING **1210** (Feet)

TOTAL DEPTH OF COMPLETED WELL **1156** (Feet)

Address **80' E of Hwy 45 & .97 Mi Nor Rd 23**

City **CA**

County **GLENN**

APN Book **032** Page **260** Parcel **005**

Township **22 N** Range **1 W** Section **29** (N 1-4)

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public
— Irrigation — Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE			ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS				SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE				CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)		FILTER PACK (TYPE/SIZE)		
Zone		1															
0		89	14	✓				PVC	2.5	SCH 80		✓			Sand Slurry		
89		99	14		✓			PVC	2.5	SCH 80	.030				Bentonite Seal		
99		109	14	✓				PVC	2.5	SCH 80				✓	SRI#8 Sand		
Zone		2															
0		189	14	✓				PVC	2.5	SCH 80				✓	Bentonite Seal		
														✓	SRI#8 Sand		
														✓	Bentonite Seal		

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed **Mark Damion**

WELL DRILLER/AUTHORIZED REPRESENTATIVE

01/06/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER

2010
JAN 08 2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. **E0103616**

Owner's Well No. 8432

Date Work Began 11/13/2009, Ended 11/20/2009

Local Permit Agency Glenn County Health Dept

Permit No. IRW 533-09

Permit Date 11/5/2009

DWR USE ONLY — DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> ANGLE (SPECIFY)	
DRILLING METHOD ROTARY FLUID MUD	
DEPTH FROM SURFACE	DESCRIPTION
Ft. to Ft.	Describe material, grain, size, color, etc.
0 5	Top soil
5 76	Brown clay
76 112	Sand and gravel
112 132	Brown clay
132 138	Gravel with brown clay
138 180	Brown clay
180 204	Sand and gravel
204 246	Brown clay
246 270	Sand and gravel
270 290	Sandy brown clay
290 304	Sand and gravel
304 314	Brown clay
314 338	Sand and gravel
338 356	Brown clay
356 396	Sandy brown clay with gravel
396 546	Brown clay
546 582	Gravel with sand
582 592	Brown clay
592 604	Sand and gravel
604 626	Brown clay
626 648	Sand and gravel
648 860	Sandy brown clay
860 892	Gravel with brown clay streaks
892 1170	Black sand with blue clay streaks
1170 1200	Black sand
1200 1400	Blue clay

TOTAL DEPTH OF BORING 1210 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1156 (Feet)

WELL LOCATION
Address 80' E of Hwy 45 & .97 Mi N of Rd 23

City CA

County GLENN

APN Book 032 Page 260 Parcel 005

Township 22 N Range 1 W Section 31

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public
— Irrigation — Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE			ANNULAR MATERIAL					
				TYPE (✓)				MATERIAL / GRADE				INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to	Ft.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE		CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)				FILTER PACK (TYPE/SIZE)		
189	199	14		✓				PVC	2.5	SCH 80	.030	180	400			✓	SRI#8 Sand
199	255	14	✓					PVC	2.5	SCH 80		400	417		✓		Bentonite Seal
255	265	14		✓				PVC	2.5	SCH 80	.030	417	473			✓	SRI#8 Sand
265	320	14	✓					PVC	2.5	SCH 80		473	487		✓		Bentonite Seal
320	330	14		✓				PVC	2.5	SCH 80	.030	487	661			✓	SRI#8 Sand
330	370	14	✓					PVC	2.5	SCH 80		661	675		✓		Bentonite Seal

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION). (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

Mark Damion
WELL DRILLER/AUTHORIZED REPRESENTATIVE

01/06/10
DATE SIGNED

C57 A HIC - 13378
C-57 LICENSE NUMBER

ORIGINAL
File with DWR

2010
JAN 08 2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

Page 3 of 5

Owner's Well No. 8432

No. **E0103616**

Date Work Began 11/13/2009, Ended 11/20/2009

Local Permit Agency Glenn County Health Dept

Permit No. IRW 533-09

Permit Date 11/5/2009

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE _____ (SPECIFY) _____
DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE
Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

0	5	Top soil
5	76	Brown clay
76	112	Sand and gravel
112	132	Brown clay
132	138	Gravel with brown clay
138	180	Brown clay
180	204	Sand and gravel
204	246	Brown clay
246	270	Sand and gravel
270	290	Sandy brown clay
290	304	Sand and gravel
304	314	Brown clay
314	338	Sand and gravel
338	356	Brown clay
356	396	Sandy brown clay with gravel
396	546	Brown clay
546	582	Gravel with sand
582	592	Brown clay
592	604	Sand and gravel
604	626	Brown clay
626	648	Sand and gravel
648	860	Sandy brown clay
860	892	Gravel with brown clay streaks
892	1170	Black sand with blue clay streaks
1170	1200	Black sand
1200	1400	Blue clay

TOTAL DEPTH OF BORING 1210 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1156 (Feet)

WELL LOCATION
Address 80' E of Hwy 45 & .97 Mi Nor Rd 23
City CA
County GLENN
APN Book 032 Page 260 Parcel 005
Township 22 N Range 1 W Section 31
Latitude _____

DEG. MIN. SEC.		DEG. MIN. SEC.	
NORTH		SOUTH	
WEST		EAST	
LOCATION SKETCH		ACTIVITY (✓) <input checked="" type="checkbox"/> NEW WELL <input type="checkbox"/> MODIFICATION/REPAIR <input type="checkbox"/> Deepen <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG") PLANNED USES (✓) WATER SUPPLY <input type="checkbox"/> Domestic <input type="checkbox"/> Public <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial MONITORING <input checked="" type="checkbox"/> TEST WELL <input type="checkbox"/> CATHODIC PROTECTION <input type="checkbox"/> HEAT EXCHANGE <input type="checkbox"/> DIRECT PUSH <input type="checkbox"/> INJECTION <input type="checkbox"/> VAPOR EXTRACTION <input type="checkbox"/> SPARGING <input type="checkbox"/> REMEDIATION <input type="checkbox"/> OTHER (SPECIFY) _____	

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft.	to Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE				
370	380	14		✓			PVC	2.5	SCH 80	.030
380	400	14	✓				PVC	2.5	SCH 80	
Zone	3									
0	549	14	✓				PVC	2.5	SCH 80	
549	559	14		✓			PVC	2.5	SCH 80	.030
559	595	14	✓				PVC	2.5	SCH 80	

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
675			✓	SRI#8 Sand
736		✓		Bentonite Seal
746			✓	SRI#8 Sand
1204		✓		Bentonite Seal

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed Mark Dameron

WELL DRILLER/AUTHORIZED REPRESENTATIVE

01/06/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 4 of 5

Owner's Well No. 8432

Date Work Began 11/13/2009, Ended 11/20/2009

Local Permit Agency Glenn County Health Dept

Permit No. IRW 533-09

Permit Date 11/5/2009

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **E0103616**

DWR USE ONLY -- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DEPTH FROM SURFACE DRILLING METHOD ROTARY FLUID MUD

Ft. to Ft. DESCRIPTION Describe material, grain, size, color, etc.

0	5	Top soil
5	76	Brown clay
76	112	Sand and gravel
112	132	Brown clay
132	138	Gravel with brown clay
138	180	Brown clay
180	204	Sand and gravel
204	246	Brown clay
246	270	Sand and gravel
270	290	Sandy brown clay
290	304	Sand and gravel
304	314	Brown clay
314	338	Sand and gravel
338	356	Brown clay
356	396	Sandy brown clay with gravel
396	546	Brown clay
546	582	Gravel with sand
582	592	Brown clay
592	604	Sand and gravel
604	626	Brown clay
626	648	Sand and gravel
648	860	Sandy brown clay
860	892	Gravel with brown clay streaks
892	1170	Black sand with blue clay streaks
1170	1200	Black sand
1200	1400	Blue clay

TOTAL DEPTH OF BORING 1210 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1156 (Feet)

WELL LOCATION
Address 80' E of Hwy 45 & .97 Mi N of Rd 23
City CA
County GLENN
APN Book 032 Page 260 Parcel 005
Township 22 N Range 1 W Section 31
Latitude

DEG. MIN. SEC. LOCATION SKETCH NORTH

WEST EAST
ACTIVITY (✓)
☒ NEW WELL
MODIFICATION/REPAIR
— Deepen
— Other (Specify)
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
PLANNED USES (✓)
WATER SUPPLY
— Domestic — Public
— Irrigation — Industrial
MONITORING ✓
TEST WELL
CATHODIC PROTECTION
HEAT EXCHANGE
DIRECT PUSH
INJECTION
VAPOR EXTRACTION
SPARGING
REMEDIATION
OTHER (SPECIFY)

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)						
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS
Ft. to Ft.		BLANK	SCREEN	CONDUIT	FILL PIPE			
595	605	14	✓			PVC	2.5	SCH 80
605	631	14	✓			PVC	2.5	SCH 80
631	641	14	✓			PVC	2.5	SCH 80
641	661	14	✓			PVC	2.5	SCH 80
Zone	4							
0	859	14/8	✓			PVC	2.5	SCH 80

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
Ft. to Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed Marc Damion

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

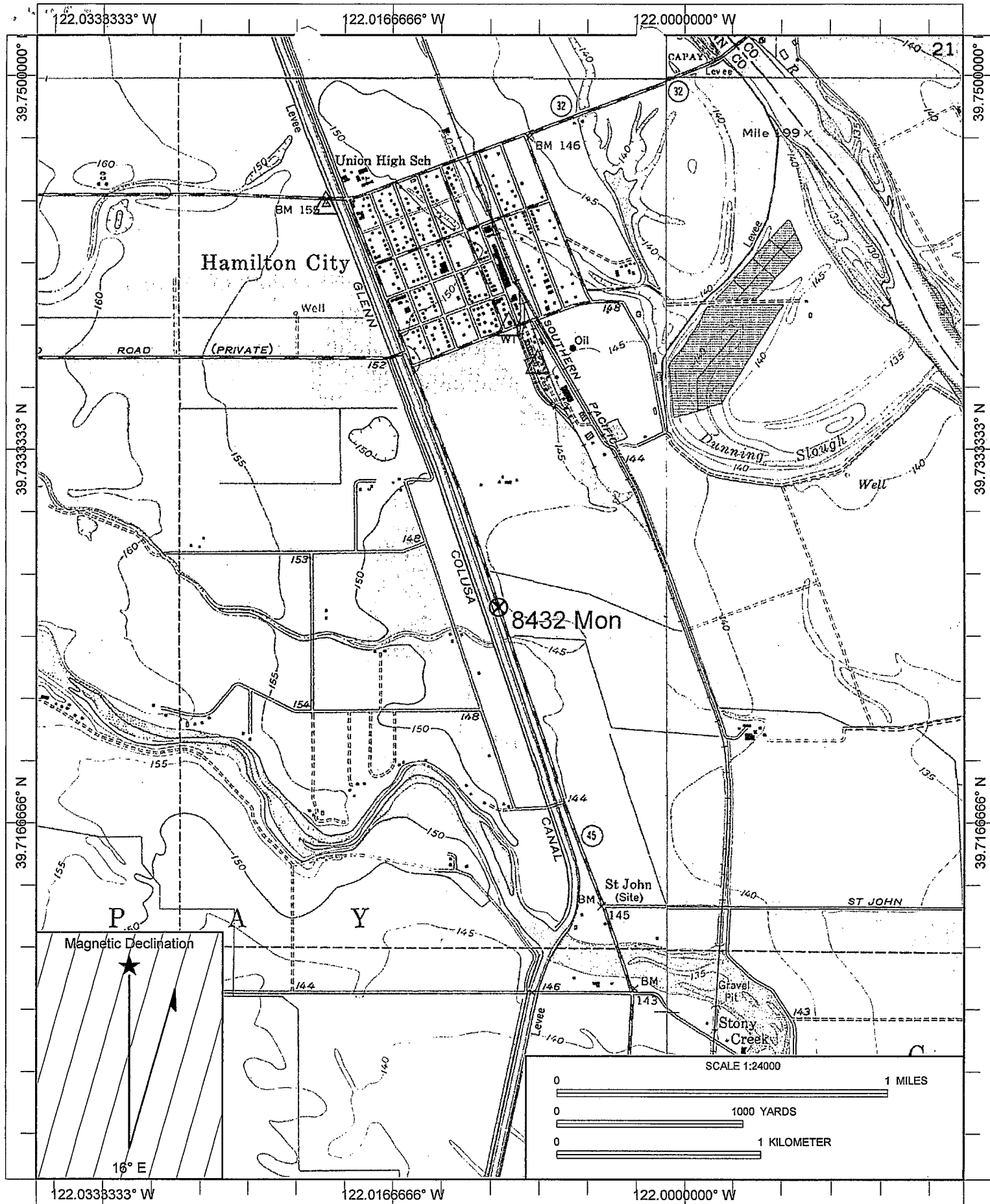
ZIP

01/06/10

DATE SIGNED

C57 A HIC - 13378

C-57 LICENSE NUMBER



Name: HAMILTON CITY
 Date: 11/2/2009
 Scale: 1 inch equals 2000 feet

Caption: DWR (Hamilton City) - Job# 8432 Mon
 APN: 032-260-005
 T22N R1W s31

ORIGINAL
File with DWR

Page 1 of 4

Owner's Well No. 7950

Date Work Began 3/2/2006, Ended 3/20/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW243-06 Permit Date 2/28/2006

