Geologic, Water-Chemistry, and Hydrologic Data from Multiple-Well Monitoring Sites and Selected Water-Supply Wells in the Santa Clara Valley, California, 1999–2003

By M.W. Newhouse, R.T. Hanson, C.M. Wentworth, Rhett R. Everett,

C.F. Williams, J.C. Tinsley, T.E. Noce, and B.A. Carkin

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Santa Clara Valley Water District

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Conversion Factors, Vertical Datum, Water-Chemistry (and other) Units, and Abbreviations

CONVERSION FACTORS

Multiply	By	To obtain
acre	0.4047	square hectometer
foot (ft)	0.3048	meter
foot per day (ft/d)	0.3048	meter per day
foot per second (ft/s)	0.3048	meter per second
square foot per day (ft^2/d)	0.09290	square meter per day
inch (in.)	25.4	millimeter
mile (mi)	1.609	kilometer
square mile (mi^2)	2.590	square kilometer
pound (lb)	0.4536	kilogram

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F=1.8\ °C+32.$$

VERTICAL DATUM

Sea level, in this report, refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

WATER-CHEMISTRY (AND OTHER) UNITS

Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (µS/cm at 25°C). Concentrations of chemical constituents in water are given in milligrams per liter (mg/L) or micrograms per liter (µg/L).

Stable-isotope data for oxygen and hydrogen are reported in delta (δ) notations as per mil (parts per thousand). Carbon-14 is reported as percent modern carbon (pmc). Tritium activity is reported in picocuries per liter (pCi/L).

Core-sample density is reported in grams per cubic centimeter (g/cm^3).

ABBREVIATIONS

bls	below land surface
CCOC	Coyote Creek Outdoor Classroom
cm	centimeter
CPT	cone penetrometer test
ELNR	Eleanor Park
EM	electromagnetic conductivity
EVGR	Evergreen
ft bls	foot below land surface

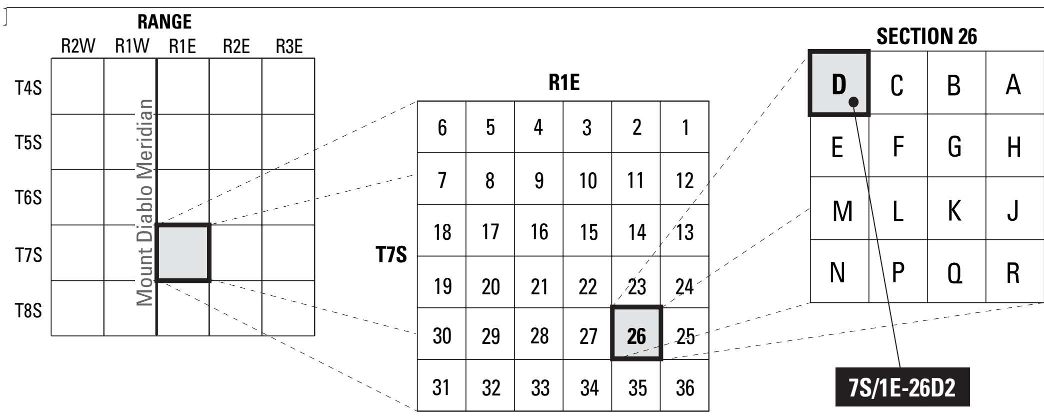
GUAD	Guadalupe
kg/cm^2	kilogram per square centimeter
km/sec	kilometer per second
MGCY	McGlincey
mm	millimeter
MSL	multi-sensor logger
NWIS	(USGS) National Water Information System
PDB	Peedee Belemnite
PVC	polyvinyl chloride
p-wave	primary-wave (velocity)
STGA	Saratoga
STPK	Santana Park
VSMOW	Vienna Standard Mean Ocean Water
WLLO	Willow
WRRDU	Western Region Research Drilling Unit (USGS)
ybp	years before present

Organizations

Cal-EPA	California Environmental Protection Agency
SCVWD	Santa Clara Valley Water District
USGS	U.S. Geological Survey

Well-Numbering System

Wells are identified and numbered according to their location in the rectangular system for the subdivision of public lands. Identification consists of the township number, north or south; the range number, east or west; and the section number. Each section is divided into sixteen 40-acre tracts lettered consecutively (except I and O), beginning with "A" in the northeast corner of the section and progressing in a sinusoidal manner to "R" in the southeast corner. Within the 40-acre tract, wells are sequentially numbered in the order they are inventoried. The final letter refers to the base line and meridian. In California, there are three base lines and meridians; Humboldt (H), Mount Diablo (M), and San Bernardino (S). All wells in the study area are referenced to the Mount Diablo base line and meridian (M). Well numbers consist of 15 characters and follow the format 007S001E26D002M. In this report, well numbers are abbreviated and written 7S/1E-26D2. Wells in the same township and range are referred to only by their section designation, 26D2. The following diagram shows how the number for well 7S/1E-26D2 is derived.



Well-numbering diagram (Note: maps in this report use abbreviated well numbers such as **"26D2"**)

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Abstract

To better identify the three-dimensional geohydrologic framework of the Santa Clara Valley, lithologic, geologic, geophysical, geomechanical, hydraulic, and water-chemistry data were collected from eight ground-water multiple-well monitoring sites constructed in Santa Clara County, California, as part of a series of cooperative studies between the U.S. Geological Survey and the Santa Clara Valley Water District. The data are being used to update and improve the three-dimensional geohydrologic framework of the basin and to address issues related to water supply, water chemistry, sequence stratigraphy, geology, and geological hazards. This report represents a compilation of data collected from 1999 to 2003, including location and design of the monitoring sites, cone penetrometer borings, geologic logs, lithologic logs, geophysical logs, core analysis, water-chemistry analysis, ground-water-level measurements, and hydraulic and geomechanical properties from wells and core samples.

Exploratory cone penetrometer borings taken in the upper 17 to 130 feet at six of the monitoring sites identified the base of Holocene as no deeper than 75 feet in the central confined area and no deeper than 35 feet in the southern unconfined areas of the valley. Generalized lithologic characterization from the monitoring sites indicates about four to six different aquifer units separated by relatively fine-grained units occur within the alluvial deposits shallower than 860 feet deep. Analysis of geophysical logs indicates that coarse-grained units varied in thickness between 10 and 25 feet in the southeastern unconfined area of the valley and between 50 and 200 feet in the south-central and southwestern areas of the valley. Deviations from temperature-gradient logs indicate that the majority of horizontal ground-water flow occurs above a depth of 775 feet in the south central and above 510 feet in the southeastern areas of the valley. Bulk physical properties from more than 1,150 feet of core samples indicate an average primary-wave velocity of about 5,515 feet per second, a bimodal distribution of density between 2.19 and 2.32 grams per cubic centimeter with an average of 2.16 grams per cubic centimeter, and a magnetic susceptibility that generally ranged between 9 and 40 with an average of 22.

Water-chemistry data indicate that the ground water in the alluvial aquifers generally is low in total dissolved solids and chloride and of good quality. Isotopic data indicate that water from artificial recharge is present throughout the shallower parts of the aquifer system but may not be present toward the center of the valley. The percentage of water from artificial recharge present in ground water ranges from 0 to 61 percent for water-supply wells. The age of most shallow ground water is less than 2,000 years before present, and the age of deeper ground water is as much as 39,900 years before present, as determined from carbon age dates.

Initial water-level data from the multiple-well monitoring sites indicate seasonal water-level fluctuations as great as 60 feet and water-level differences between aquifers as great as 10 feet. The water-level hydrographs indicate different water-level changes and relations between aquifers in different parts of the basin. However, most of these hydrographs indicate the potential for downward water-level gradients, with lower hydraulic heads in the deeper monitoring wells.

Hydraulic properties of selected new monitoring wells indicate that horizontal hydraulic conductivities range from 0.1 to 583 feet per day. Hydraulic testing of selected core samples yielded vertical hydraulic conductivity values ranging from 8×10^{-4} to 0.3 feet per day, and effective porosity values ranging from 0.21 to 0.4. Geomechanical properties estimated from one-dimensional consolidation tests of selected core samples resulted in geometric mean inelastic and elastic specific storage values of 1.5×10^{-4} and 1.2×10^{-5} per foot, respectively.