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **E038764**

DWR USE ONLY -- DO NOT FILL IN

22N / 02W - 01

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID MUD

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	18	TOP SOIL
18	25	SAND AND GRAVEL
25	35	TAN CLAY
35	95	SAND AND GRAVEL
95	186	TAN CLAY WITH SAND STREAKS
186	244	SAND AND GRAVEL
244	278	SANDY BROWN CLAY
278	380	SAND AND GRAVEL
380	525	SILTY BLUE CLAY
525	540	SAND AND GRAVEL
540	550	SILTY BROWN CLAY
550	578	SAND AND GRAVEL
578	682	SILTY BROWN CLAY WITH SAND STREAKS
682	735	SAND AND SMALL GRAVEL
735	780	SILTY TAN CLAY
780	834	SAND AND SMALL GRAVEL
834	936	SILTY GRAY BLUE CLAY WITH SAND STREAKS
936	1100	COARSE SAND WITH SILTY GRAY BLUE CLAY STREAKS

WELL LOCATION

Address 100' SOF RD 204 & 50' EOF RD 205

City CA

County GLENN

APN Book 037 Page 090 Parcel 008

Township 22 N Range 2 W Section 1

Latitude

LOCATION SKETCH

NORTH

SOUTH

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public

Irrigation Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)						SLOT SIZE IF ANY (Inches)	DEPTH FROM SURFACE		ANNULAR MATERIAL			
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)				GAUGE OR WALL THICKNESS	TYPE		
Ft	to		Ft	BLANK	SCREEN	CON. DUCTOR				FILL PIPE	Ft		to	Ft	CE- MENT (✓)
ZONE		1													
0	70	14	✓				PVC F480	2.5	SCH 80		✓		✓	SAND SLURRY	
70	80	14		✓			PVC F480	2.5	SCH 80	.030				SRI#8 SAND	
80	90	14	✓				PVC F480	2.5	SCH 80		✓			SAND SLURRY	
ZONE		2													
0	210	14	✓				PVC F480	2.5	SCH 80				✓	SRI#8 SAND	
											✓			SAND SLURRY	

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

WOODLAND

CA

95695

ADDRESS

CITY

STATE

ZIP

Signed

Mark Damion
WELL DRILLER/AUTHORIZED REPRESENTATIVE

05/03/06

DATE SIGNED

C57 A HIC - 133783
C-57 LICENSE NUMBER

DWR USE ONLY -- DO NOT FILL IN														
STATE WELL NO./STATION NO.														
LATITUDE							LONGITUDE							
APN/TRS/OTHER														

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR USE ONLY -- DO NOT FILL IN
 STATE WELL NO./STATION NO.
 LATITUDE LONGITUDE
 APN/TRS/OTHER

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 3

Owner's Well No. 7451 MON

Date Work Began 1/13/2003, Ended 1/20/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 135-02 Permit Date 7/30/2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726789 A,B,C

DWR USE ONLY -- DO NOT FILL IN

22N/02W-15M

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD REVERSE FLUID WATER

DEPTH FROM SURFACE DESCRIPTION
Ft. to Ft. Describe material, grain, size, color, etc.

0	20	GRAVEL WITH CLAY
20	30	BROWN CLAY WITH GRAVEL
30	70	GRAVEL WITH SAND AND CLAY
70	95	TAN CLAY
95	110	GRAVEL WITH SAND AND TAN CLAY
110	112	TAN CLAY STRINGER
112	115	GRAVEL WITH SAND AND TAN CLAY
115	140	GRAVEL
140	166	TAN SILTY CLAY
166	180	GRAVEL (UPPER TUSCAN FORMATION)
180	206	GRAVEL WITH BLUE CLAY
206	300	BLUE/GREEN CLAY
300	320	BLUE/GREEN CLAY WITH SAND
320	340	BLUE/GREEN CLAY WITH SANDSTONE
340	360	CLAY WITH SAND STONE AND GRAVEL
360	375	GRAVEL WITH SAND
375	420	CLAY WITH SAND AND GRAVEL
420	480	BLUE CLAY WITH SAND AND GRAVEL
480	500	BLUE CLAY
500	505	SANDSTONE WITH GRAVEL
505	520	BLUE CLAY WITH MUDSTONE
520	540	GRAVEL WITH SAND
540	580	BLUE CLAY
580	640	BROWN CLAY
640	660	BLUE/GREEN CLAY
660	740	BLUE/GREEN SILTSTONE
740	760	BLUE/GREEN CLAY
760	780	BROWN/BLACK SANDSTONE
780	880	BROWN/BLACK SILTY SANDY CLAY

Address 2 MI SOF WYO RD & .45 MI EOF 4TH ST.

City CA

County GLENN

APN Book 037 Page 230 Parcel 010

Township 22 N Range 2 W Section 15

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic Public Irrigation Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

EXTRACTOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WEST EAST
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 880 (Feet)

TOTAL DEPTH OF COMPLETED WELL 401 (Feet)

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL					
			TYPE (✓)				MATERIAL / GRADE			INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft.	to Ft.
ZONE	1									0	30	✓			SAND SLURRY
0	89.9	18				AIR LINE	1			30	100			✓	#8 GRD SAND
0	60	18	✓			BLACK PIP	2			100	124	✓			SAND SLURRY
60	70	18		✓		S.S. WIRE	2		.020	124	164			✓	PEA GRAVEL
70	91	18	✓			BLACK PIP	2			164	186	✓			SAND SLURRY
ZONE	2									186	258				#8 GRD SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

02/24/03

DATE SIGNED

133783-C57A

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 3

Owner's Well No. 7451 MON

Date Work Began 1/13/2003, Ended 1/20/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 135-02

Permit Date 7/30/2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726789**

DWR USE ONLY --- DO NOT FILL IN											
STATE WELL NO./STATION NO.											
LATITUDE						LONGITUDE					
APN/TRS/OTHER											

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **REVERSE** FLUID **WATER**

DEPTH FROM SURFACE
Ft. to Ft. DESCRIPTION
Describe material, grain, size, color, etc.

0	20	GRAVEL WITH CLAY
20	30	BROWN CLAY WITH GRAVEL
30	70	GRAVEL WITH SAND AND CLAY
70	95	TAN CLAY
95	110	GRAVEL WITH SAND AND TAN CLAY
110	112	TAN CLAY STRINGER
112	115	GRAVEL WITH SAND AND TAN CLAY
115	140	GRAVEL
140	166	TAN SILTY CLAY
166	180	GRAVEL (UPPER TUSCAN FORMATION)
180	206	GRAVEL WITH BLUE CLAY
206	300	BLUE/GREEN CLAY
300	320	BLUE/GREEN CLAY WITH SAND
320	340	BLUE/GREEN CLAY WITH SANDSTONE
340	360	CLAY WITH SAND STONE AND GRAVEL
360	375	GRAVEL WITH SAND
375	420	CLAY WITH SAND AND GRAVEL
420	480	BLUE CLAY WITH SAND AND GRAVEL
480	500	BLUE CLAY
500	505	SANDSTONE WITH GRAVEL
505	520	BLUE CLAY WITH MUDSTONE
520	540	GRAVEL WITH SAND
540	580	BLUE CLAY
580	640	BROWN CLAY
640	660	BLUE/GREEN CLAY
660	740	BLUE/GREEN SILTSTONE
740	760	BLUE/GREEN CLAY
760	780	BROWN/BLACK SANDSTONE
780	880	BROWN/BLACK SILTY SANDY CLAY

TOTAL DEPTH OF BORING **880** (Feet)

TOTAL DEPTH OF COMPLETED WELL **401** (Feet)

Address **2 MI SOF WYO RD & .45 MI EOF 4TH ST.**

City **CA**

County **GLENN**

APN Book **037** Page **230** Parcel **010**

Township **22 N** Range **2 W** Section **15**

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public
— Irrigation — Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE - HOLE DIA. (Inches)	CASING (S)					
		TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		
0	167.3	18				AIR LINE	1
0	210	18	✓			BLACK PIP	2
210	220	18		✓		S.S. WIRE	2
220	241	18	✓			BLACK PIP	2
ZONE	3						
0	179.6	18				AIR LINE	1

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
258	277	✓		SAND SLURRY
277	326		✓	PEA GRAVEL
326	345	✓		SAND SLURRY
345	422		✓	#8 GRD SAND
422	444	✓		SAND SLURRY
444	880		✓	PEA GRAVEL

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

ZIP

02/24/03

DATE SIGNED

133783-C57A

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 3 of 3

Owner's Well No. 7451 MON

Date Work Began 1/13/2003, Ended 1/20/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 135-02

Permit Date 7/30/2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726789**

DWR USE ONLY -- DO NOT FILL IN									
STATE WELL NO./STATION NO.									
LATITUDE					LONGITUDE				
APN/TRS/OTHER									

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **REVERSE**

FLUID **WATER**

DEPTH FROM SURFACE
Ft. to Ft.

DESCRIPTION

Describe material, grain, size, color, etc.

0	20	GRAVEL WITH CLAY
20	30	BROWN CLAY WITH GRAVEL
30	70	GRAVEL WITH SAND AND CLAY
70	95	TAN CLAY
95	110	GRAVEL WITH SAND AND TAN CLAY
110	112	TAN CLAY STRINGER
112	115	GRAVEL WITH SAND AND TAN CLAY
115	140	GRAVEL
140	166	TAN SILTY CLAY
166	180	GRAVEL (UPPER TUSCAN FORMATION)
180	206	GRAVEL WITH BLUE CLAY
206	300	BLUE/GREEN CLAY
300	320	BLUE/GREEN CLAY WITH SAND
320	340	BLUE/GREEN CLAY WITH SANDSTONE
340	360	CLAY WITH SAND STONE AND GRAVEL
360	375	GRAVEL WITH SAND
375	420	CLAY WITH SAND AND GRAVEL
420	480	BLUE CLAY WITH SAND AND GRAVEL
480	500	BLUE CLAY
500	505	SANDSTONE WITH GRAVEL
505	520	BLUE CLAY WITH MUDSTONE
520	540	GRAVEL WITH SAND
540	580	BLUE CLAY
580	640	BROWN CLAY
640	660	BLUE/GREEN CLAY
660	740	BLUE/GREEN SILTSTONE
740	760	BLUE/GREEN CLAY
760	780	BROWN/BLACK SANDSTONE
780	880	BROWN/BLACK SILTY SANDY CLAY

TOTAL DEPTH OF BORING **880** (Feet)

TOTAL DEPTH OF COMPLETED WELL **401** (Feet)

Address **.2 MI SOF WYO RD & .45 MI EOF 4TH ST.**

City **CA**

County **GLENN**

APN Book **037** Page **230** Parcel **010**

Township **22 N** Range **2 W** Section **15**

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDICATION ☐

OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft.	to Ft.	BLANK	SCREEN	CON- DUCTOR	FILL PIPE					
0	370	18	✓				BLACK PIP	2		
370	380	18		✓			S.S. WIRE	2		.020
380	401	18	✓				BLACK PIP	2		

DEPTH FROM SURFACE		ANNULAR MATERIAL			
		TYPE			
Ft.	to Ft.	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	30	✓			SAND SLURRY
30	100			✓	#8 GRD SAND
100	124	✓			SAND SLURRY
124	164			✓	PEA GRAVEL
164	186	✓			SAND SLURRY
186	258			✓	#8 GRD SAND

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

CA

STATE

95695

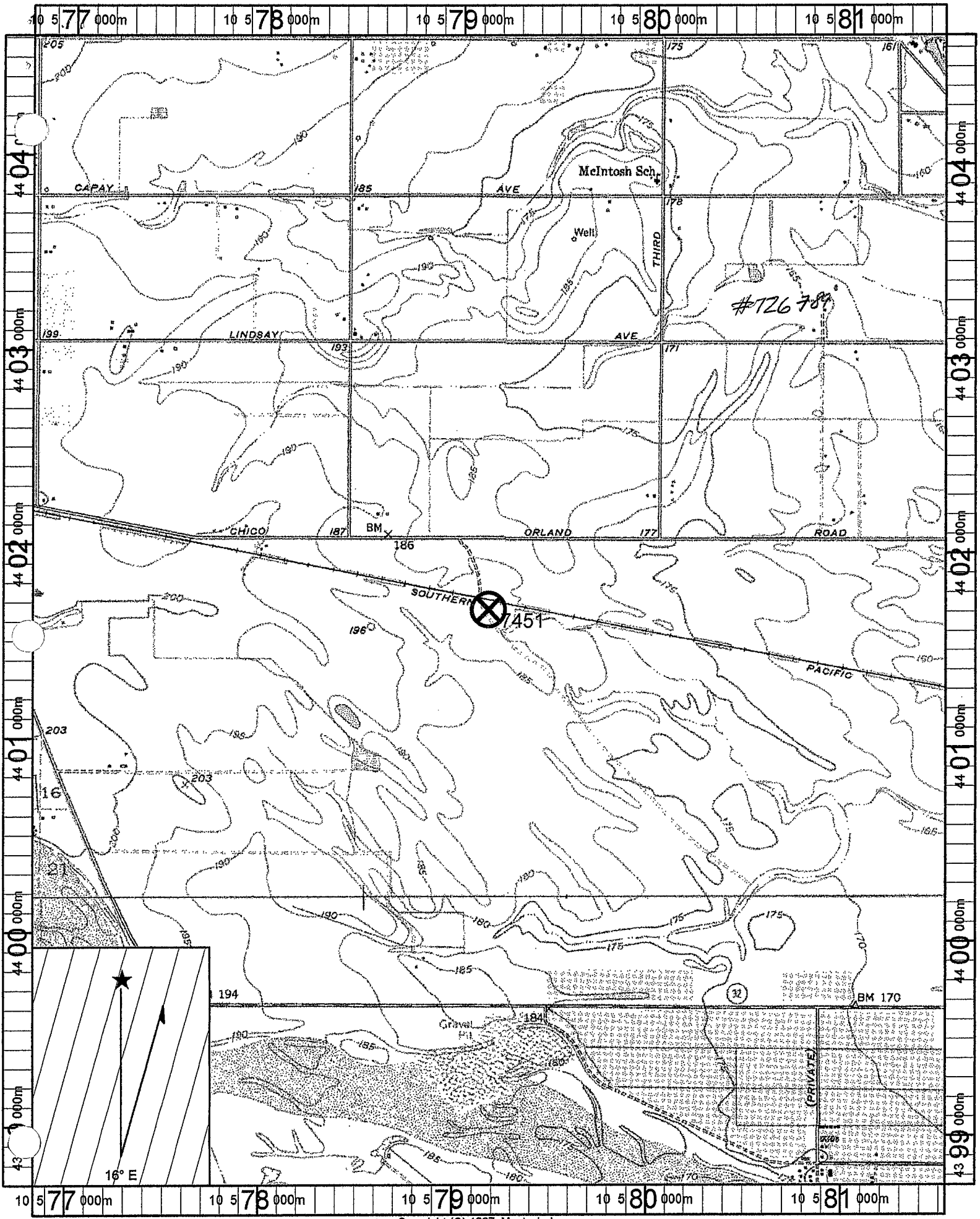
ZIP

02/24/03

DATE SIGNED

133783-C57A

C-57 LICENSE NUMBER



Form ID: 7/20/2002

No. 726790

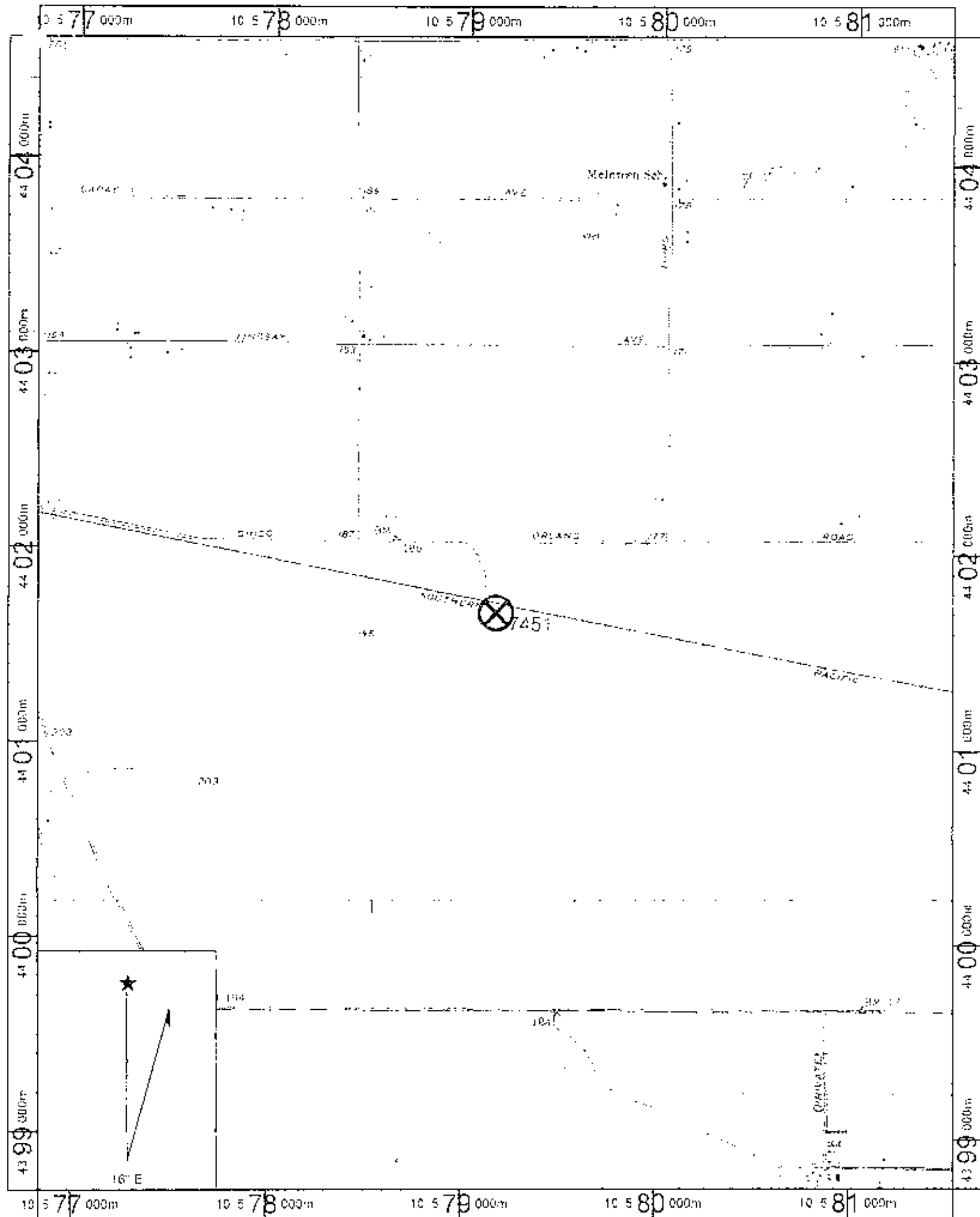
$$A^{\pm} = \sqrt{3} \sigma^{\pm} = \begin{pmatrix} 0 & \sqrt{3} \\ \sqrt{3} & 0 \end{pmatrix}$$

GEOLOGIC LOC

DESCRIPTION

Deviatze - medium green, color 16

IF ANYTHING SPACE IS NEEDED USE NEXT CONSECUTIVE NUMBERED FORM



Owner's Well No. 7988

Date Work Began 7/28/2006, Ended 8/3/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 249-06

Permit Date 6/21/2006

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. E044014

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
DRILLING METHOD ROTARY DESCRIPTION FLUID MUD

Describe material, grain, size, color, etc.

DEPTH FROM SURFACE Ft. to Ft.	0	10	RED BROWN CLAY WITH SAND
10	20	20	SAND AND GRAVEL
20	35	35	LOOSE GRAVEL WITH SAND
35	70	70	LOOSE GRAVEL WITH SAND AND YELLOW CLAY STREAKS
70	200	200	YELLOW CLAY WITH SAND AND GRAVEL
200	250	250	SILTY YELLOW GRAY CLAY WITH SAND
250	300	300	SILTY YELLOW GRAY CLAY WITH SAND AND GRAVEL
300	385	385	SILTY BLUE GRAY CLAY WITH SAND AND GRAVEL
385	420	420	BRITTLE GRAY AND BROWN CLAY MIX WITH SAND
420	440	440	SAND AND SMALL GRAVEL WITH GRAY CLAY
440	495	495	LARGE GRAVEL WITH SAND
495	645	645	GRAY CLAY WITH SAND AND LARGE GRAVEL STREAKS
645	820	820	SOFT GRAY BLUE CLYA WITH SAND STREAKS
820	840	840	COARSE BLACK SAND
840	850	850	GRAY BLUE CLAY
850	930	930	COARSE BLACK SAND WITH GRAVEL AND MINIMUM GRAY CLAY STREAKS
930	976	976	SOFT GRAY CLAY
976	1042	1042	COARSE BLACK SAND
1042	1200	1200	SOFT GRAY CLAY WITH SAND STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1049 (Feet)

Address 125' SOF RD 9 & 23 MILE OF RD P

City CA

County GLENN

APN Book 044 Page 330 Parcel 014

Township 22 N Range 2 W Section 18

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic

Public

Industrial

Irrigation

Monitoring

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE - HOLE DIA. (Inches)	CASING (S)				SLOT SIZE IF ANY (Inches)	ANNULAR MATERIAL TYPE	
		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS		CE-MENT (✓)	FILL (✓)
ZONE 1								
+2.5	55	14 ✓	PVC F480	2.5	SCH 80		(✓)	(✓)
55	65	14 ✓	PVC F480	2.5	SCH 80	.030		
65	75	14 ✓	PVC F480	2.5	SCH 80			
ZONE 2								
+2	185	14 ✓	PVC F480	2.5	SCH 80			

Next Page

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed Mark Davis

WELL DRILLER/AUTHORIZED REPRESENTATIVE

WOODLAND

CITY

WOODLAND

CA

STATE

ZIP

95695

09/01/06

DATE SIGNED

C-57 A HIC - 133783

C-57 LICENSE NUMBER

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

File with DWR

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

Page 10 of 12

Owner's Well No. 7988

Date Work Began	7/28/2006	Ended	8/3/2006
-----------------	-----------	-------	----------

8/3/2006

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 249-06 Permit Date 6/21/2006

- GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL HORIZONTAL ANGLE (SPECIFY)

DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM

DEPTH FROM SURFACE	DESCRIPTION	
	Et	Et
	Describe material, grain, size, color, etc.	