Introduction

Ground-water levels in the Santa Clara Valley have been recovering since the mid-1960s as a result of better resource management, conservation, imported water, and artificial recharge (Santa Clara Valley Water District, 2004; Poland and Ireland, 1988). The Santa Clara Valley Water District (SCVWD) needs to meet future ground-water demands during drought conditions while at the same time limiting land subsidence. The complexities of subsidence and ground-water flow in the Santa Clara Valley still are not completely understood. The existing monitoring and modeling tools need to be upgraded and updated to provide water managers with necessary data and tools to address the water-management issues. Improvement of the subsidence-monitoring network was addressed by the SCVWD and the U.S. Geological Survey (USGS) in 1998 (Galloway and others, 2000). Several studies, including the SCVWD modeling efforts (CH2M Hill, 1992), completed since the original USGS subsidence studies (Poland and Ireland, 1988) have attempted to address the issues of regional ground-water development and the related effects of subsidence. However, none of these studies include recent data or much geochemical data, geomechanical data, or three-dimensional water-level data, which are needed to address the complex water-resources management issues facing the SCVWD.

Purpose and Scope

The purpose of this report is to present a compilation and summary of all data collected at eight new multiple-well monitoring sites along with related tests and measurements in the Santa Clara Valley completed between 2000 and 2003 and water-chemistry data collected between 1999 and 2003. To better identify the three-dimensional geohydrologic framework of the Santa Clara Valley and improve the ground-water management strategy, gaps in the ground-water monitoring network were identified previously (Jaimes, 1998). Included in the current report are lithologic and geologic data, geophysical data, water-chemistry data, and hydrologic data. In addition to summarizing data collection, this report presents initial interpretations and estimates from these data. The geologic interpretations include thicknesses, Holocene and bedrock depths, specific storage, and core attributes. The water-chemistry interpretations include age dates and estimates of percentages of artificial recharge. The hydrologic interpretations include water-level differences and estimates of hydraulic conductivity.

Approach

The multiple-well monitoring site locations were selected jointly by the SCVWD and the USGS on the basis of scientific merit, access, and safety. Eight multiple-well monitoring well sites include a total of 38 individual ground-water monitoring wells and 6 cone penetrometer exploratory borings. Seven of the monitoring site boreholes were designed to have a total depth of 1,000 ft below land surface (bls), and one site was designed to have a total depth about 1,300 ft bls in order to penetrate the top of the underlying basement rocks. The sites were completed with either continuous drilling, continuous drilling with selected coring, or continuous coring. Two sites were drilled with continuous drilling, five sites were drilled with selected coring, and one site was drilled with continuous coring to 1,000 ft bls and then selected coring to the underlying basement rocks at selected depths.

The Earthquake Hazards Program Research Cone Penetrometer Drilling Unit of the USGS performed exploratory cone penetrometer tests (CPT) at seven sites. Subsequent to the CPT, the USGS Western Region Research Drilling Unit (WRRDU) drilled and cored a borehole to target depth or bedrock at each site. After the borehole was drilled, the WRRDU collected borehole geophysical data and installed the multiple wells separated vertically by seals in the borehole. At some sites the shallowest well was installed in a separate shallow borehole. Subsequent well development and water sampling were performed by either USGS or SCVWD personnel. Slug tests were performed at three of the eight sites. Most water-chemistry analysis was done by the USGS, with additional water-chemistry analysis performed by SCVWD. The types of data collected at each site were dependent, in part, on the scope of drilling, construction, and testing designated for each site.

Cores collected from boreholes varied in length from a target length of 2.5 ft to 5 ft. All cores were analyzed for geology, lithology, and various physical properties at the USGS Marine Geology Core Laboratories in Menlo Park, California. Geologic and lithologic descriptions and high-resolution digital photography were completed on all cores, and selected whole-core samples were collected for selected physical properties. Physical properties measured from whole-core samples included acoustic velocity, bulk density, and magnetic susceptibility. Whole-core subsamples were measured for thermal conductivity, hydraulic conductivity, magnetic orientation, compressibility, and pore-water chemistry.