[illegible]TOTAL DEPTH OF BORING 1200 (Feet)

Well No.	Well Name	Well Type	Well Status	Well Depth (Feet)
1049	TOTAL DEPTH OF COMPLETED WELL			1049

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER----- (Ft) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)						SLOT SIZE IF ANY (Inches)	
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)		GAUGE OR WALL THICKNESS
			BLANK	SCREEN	DUCTOR CON.	FILL PIPE				
Ft	to	Ft								
165	175	14	✓				PVC F480	2.5	SCH 80	.030
175	185	14	✓				PVC F480	2.5	SCH 80	
ZONE 3										
+1.5	414	14	✓				PVC F480	2.5	SCH 80	
414	434	14	✓				PVC F480	2.5	SCH 80	.030
434	455	14	✓				PVC F480	2.5	SCH 80	

DEPTH FROM SURFACE	ANNULAR MATERIAL				
	TYPE				
	FL to FT	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	46.5	✓			SAND SLURRY
46.5	50		✓		BENTONITE C
50	90			✓	SRI#8 SAND
90	148	✓			SAND SLURRY
148	150		✓		BENTONITE C
150	188			✓	SRI#8 SAND

ATTACHMENTS (✓)

- Geologic Log
 — Well Construction Diagram
 — Geophysical Log(s)
 — Soil/Water Chemical Analysis
 — Other

CERTIFICATION STATEMENT

plete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

NAME OF THE PERSON, FIRM, OR CORPORATION (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS 

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

WOODLAND γ

09/01/06

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. E044014

DWR USE ONLY	DO	NOT	FILL IN
STATE WELL NO./STATION NO.			
LATITUDE			
LONGITUDE			
APN/TRS/OTHER			

GEOLOGIC LOG

ORIENTATION (✓) VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)
DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.	
	10	20
0	10	RED BROWN CLAY WITH SAND
10	20	SAND AND GRAVEL
20	35	LOOSE GRAVEL WITH SAND
35	70	LOOSE GRAVEL WITH SAND AND YELLOW CLAY STREAKS
70	200	YELLOW CLAY WITH SAND AND GRAVEL
200	250	SILTY YELLOW GRAY CLAY WITH SAND
250	300	SILTY YELLOW GRAY CLAY WITH SAND AND GRAVEL
300	385	SILTY BLUE GRAY CLAY WITH SAND AND GRAVEL
385	420	BRITTLE GRAY AND BROWN CLAY MIX WITH SAND
420	440	SAND AND SMALL GRAVEL WITH GRAY CLAY
440	495	LARGE GRAVEL WITH SAND
495	645	GRAY CLAY WITH SAND AND LARGE GRAVEL STREAKS
645	820	SOFT GRAY BLUE CLYA WITH SAND STREAKS
820	840	COARSE BLACK SAND
840	850	GRAY BLUE CLAY
850	930	COARSE BLACK SAND WITH GRAVEL AND MINIMUM GRAY CLAY STREAKS
930	976	SOFT GRAY CLAY
976	1042	COARSE BLACK SAND
1042	1200	SOFT GRAY CLAY WITH SAND STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1049 (Feet)

Address 125' SOF RD 9 & 23 M E OF RD P

City CA

County GLENN

APN Book 044 Page 330 Parcel 014

Township 22 N Range 2 W Section 18

Latitude

Longitude

DEG. MIN. SEC. NORTH

DEG. MIN. SEC. SOUTH

DEG. MIN. SEC. ACTIVITY (✓)

DEG. MIN. SEC. NEW WELL

DEG. MIN. SEC. MODIFICATION/REPAIR

DEG. MIN. SEC. Deepen

DEG. MIN. SEC. Other (Specify)

DEG. MIN. SEC. DESTROY (Describe Procedures and Materials Under GEOLOGIC LOG)

DEG. MIN. SEC. PLANNED USES (✓)

DEG. MIN. SEC. WATER SUPPLY

DEG. MIN. SEC. Domestic

DEG. MIN. SEC. Irrigation

DEG. MIN. SEC. Industrial

DEG. MIN. SEC. MONITORING

DEG. MIN. SEC. TEST WELL

DEG. MIN. SEC. CATHODIC PROTECTION

DEG. MIN. SEC. HEAT EXCHANGE

DEG. MIN. SEC. DIRECT PUSH

DEG. MIN. SEC. INJECTION

DEG. MIN. SEC. VAPOR EXTRACTION

DEG. MIN. SEC. SPARGING

DEG. MIN. SEC. REMEDIATION

DEG. MIN. SEC. OTHER (SPECIFY)

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DEG. MIN. SEC. HEAT EXCHANGE

DEG. MIN. SEC. DIRECT PUSH

DEG. MIN. SEC. INJECTION

DEG. MIN. SEC. VAPOR EXTRACTION

DEG. MIN. SEC. SPARGING

DEG. MIN. SEC. REMEDIATION

DEG. MIN. SEC. OTHER (SPECIFY)

DEG. MIN. SEC. SOUTH

DEG. MIN. SEC. NORTH

DEG. MIN. SEC. ACTIVITY (✓)

DEG. MIN. SEC. NEW WELL

DEG. MIN. SEC. MODIFICATION/REPAIR

DEG. MIN. SEC. Deepen

DEG. MIN. SEC. Other (Specify)

DEG. MIN. SEC. DESTROY (Describe Procedures and Materials Under GEOLOGIC LOG)

DEG. MIN. SEC. PLANNED USES (✓)

DEG. MIN. SEC. WATER SUPPLY

DEG. MIN. SEC. Domestic

DEG. MIN. SEC. Irrigation

DEG. MIN. SEC. Industrial

DEG. MIN. SEC. MONITORING

DEG. MIN. SEC. TEST WELL

DEG. MIN. SEC. CATHODIC PROTECTION

DEG. MIN. SEC. HEAT EXCHANGE

DEG. MIN. SEC. DIRECT PUSH

DEG. MIN. SEC. INJECTION

DEG. MIN. SEC. VAPOR EXTRACTION

DEG. MIN. SEC. SPARGING

DEG. MIN. SEC. REMEDIATION

DEG. MIN. SEC. OTHER (SPECIFY)

DEG. MIN. SEC. SOUTH

DEG. MIN. SEC. NORTH

DEG. MIN. SEC. ACTIVITY (✓)

DEG. MIN. SEC. NEW WELL

DEG. MIN. SEC. MODIFICATION/REPAIR

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DEG. MIN. SEC. Other (Specify)

DEG. MIN. SEC. DESTROY (Describe Procedures and Materials Under GEOLOGIC LOG)

DEG. MIN. SEC. PLANNED USES (✓)

DEG. MIN. SEC. WATER SUPPLY

DEG. MIN. SEC. Domestic

DEG. MIN. SEC. Irrigation

DEG. MIN. SEC. Industrial

DEG. MIN. SEC. MONITORING

DEG. MIN. SEC. TEST WELL

DEG. MIN. SEC. CATHODIC PROTECTION

DEG. MIN. SEC. HEAT EXCHANGE

DEG. MIN. SEC. DIRECT PUSH

DEG. MIN. SEC. INJECTION

DEG. MIN. SEC. VAPOR EXTRACTION

DEG. MIN. SEC. SPARGING

DEG. MIN. SEC. REMEDIATION

DEG. MIN. SEC. OTHER (SPECIFY)

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DEG. MIN. SEC. Other (Specify)

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DEG. MIN. SEC. Domestic

DEG. MIN. SEC. Irrigation

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DEG. MIN. SEC. TEST WELL

DEG. MIN. SEC. CATHODIC PROTECTION

DEG. MIN. SEC. HEAT EXCHANGE

DEG. MIN. SEC. DIRECT PUSH

DEG. MIN. SEC. INJECTION

DEG. MIN. SEC. VAPOR EXTRACTION

DEG. MIN. SEC. SPARGING

DEG. MIN. SEC. REMEDIATION

DEG. MIN. SEC. OTHER (SPECIFY)

DEG. MIN. SEC. SOUTH

DEG. MIN. SEC. NORTH

DEG. MIN. SEC. ACTIVITY (✓)

DEG. MIN. SEC. NEW WELL

DEG. MIN. SEC. MODIFICATION/REPAIR

DEG. MIN. SEC. Deepen

DEG. MIN. SEC. Other (Specify)

DEG. MIN. SEC. DESTROY (Describe Procedures and Materials Under GEOLOGIC LOG)

DEG. MIN. SEC. PLANNED USES (✓)

DEG. MIN. SEC. WATER SUPPLY

DEG. MIN. SEC. Domestic

DEG. MIN. SEC. Irrigation

Owner's Well No. 7988

Date Work Began 7/28/2006

Ended 8/3/2006

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. E044014

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW 249-06

Permit Date 6/21/2006

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE ☐ (SPECIFY)

DRILLING METHOD

ROTARY ☐ FLUID MUD

DESCRIPTION

Describe material, grain, size, color, etc.

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION
0 10	RED BROWN CLAY WITH SAND
10 20	SAND AND GRAVEL
20 35	LOOSE GRAVEL WITH SAND
35 70	LOOSE GRAVEL WITH SAND AND YELLOW CLAY STREAKS
70 200	YELLOW CLAY WITH SAND AND GRAVEL
200 250	SILTY YELLOW GRAY CLAY WITH SAND
250 300	SILTY YELLOW GRAY CLAY WITH SAND AND GRAVEL
300 385	SILTY BLUE GRAY CLAY WITH SAND AND GRAVEL
385 420	BRITTLE GRAY AND BROWN CLAY MIX WITH SAND
420 440	SAND AND SMALL GRAVEL WITH GRAY CLAY
440 495	LARGE GRAVEL WITH SAND
495 645	GRAY CLAY WITH SAND AND LARGE GRAVEL STREAKS
645 820	SOFT GRAY BLUE CLYA WITH SAND STREAKS
820 840	COARSE BLACK SAND
840 850	GRAY BLUE CLAY
850 930	COARSE BLACK SAND WITH GRAVEL AND MINIMUM GRAY CLAY STREAKS
930 976	SOFT GRAY CLAY
976 1042	COARSE BLACK SAND
1042 1200	SOFT GRAY CLAY WITH SAND STREAKS

TOTAL DEPTH OF BORING 1200 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1049 (Feet)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE				
			TYPE (✓)		MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	CE- MENT (✓)			BEN- TONITE (✓)	FILL	FILTER PACK (TYPE/SIZE)		
Ft	to Ft	BLANK	SCREEN	CON- DUCTOR						FILL PIPE						
989	999	8-3/4		✓			PVC F480	2.5	SCH 80	.030		795	797	✓		BENTONITE C
999	1019	8-3/4	✓				PVC F480	2.5	SCH 80			797	1062			SRI#8 SAND
1019	1029	8-3/4		✓			PVC F480	2.5	SCH 80	.030		1062	1068	✓		BENTONITE C
1029	1049	8-3/4	✓				PVC F480	2.5	SCH 80			1068	1200			NATIVE FILL

ATTACHMENTS (✓)

- ☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 WEST KENTUCKY AVE

ADDRESS

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WOODLAND

CITY

CA

STATE

ZIP

09/01/06

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

DWR USE ONLY DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

Address 125' SOF RD 9 & 23 MILE OF RD P

City CA

County GLENN

APN Book 044 Page 330 Parcel 014

Township 22 N Range 2 W Section 18

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

Domestic

Public

Irrigation

Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

JUN 30 2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726922**

Page 1 of 13

Owner's Well No. 7677 MON

Date Work Began 5/6/2004, Ended 5/14/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW207-04

Permit Date 5/3/2004

DWR USE ONLY -- DO NOT FILL IN

221022W-30

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **MUD**

DEPTH FROM SURFACE		DESCRIPTION
Ft	to Ft	Describe material, grain, size, color, etc.
0	20	SAND AND GRAVEL
20	60	TAN SILTY CLAY
60	70	SAND AND GRAVEL
70	120	TAN SILTY CLAY
120	160	SAND AND GRAVEL
160	220	TAN/BROWN SILTY CLAY
220	240	MED-CRS SAND
240	260	MED-CRS SAND WITH CLAY
260	320	TAN SILTY CLAY
320	360	POORLY GRD VOLCANIC SAND
360	380	POORLY SRTD SAND IN A VOLCANIC ASHY CLY
380	400	POORLY GRD SAND AND GRAVEL
400	480	POORLY SRTD SAND AND GRAVEL W/CLAY
480	520	MED-CRS SAND WITH CLAY
520	540	POORLY GRD SAND
540	580	TAN CLAY
580	620	POORLY GRD SAND AND GRAVEL
620	640	TAN/BLUE CLAY W/POORLY GRD GRAVEL
640	660	BLUE CLAY W/POORLY GRD SAND
660	680	NED-CRS SAND W/METAMORPHIC GRAVEL
680	760	BLUE CLAY W/SAND AND GRAVEL
760	780	TAN/BROWN CLAY
780	800	DARK BLUE/GRAY CLAY W/FINE SAND
800	820	MED-CRS SAND W/BLUE CLAY
820	900	MED-CRS BLACK SAND AND GRAVEL
900	1020	TUSCAN CLAY AND ASH W/SOME FINE SAND

WELL LOCATION

Address 75 FT N OF C/R 18 & 9 MI E OF C/R P

City CA

County GLENN

APN Book 046 Page 310 Parcel 060

Township 22 N Range 2 W Section 30

Latitude _____ DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDICATION

OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL							
			TYPE (✓)				TYPE										
Ft	to	Ft	BLANK	SCREEN	CON- DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	Ft	to	Ft	CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
ZONE	1										0	31		✓			SAND SLURRY
0	45	12	✓				PVC	2.5	SCH 80		31	88				✓	#8 GRD SAND
45	55	12		✓			PVC	2.5	SCH 80	.030	88	114		✓			SAND SLURRY
55	60	12	✓				PVC	2.5	SCH 80		114	291				✓	#8 GRD SAND
60	70	12		✓			PVC	2.5	SCH 80	.030	291	307		✓			SAND SLURRY
70	80	12	✓				PVC	2.5	SCH 80		307	725					PEA GRAVEL

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME **EATON DRILLING CO.**

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

06/01/04

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
File with DWR

Page 2 of 13

Owner's Well No. 7677 MON

Date Work Began 5/6/2004, Ended 5/14/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW207-04 Permit Date 5/3/2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726922

DWR USE ONLY — DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ☒ ROTARY ☐ FLUID MUD

DEPTH FROM SURFACE		DESCRIPTION
Ft	to Ft	Describe material, grain, size, color, etc.
0	20	SAND AND GRAVEL
20	60	TAN SILTY CLAY
60	70	SAND AND GRAVEL
70	120	TAN SILTY CLAY
120	160	SAND AND GRAVEL
160	220	TAN/BROWN SILTY CLAY
220	240	MED-CRS SAND
240	260	MED-CRS SAND WITH CLAY
260	320	TAN SILTY CLAY
320	360	POORLY GRD VOLCANIC SAND
360	380	POORLY SRTD SAND IN A VOLCANIC ASHY CL
380	400	POORLY GRD SAND AND GRAVEL
400	480	POORLY SRTD SAND AND GRAVEL W/CLAY
480	520	MED-CRS SAND WITH CLAY
520	540	POORLY GRD SAND
540	580	TAN CLAY
580	620	POORLY GRD SAND AND GRAVEL
620	640	TAN/BLUE CLAY W/POORLY GRD GRAVEL
640	660	BLUE CLAY W/POORLY GRD SAND
660	680	NED-CRS SAND W/METAMORPHIC GRAVEL
680	760	BLUE CLAY W/SAND AND GRAVEL
760	780	TAN/BROWN CLAY
780	800	DARK BLUE/GRAY CLAY W/FINE SAND
800	820	MED-CRS SAND W/BLUE CLAY
820	900	MED-CRS BLACK SAND AND GRAVEL
900	1020	TUSCAN CLAY AND ASH W/SOME FINE SAND

TOTAL DEPTH OF BORING 920 (Feet)
TOTAL DEPTH OF COMPLETED WELL 900 (Feet)

WELL LOCATION	
Address 75 FT N OF C/R 18 & 9 MILE OF C/R P	
City CA	
County GLENN	
APN Book 046	Page 310 Parcel 060
Township 22 N	Range 2 W Section 30
Latitude	
DEG. MIN. SEC.	DEG. MIN. SEC.
LOCATION SKETCH	
NORTH	EAST
WEST	
SOUTH	
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.	
ACTIVITY (✓)	
<input checked="" type="checkbox"/> NEW WELL	
MODIFICATION/REPAIR	
— Deepen	
— Other (Specify)	
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
PLANNED USES (✓)	
WATER SUPPLY	
— Domestic — Public	
— Irrigation — Industrial	
MONITORING <input checked="" type="checkbox"/>	
TEST WELL —	
CATHODIC PROTECTION —	
HEAT EXCHANGE —	
DIRECT PUSH —	
INJECTION —	
VAPOR EXTRACTION —	
SPARGING —	
REMEDATION —	
OTHER (SPECIFY) —	

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL (Ft) & DATE MEASURED
ESTIMATED YIELD (GPM) & TEST TYPE
TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft)
May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)		CASING (S)			
Ft to Ft		TYPE (✓)		MATERIAL / GRADE			
ZONE		BLANK	SCREEN	CON. DUCTOR	FILL PIPE	INTERNAL DIAMETER (Inches)	SLOT SIZE IF ANY (Inches)
0	130	12	✓			PVC	2.5 SCH 80
130	140	12	✓			PVC	2.5 SCH 80 .030
140	150	12	✓			PVC	2.5 SCH 80
150	160	12	✓			PVC	2.5 SCH 80 .030
160	250	12	✓			PVC	2.5 SCH 80

DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft to Ft		TYPE			
		CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
725	789	✓			SAND SLURRY
789	920			✓	#8 GRD SAND

ATTACHMENTS (✓)
— Geologic Log
— Well Construction Diagram

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME EATON DRILLING CO.
EATON DRILLING CO. CORPORATION (TYPED OR PRINTED)

ORIGINAL
File with DWR

Page 3 of 3

Owner's Well No. 7677 MON

Date Work Began 5/6/2004, Ended 5/14/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW207-04 Permit Date 5/3/2004

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726922

DWR USE ONLY — DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ☒ ROTARY ☐ FLUID MUD

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain, size, color, etc.
0 20	SAND AND GRAVEL
20 60	TAN SILTY CLAY
60 70	SAND AND GRAVEL
70 120	TAN SILTY CLAY
120 160	SAND AND GRAVEL
160 220	TAN/BROWN SILTY CLAY
220 240	MED-CRS SAND
240 260	MED-CRS SAND WITH CLAY
260 320	TAN SILTY CLAY
320 360	POORLY GRD VOLCANIC SAND
360 380	POORLY SRTD SAND IN A VOLCANIC ASHY CL
380 400	POORLY GRD SAND AND GRAVEL
400 480	POORLY SRTD SAND AND GRAVEL W/CLAY
480 520	MED-CRS SAND WITH CLAY
520 540	POORLY GRD SAND
540 580	TAN CLAY
580 620	POORLY GRD SAND AND GRAVEL
620 640	TAN/BLUE CLAY W/POORLY GRD GRAVEL
640 660	BLUE CLAY W/POORLY GRD SAND
660 680	NED-CRS SAND W/METAMORPHIC GRAVEL
680 760	BLUE CLAY W/SAND AND GRAVEL
760 780	TAN/BROWN CLAY
780 800	DARK BLUE/GRAY CLAY W/FINE SAND
800 820	MED-CRS SAND W/BLUE CLAY
820 900	MED-CRS BLACK SAND AND GRAVEL
900 1020	TUSCAN CLAY AND ASH W/SOME FINE SAND

CITY

WELL LOCATION

Address 75 FT N OF C/R 18 & 9 MIE OF C/R P

City CA

County GLENN

APN Book 046 Page 310 Parcel 060

Township 22 N Range 2 W Section 30

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL —

CATHODIC PROTECTION —

HEAT EXCHANGE —

DIRECT PUSH —

INJECTION —

VAPOR EXTRACTION —

SPARGING —

REMEDICATION —

OTHER (SPECIFY) —

WEST
EAST
SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 920 (Feet)
TOTAL DEPTH OF COMPLETED WELL 900 (Feet)

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)				DEPTH FROM SURFACE	ANNULAR MATERIAL			
Ft. to Ft.			TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	Ft. to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
250	260	12	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80	0	31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SAND SLURRY
260	275	12	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80	31	88	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#8 GRD SAND
ZONE 3							88	114	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SAND SLURRY
0	850	12/10	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80	114	291	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	#8 GRD SAND
850	880	10	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80	291	307	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SAND SLURRY
880	900	10	<input checked="" type="checkbox"/>	PVC	2.5	SCH 80	307	725	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PEA GRAVEL

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

WOOD AND

CA

95695

ORIGINAL
File with DWR

Page 1 of 2

Owner's Well No. 7565

Date Work Began 7/11/2003, Ended 7/18/2003

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW 162-03 Permit Date 6/30/2003

0002 50 90V

WELL COMPLETION REPORT

STATE OF CALIFORNIA
Refer to Instruction Pamphlet

No. 726839

ABC

DWR USE ONLY -- DO NOT FILL IN	
22N/03W-01M	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	2	TOPSOIL
2	38	GRAVEL WITH COBBLES
38	115	LARGE GRAVEL WITH YELLOW CLAY
115	135	LARGE GRAVEL WITH SAND
135	240	YELLOW/BROWN CLAY WITH SAND AND GRVL
240	400	GRAVEL WITH GRAY/BLUE CLAY
400	460	BLUE CLAY WITH SAND AND GRAVEL STRKS
460	540	SAND AND GRAVEL WITH BLUE CLAY STRKS
540	590	BRITTLE BLUE CLAY WITH SAND
590	640	SND AND GRVL WITH BRITTLE BLU CLY STRK
640	800	BRITTLE BLUE CLAY WITH SAND STREAKS

WELL LOCATION
Address .25 MI E OF C/R P & 20 FT S OF C/R 6

City CA

County GLENN

APN Book 044 Page 130 Parcel 110

Township 22 N Range 3 W Section 1

Latitude

DEG. MIN. SEC.

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☒

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION ☐

OTHER (SPECIFY) ☐

WEST
SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 515 (Feet)

TOTAL DEPTH OF COMPLETED WELL 490 (Feet)

DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft.	to Ft.		TYPE (✓)		MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	Ft.	to Ft.	TYPE		FILTER PACK (TYPE/SIZE)
			BLANK	SCREEN							CE-MENT (✓)	BEN-TONITE (✓)	
ZONE 1	1								0	40	✓		SAND SLURRY
0	60	13	✓		PVC	2-1/2	SCH 80		40	103		✓	#8 GRD SAND
60	70	13		✓	PVC	2-1/2	SCH 80	0.030	103	230	✓		SAND SLURRY
70	80	13	✓		PVC	2-1/2	SCH 80		230	314	✓		#8 GRD SAND
ZONE 2	2								314	436	✓		SAND SLURRY
0	270	13	✓		PVC	2-1/2	SCH 80		436	515		✓	#8 GRD SAND

ATTACHMENTS (✓)

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analysis
- ☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

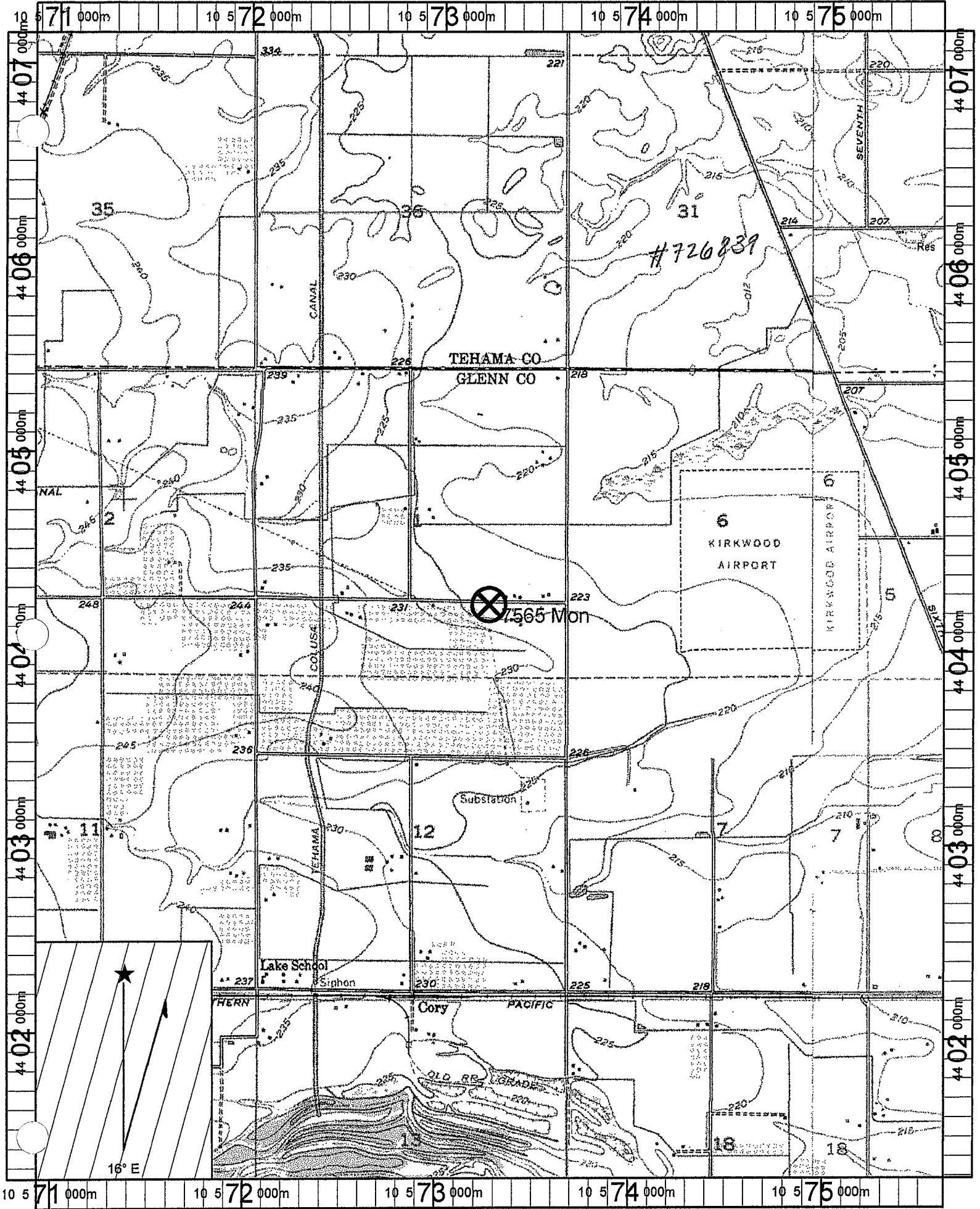
WELL DRILLER/AUTHORIZED REPRESENTATIVE

08/04/03

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER



JUN 30 2004

ORIGINAL
File with DWRSTATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726923**

Page 1 of 13

Owner's Well No. 7678 MON

Date Work Began 5/17/2004, Ended 5/27/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW208-04 Permit Date 5/3/2004

DWR USE ONLY		DO NOT FILL IN	
22N 03W -24			
STATE WELL NO./STATION NO.			
LATITUDE		LONGITUDE	
APN/TRS/OTHER			

GEOLOGIC LOGORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD ROTARY FLUID MUD

DEPTH FROM SURFACE

Ft. to Ft.

DESCRIPTION

Describe material, grain, size, color, etc.

0	10	POORLY GRD SAND
10	20	SAND AND GRAVEL
20	40	GRAVEL W/CRS SAND
40	50	MED-CRS SAND W/GRAVEL
50	60	MED-CRS SAND
60	70	LARGE GRAVEL W/FINE-CRS SAND
70	80	MED-CRS SAND W/GRAVEL
80	120	TAN SILTY CLAY
120	130	TAN SILTY CLAY W/SAND AND GRAVEL
130	140	MED SAND W/SILTY TAN CLAY
140	150	MED SAND
150	250	MED-CRS SAND W/GRAVEL
250	270	TAN SILTY CLAY
270	280	TAN SILTY CLAY W/MED-CRS SAND
280	300	TAN SILTY CLAY
300	310	TAN SILTY CLAY W/MED-CRS SAND
310	320	TAN SILTY CLAY
320	340	TAN SILTY CLAY W/MED SAND
340	350	TAN SILTY CLAY W/CRS-FINE SAND AND GRVL
350	360	TAN SILTY CLAY W/MED SAND
360	380	SAND
380	410	TAN SILTY CLAY
410	420	MED SAND W/CLAY, HARD SPOT @ 420 FT
420	440	TAN SILTY CLAY W/MED-CRS SAND
440	460	TAN SILTY CLAY
460	490	MED-CRS SAND
490	520	TAN STICKY CLAY
520	540	MED SAND W/SOME GRAVEL
540	590	TAN STICKY CLAY
590	630	TAN/BLUE CLAY

TOTAL DEPTH OF BORING 860 (Feet)

TOTAL DEPTH OF COMPLETED WELL 840 (Feet)

Address 125 FT N OF HWY 32 & 1000 FT E OF C/R N

City CA

County GLENN

APN Book 046 Page 150 Parcel 036

Township 22 N Range 3 W Section 24

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

— Deepen

— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY

— Domestic — Public

— Irrigation — Industrial

MONITORING ☒

TEST WELL —

CATHODIC PROTECTION —

HEAT EXCHANGE —

DIRECT PUSH —

INJECTION —

VAPOR EXTRACTION —

SPARGING —

REMEDICATION —

OTHER (SPECIFY) —

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)				
		TYPE (✓)				SLOT SIZE IF ANY (Inches)
Ft. to Ft.		BLANK	SCREEN	CON-DUCTOR	FILL PIPE	
ZONE 1	1					
0	50	12	✓			PVC 2.5 SCH 80
50	60	12	✓			PVC 2.5 SCH 80 .030
60	70	12	✓			PVC 2.5 SCH 80
ZONE 2	2					
0	130	12	✓			PVC 2.5 SCH 80

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
Ft. to Ft.	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	30	✓		SAND SLURRY
30	80			#8 GRD SAND
80	99			CHIPS
99	225			#8 GRD SAND
225	248		✓	CHIPS
248	625		✓	#8 GRD SAND

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

20 W. KENTUCKY AVE.

ADDRESS

WOODLAND

CITY

CA

STATE

95695

ZIP

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

06/01/04

DATE SIGNED

C57 A HIC - 133783

C-57 LICENSE NUMBER

ORIGINAL
with DWR

Page 2 of 3

Owner's Well No. 7678 MON

Date Work Began 5/17/2004, Ended 5/27/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT

Permit No. MW208-04

Permit Date 5/3/2004

STATE OF CALIFORNIA WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 726923

DWR USE ONLY -- DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓)		✓ VERTICAL	HORIZONTAL	ANGLE	(SPECIFY)
DEPTH FROM SURFACE		DRILLING METHOD ROTARY			
Ft. to Ft.		FLUID MUD			
		DESCRIPTION			
		Describe material, grain, size, color, etc.			
630	640	MED SAND			
640	650	BLUE CLAY W/MED-CRS SAND			
650	690	BLUE CLAY			
690	700	MED-CRS SAND			
700	710	BLUE/TAN CLAY			
710	740	MED SAND			
740	800	BRITTLE BLUE CLAY			
800	820	MED-CRS SAND			
820	880	BRITTLE BLUE CLAY			
880	900	MED SAND			
900	950	BLUE CLAY			
950	1020	VOLCANIC ASH AND CLAY			
1020	1030	TAN SILTY CLAY W/MED-CRS SAND			
1030	1040	TAN SILTY CLAY			
1040	1050	TAN SILTY CLAY W/MED-CRS SAND			
1050	1060	TAN SILTY CLAY			
1060	1070	TAN SILTY CLAY			
1070	1080	TAN SILTY CLAY			
1080	1090	TAN SILTY CLAY			
1090	1100	TAN SILTY CLAY			
1100	1110	TAN SILTY CLAY			
1110	1120	TAN SILTY CLAY			
1120	1130	TAN SILTY CLAY			
1130	1140	TAN SILTY CLAY			
1140	1150	TAN SILTY CLAY			
1150	1160	TAN SILTY CLAY			
1160	1170	TAN SILTY CLAY			
1170	1180	TAN SILTY CLAY			
1180	1190	TAN SILTY CLAY			
1190	1200	TAN SILTY CLAY			
1200	1210	TAN SILTY CLAY			
1210	1220	TAN SILTY CLAY			
1220	1230	TAN SILTY CLAY			
1230	1240	TAN SILTY CLAY			
1240	1250	TAN SILTY CLAY			
1250	1260	TAN SILTY CLAY			
1260	1270	TAN SILTY CLAY			
1270	1280	TAN SILTY CLAY			
1280	1290	TAN SILTY CLAY			
1290	1300	TAN SILTY CLAY			
1300	1310	TAN SILTY CLAY			
1310	1320	TAN SILTY CLAY			
1320	1330	TAN SILTY CLAY			
1330	1340	TAN SILTY CLAY			
1340	1350	TAN SILTY CLAY			
1350	1360	TAN SILTY CLAY			
1360	1370	TAN SILTY CLAY			
1370	1380	TAN SILTY CLAY			
1380	1390	TAN SILTY CLAY			
1390	1400	TAN SILTY CLAY			
1400	1410	TAN SILTY CLAY			
1410	1420	TAN SILTY CLAY			
1420	1430	TAN SILTY CLAY			
1430	1440	TAN SILTY CLAY			
1440	1450	TAN SILTY CLAY			
1450	1460	TAN SILTY CLAY			
1460	1470	TAN SILTY CLAY			
1470	1480	TAN SILTY CLAY			
1480	1490	TAN SILTY CLAY			
1490	1500	TAN SILTY CLAY			
1500	1510	TAN SILTY CLAY			
1510	1520	TAN SILTY CLAY			
1520	1530	TAN SILTY CLAY			
1530	1540	TAN SILTY CLAY			
1540	1550	TAN SILTY CLAY			
1550	1560	TAN SILTY CLAY			
1560	1570	TAN SILTY CLAY			
1570	1580	TAN SILTY CLAY			
1580	1590	TAN SILTY CLAY			
1590	1600	TAN SILTY CLAY			
1600	1610	TAN SILTY CLAY			
1610	1620	TAN SILTY CLAY			
1620	1630	TAN SILTY CLAY			
1630	1640	TAN SILTY CLAY			
1640	1650	TAN SILTY CLAY			
1650	1660	TAN SILTY CLAY			
1660	1670	TAN SILTY CLAY			
1670	1680	TAN SILTY CLAY			
1680	1690	TAN SILTY CLAY			
1690	1700	TAN SILTY CLAY			
1700	1710	TAN SILTY CLAY			
1710	1720	TAN SILTY CLAY			
1720	1730	TAN SILTY CLAY			
1730	1740	TAN SILTY CLAY			
1740	1750	TAN SILTY CLAY			
1750	1760	TAN SILTY CLAY			
1760	1770	TAN SILTY CLAY			
1770	1780	TAN SILTY CLAY			
1780	1790	TAN SILTY CLAY			
1790	1800	TAN SILTY CLAY			
1800	1810	TAN SILTY CLAY			
1810	1820	TAN SILTY CLAY			
1820	1830	TAN SILTY CLAY			
1830	1840	TAN SILTY CLAY			
1840	1850	TAN SILTY CLAY			
1850	1860	TAN SILTY CLAY			
1860	1870	TAN SILTY CLAY			
1870	1880	TAN SILTY CLAY			
1880	1890	TAN SILTY CLAY			
1890	1900	TAN SILTY CLAY			
1900	1910	TAN SILTY CLAY			
1910	1920	TAN SILTY CLAY			
1920	1930	TAN SILTY CLAY			
1930	1940	TAN SILTY CLAY			
1940	1950	TAN SILTY CLAY			
1950	1960	TAN SILTY CLAY			
1960	1970	TAN SILTY CLAY			
1970	1980	TAN SILTY CLAY			
1980	1990	TAN SILTY CLAY			
1990	2000	TAN SILTY CLAY			

TOTAL DEPTH OF BORING 860 (Feet)

TOTAL DEPTH OF COMPLETED WELL 840 (Feet)

WELL LOCATION
Address 125 FT N OF HWY 32 & 1000 FT E OF C/R N
City CA
County GLENN
APN Book 046 Page 150 Parcel 036
Township 22 N Range 3 W Section 24
Latitude

DEG.	MIN.	SEC.	DEG.	MIN.	SEC.
LOCATION SKETCH			ACTIVITY (✓)		
NORTH			✓ NEW WELL		
			MODIFICATION/REPAIR — Deepen — Other (Specify)		
SOUTH			— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")		
			PLANNED USES (✓) WATER SUPPLY — Domestic — Public — Irrigation — Industrial		
WEST			MONITORING — ✓		
			TEST WELL —		
EAST			CATHODIC PROTECTION —		
			HEAT EXCHANGE —		
			DIRECT PUSH —		
			INJECTION —		
			VAPOR EXTRACTION —		
			SPARGING —		
			REMEDICATION —		
			OTHER (SPECIFY) —		

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
FL	to	FL	BLANK	SCREEN	CON-DUCTOR	FILL PIPE				
130	150	12		✓			PVC	2.5	SCH 80	.030
150	170	12	✓				PVC	2.5	SCH 80	
170	180	12		✓			PVC	2.5	SCH 80	.030
180	195	12	✓				PVC	2.5	SCH 80	
ZONE	3									
0	800	12/10	✓				PVC	2.5	SCH 80	

DEPTH FROM SURFACE		ANNULAR MATERIAL				
		TYPE				
FL	to	FL	CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
625	772		✓			SAND SLURRY
772	860				✓	#8 GRD SAND

AUG 17 2004

ATTACHMENTS (✓)
Geologic Log

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

ORIGINAL
File with DWR

Page 3 of 83

Owner's Well No. 7678 MON

Date Work Began 5/17/2004, Ended 5/27/2004

Local Permit Agency GLENN COUNTY HEALTH DEPT.

Permit No. MW208-04 Permit Date 5/3/2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **726923**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID MUD

DEPTH FROM SURFACE		DESCRIPTION
Ft.	to Ft.	Describe material, grain, size, color, etc.
0	10	POORLY GRD SAND
10	20	SAND AND GRAVEL
20	40	GRAVEL W/CRS SAND
40	50	MED-CRS SAND W/GRAVEL
50	60	MED-CRS SAND
60	70	LARGE GRAVEL W/FINE-CRS SAND
70	80	MED-CRS SAND W/GRAVEL
80	120	TAN SILTY CLAY
120	130	TAN SILTY CLAY W/SAND AND GRAVEL
130	140	MED SAND W/SILTY TAN CLAY
140	150	MED SAND
150	250	MED-CRS SAND W/GRAVEL
250	270	TAN SILTY CLAY
270	280	TAN SILTY CLAY W/MED-CRS SAND
280	300	TAN SILTY CLAY
300	310	TAN SILTY CLAY W/MED-CRS SAND
310	320	TAN SILTY CLAY
320	340	TAN SILTY CLAY W/MED SAND
340	350	TAN SILTY CLAY W/CRS-FINE SAND AND GRVL
350	360	TAN SILTY CLAY W/MED SAND
360	380	SAND
380	410	TAN SILTY CLAY
410	420	MED SAND W/CLAY, HARD SPOT @ 420 FT
420	440	TAN SILTY CLAY W/MED-CRS SAND
440	460	TAN SILTY CLAY
460	490	MED-CRS SAND
490	520	TAN STICKY CLAY
520	540	MED SAND W/SOME GRAVEL
540	590	TAN STICKY CLAY
590	630	TAN/BLUE CLAY

WELL LOCATION
Address 125 FT N OF HWY 32 & 1000 FT E OF C/R N
City CA
County GLENN
APN Book 046 Page 150 Parcel 036
Township 22 N Range 3 W Section 24
Latitude

NORTH	LOCATION SKETCH	SOUTH	DEG. MIN. SEC. ACTIVITY (✓)
			<input checked="" type="checkbox"/> NEW WELL <input type="checkbox"/> MODIFICATION/REPAIR <input type="checkbox"/> Deepen <input type="checkbox"/> Other (Specify) <input type="checkbox"/> DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG") PLANNED USES (✓) WATER SUPPLY <input type="checkbox"/> Domestic <input type="checkbox"/> Public <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial MONITORING <input checked="" type="checkbox"/> TEST WELL <input type="checkbox"/> CATHODIC PROTECTION <input type="checkbox"/> HEAT EXCHANGE <input type="checkbox"/> DIRECT PUSH <input type="checkbox"/> INJECTION <input type="checkbox"/> VAPOR EXTRACTION <input type="checkbox"/> SPARGING <input type="checkbox"/> REMEDICATION <input type="checkbox"/> OTHER (SPECIFY) <input type="checkbox"/>

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD * (GPM) & TEST TYPE

TEST LENGTH (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 860 (Feet)

TOTAL DEPTH OF COMPLETED WELL 840 (Feet)

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)							ANNULAR MATERIAL						
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE					
Ft	to	Ft	BLANK	SCREEN	CON- DUCTOR	FILL PIPE									Ft	to	Ft
800	820	10		✓			PVC	2.5	SCH 80	.030	0	30	✓				SAND SLURRY
820	840	10	✓				PVC	2.5	SCH 80		30	80				✓	#8 GRD SAND
											80	99					CHIPS
											99	225					#8 GRD SAND
											225	248					CHIPS
											248	625				✓	#8 GRD SAND

ATTACHMENTS (✓)

Geologic Log
Well Construction Diagram

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME EATON DRILLING CO.

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ____ of ____

Owner's Well No. A

No. 801439A,B,C

Date Work Began _____, Ended _____

Local Permit Agency Glenn Co Health Dept

Permit No. _____ Permit Date 3/12/02

22N103W-28

DWR USE ONLY — DO NOT FILL IN

22N103W28P(1-3)41
STATE WELL NO./STATION NO.
T22H1A1E1 COMPLETION
LATITUDE _____ LONGITUDE _____
APN/TRS/OTHER _____

GEOLOGIC LOG

ORIENTATION (°) _____ VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY) _____

DRILLING METHOD Rotary FLUID Mud

DEPTH FROM SURFACE _____
FL. to FL. _____ DESCRIPTION _____
Describe material, grain size, color, etc.

0 20 Crs Subrounded gravel
10 55 Crs sand to crs gravel subrnd.
55 70 light greenish brown clay
70 120 Yellowish-orange brown clay
120 140 mixture of greenish-orange clay
140 158 grn to orange clay w/ crs qtz sand
158 162 Crs qtz sand, oxid. to subrnd.
162 190 grn to orange clay w/ crs qtz sand
190 270 grn clay + siltstone w/ few gravel
lenses
270 280 Crs rnd-angular sand
280 285 Crs rnd-ang. sand w/ 50% clay
285 290 med rnd-ang. sand w/ 10% clay
290 340 50% Crs sand / 50% orange-brown
clay
340 400 orange brown clay-
400 410 orange brown clay w/ 40% drk
rounded fine gravel
410 490 greenish-yellow brown clay
490 500 bright blue-green clay fat

WELL LOCATION

Address _____
City _____
County Glenn
APN Book 045 Page 340 Parcel 005
Township _____ Range _____ Section _____
Latitude _____ NORTH _____ WEST _____
DEG. MIN. SEC. Longitude _____
DEG. MIN. SEC.

LOCATION SKETCH

NORTH _____ SOUTH _____
WEST _____ EAST _____
Co. Rd _____
Interstate 5 _____
X
ACTIVITY (°) _____
NEW WELL _____
MODIFICATION/REPAIR _____
Deepen _____
Other (Specify) _____
DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG") _____
PLANNED USES (°) _____
WATER SUPPLY _____
Domestic _____ Public _____
Irrigation _____ Industrial _____
MONITORING _____
TEST WELL _____
CATHODIC PROTECTION _____
HEAT EXCHANGE _____
DIRECT PUSH _____
INJECTION _____
VAPOR EXTRACTION _____
SPARGING _____
REMEDICATION _____
OTHER (SPECIFY) _____

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* May not be representative of a well's long-term yield.

* This well was constructed w/ 3 completions.
1 = deep 2 = moderate 3 = shallow
421' 311' 71'

TOTAL DEPTH OF BORING 500 (Feet)

TOTAL DEPTH OF COMPLETED WELL 421 (Feet)

Comp*	DEPTH FROM SURFACE		BORE-HOLE DIA. (Inches)	CASING (S)							DEPTH FROM SURFACE		ANNULAR MATERIAL					
	Ft.	to Ft.		TYPE (\leq)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	Ft.	to Ft.	TYPE				
				BLANK	SCREEN	CON- DUCTOR	FILL PIPE							CE- MENT (\leq)	BEN- TONITE (\leq)	FILL (\leq)	FILTER PACK (TYPE/SIZE)	
1.	421	390	400	Surface	X				Steel	2"	Sch 40	—	430	373.5				#8 sand
	400	390			X				Steel	2"	Sch 40	.020	373.5	304	✓			
2.	311	270	210	Surface	X				Steel	2"	Sch 40	—	304	250				#8 Sand
	270	270			X				Steel	2"	Sch 40	.020	250	69	✓			
3.	71	30	50	Surface	X				Steel	2"	Sch 40	—	69	23				#8 Sand
	50	30			X				Steel	2"	Sch 40	.020	23	0	✓			2002

ATTACHMENTS (°)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analyses
- Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Spectrum Exploration

ADDRESS P.O. Box 471 CITY Zamora STATE CA ZIP 95698

Signed Charlie Borchers DATE SIGNED 5/1/02 C-57 LICENSE NUMBER 512268

Department of Water Resources
Olivares Deep Well

801439

Casing

Deep Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
421 - 400		Blank	Steel	2"	Sch 40	
400 - 390		Screen	Steel	2"	Sch 40	.020
390 - +"		Blank	Steel	2"	Sch 40	
411 - +"		Blank	Steel	1"	Sch 40	

Middle Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
311 - 290		Blank	Steel	2"	Sch 40	
290 - 270		Screen	Steel	2"	Sch 40	.020
270 - +		Blank	Steel	2"	Sch 40	
301 - +		Blank	Steel	1"	Sch 40	

Shallow Well

<u>Ft. to Ft.</u>	<u>Borehole Dia.</u>	<u>Type</u>	<u>Material Grade</u>	<u>Internal Dia</u>	<u>Gauge</u>	<u>Slot Size</u>
71 - 50		Blank	Steel	2"	Sch 40	
50 - 30		Screen	Steel	2"	Sch 40	.020
30 - +		Blank	Steel	2"	Sch 40	
61 - +		Blank	Steel	1"	Sch 40	

Annular Material

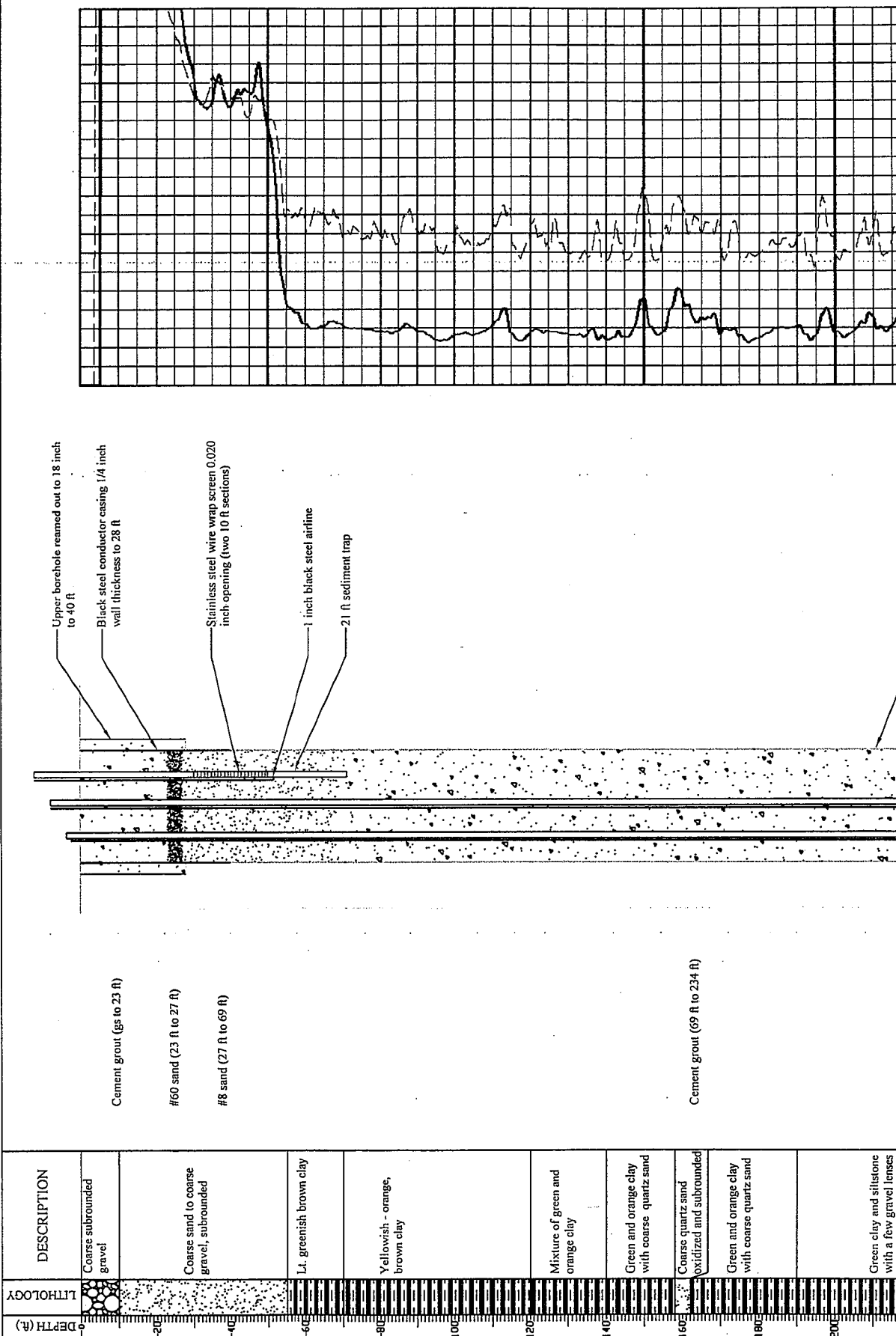
Ft. to Ft. Type

#801439

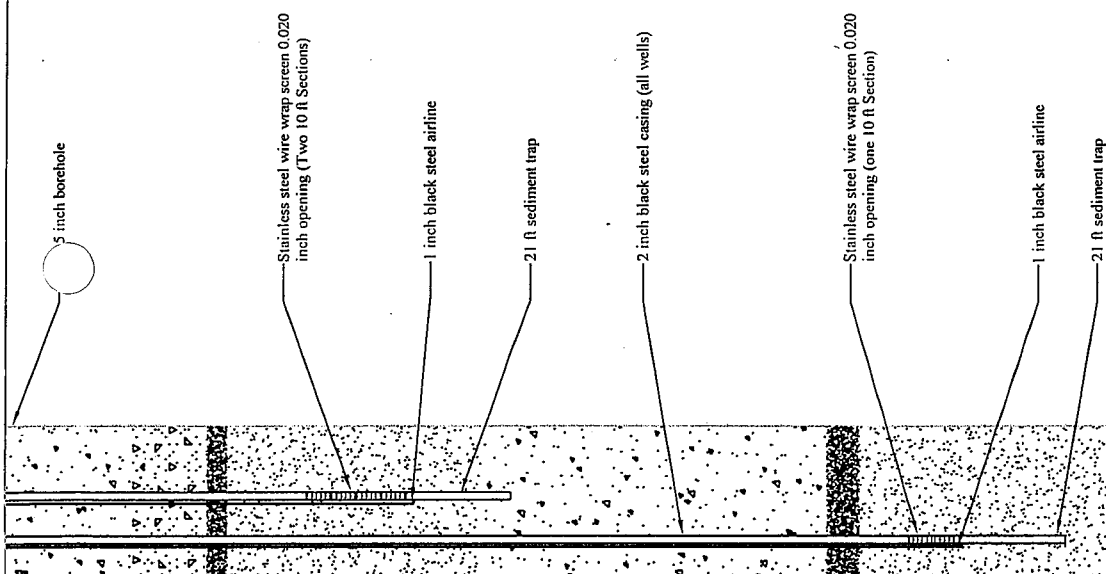
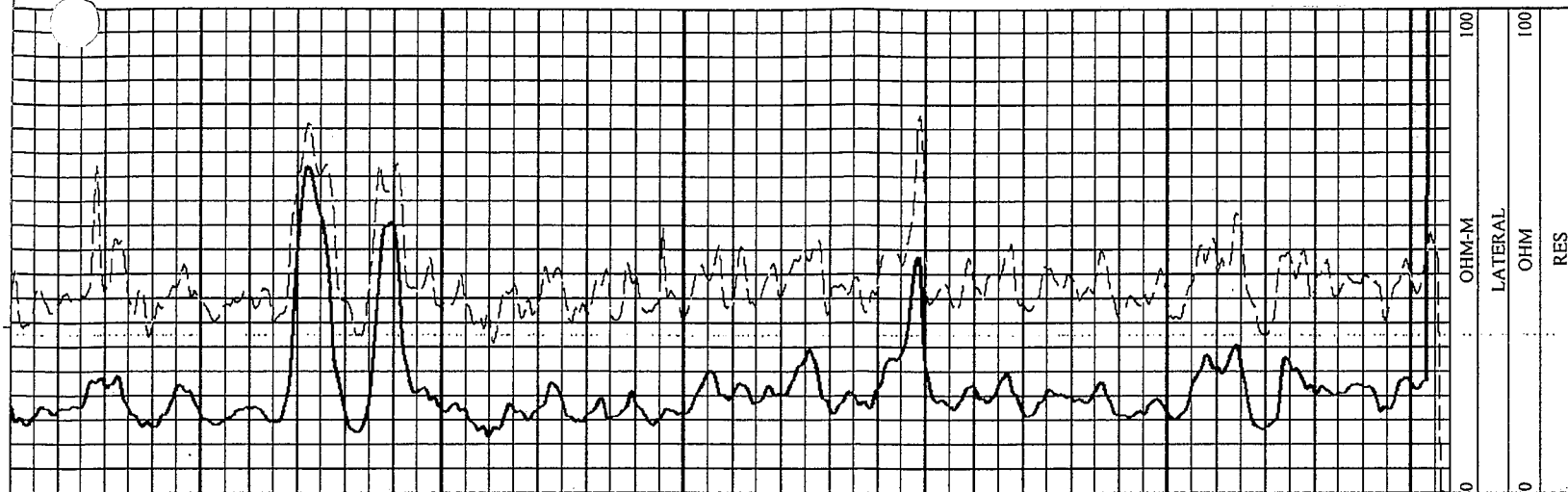
STATE WELL NUMBERS: 22N03W28P01M
22N03W28P02M
22N03W28P03M

STATE OF CALIFORNIA - RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

PROJECT	Stony Creek Recharge Pilot Project	HOLE NUMBER	Well A - Olivarez Site	NUMBER OF COMPLETIONS	3	CONTRACTOR	Spectrum Exploration, Inc.
FEATURE	Triple Completion Monitoring Well	TOTAL DEPTH	430 ft	TYPE OF HOLE	Direct Rotary	DRILL FOREMAN	Randy Criner
LOCATION	Glenn County, County Rd 20 and Interstate 5	DATE STARTED	4/17/02	TYPE OF RIG	Ingersoll Rand	INSPECTED BY	Debbie Spangler/ Kelly Staton
UTM COORDINATES	UTM 10 NAD 83 567946, 4397861	DATE COMPLETED	4/26/02	COMMENTS	Test hole drilled to 500 ft.; well completed to 421 ft.		



#801439



Hot batch grout (234 ft to 250 ft)

#60 sand (250 ft to 254 ft)

#8 sand (254 ft to 304 ft)

Cement grout (304 ft to 373 ft)

#60 sand (373 ft to 380 ft)

#8 sand (380 ft to 430 ft)