Description of Study Area

The Santa Clara Valley is a broad plain extending about 25 mi southeast from San Francisco Bay (fig. 1). The valley drains an area of about 240 mi^2 of coastal central California by a network of about 700 mi of tributaries and rivers that flow toward the southern end of San Francisco Bay. Beneath the valley is an alluvial basin bounded on the southwest and northeast by faults and adjacent mountain ranges. The basin has undergone extensive ground-water development in the upper aquifers, which are composed of Quaternary and Pleistocene fluvial and marine deposits (fig. 2). Extensive ground-water development also has occurred below these deposits in the Pleistocene and Pliocene fluvial deposits that are herein referred to as the "lower aquifers." The alluvial deposits that form the regional aquifer systems are unconformably underlain by the Miocene Monterey Formation (not shown in fig. 2), and the Mesozoic Great Valley Sequence, Franciscan complex, including serpentinite (fig. 2). These rocks form the relatively impermeable base of the regional aquifer systems in the Santa Clara Valley.

The alluvial aquifer systems are composed of a complex sequence of discontinuous layers of fluvial sand and gravel and fluvial fine-grained silt and clay. The multiple-well monitoring sites completed by the USGS indicate that the fine-grained layers generally are 5- to 30-ft thick and generally are thinner than previously depicted (California Department of Water Resources, 1967, fig. 3). These wells also indicate that the aquifer systems contain extensive coarse-grained water-bearing zones. This is exemplified by the lithologic and geophysical logs completed at the Coyote Creek Outdoor Classroom (CCOC) site (fig. 3) where coarse-grained layers extend to depths greater than 800 ft bls (Hanson and others, 2002).

The target depth of 1,000 ft at each monitoring-well site was designed to penetrate all of the water-bearing alluvium penetrated by water-supply wells. Previous geologic investigations have identified the materials between 670 to 1,000 ft bls in the Santa Clara Valley as undifferentiated fluvial sediments that were grouped with shallower sediments as part of the lower aquifer system (for example, CH2M Hill, 1992). The completion of the monitoring-well sites and analyses of related data summarized in this report will provide a basis for the reevaluation of the stratigraphy and grouping of the upper and lower regional aquifer systems within the Santa Clara Valley.

Acknowledgments

This study could not have been accomplished without the assistance of personnel from the Santa Clara Valley Water District. In particular Bezhad Ahmadi, Mark Merritt, Vanessa Reymers, Roger Pierno, Randy Behrens, and Chanie Wossen Abuye of the SCVWD Ground-Water Management group are especially acknowledged for their assistance with compilation of data needed to site, drill, and complete the new network of multiple-well monitoring sites. Guidance with sediment description and associated research was provided by Dave Anderson and Malia Burrows, San Jose State University. In addition, we acknowledge the valuable guidance of U.S. Geological Survey geologists and geophysicists of the Earth Surface Processes Group, Earthquake Hazards Group, Coastal Marine Geology Group, and Urban Hazards Group and thank them for their efforts supporting the selection of sites, collection of data, and subsequent analysis. In particular we thank Robert Jachens, Robert Williams, and Richard Stanley for their contribution to seismic imaging and other geophysical analyses, core descriptions, and basin stratigraphy and structure. We also thank Peter Martin for his assistance and technical guidance in drilling and geophysical log analysis. In addition, two of the sites were completed in cooperation with the SCVWD and the California Department of Water Resources under the AB303 grant program (California Department of Water Resources, 2003).

Design of Monitoring Sites

Between 1999 and 2003, 38 monitoring wells were installed at 8 sites in the Santa Clara Valley Water District area, Santa Clara County, California (fig. 1 and table 1, at end of report). Each site consists of more than one well and is referred to as a "multiple-well monitoring site." The borehole is a telescoping-diameter design, ranging from 6 to 17.5 in. in diameter, with the smallest drilled diameter at total depth and largest drilled diameter at the land surface. In some instances 10- to 12-in. surface conductor casing was used in accordance with Santa Clara Valley Water District Wells and Water Production Unit requirements (Lorance and Iwamura, 1989). The construction of these wells enables the collection of depth-specific water-level, water-chemistry, and aquifer hydraulic-property data. The final well completions of the eight multiple-well monitoring sites for this study are summarized in table 2, at end of report.

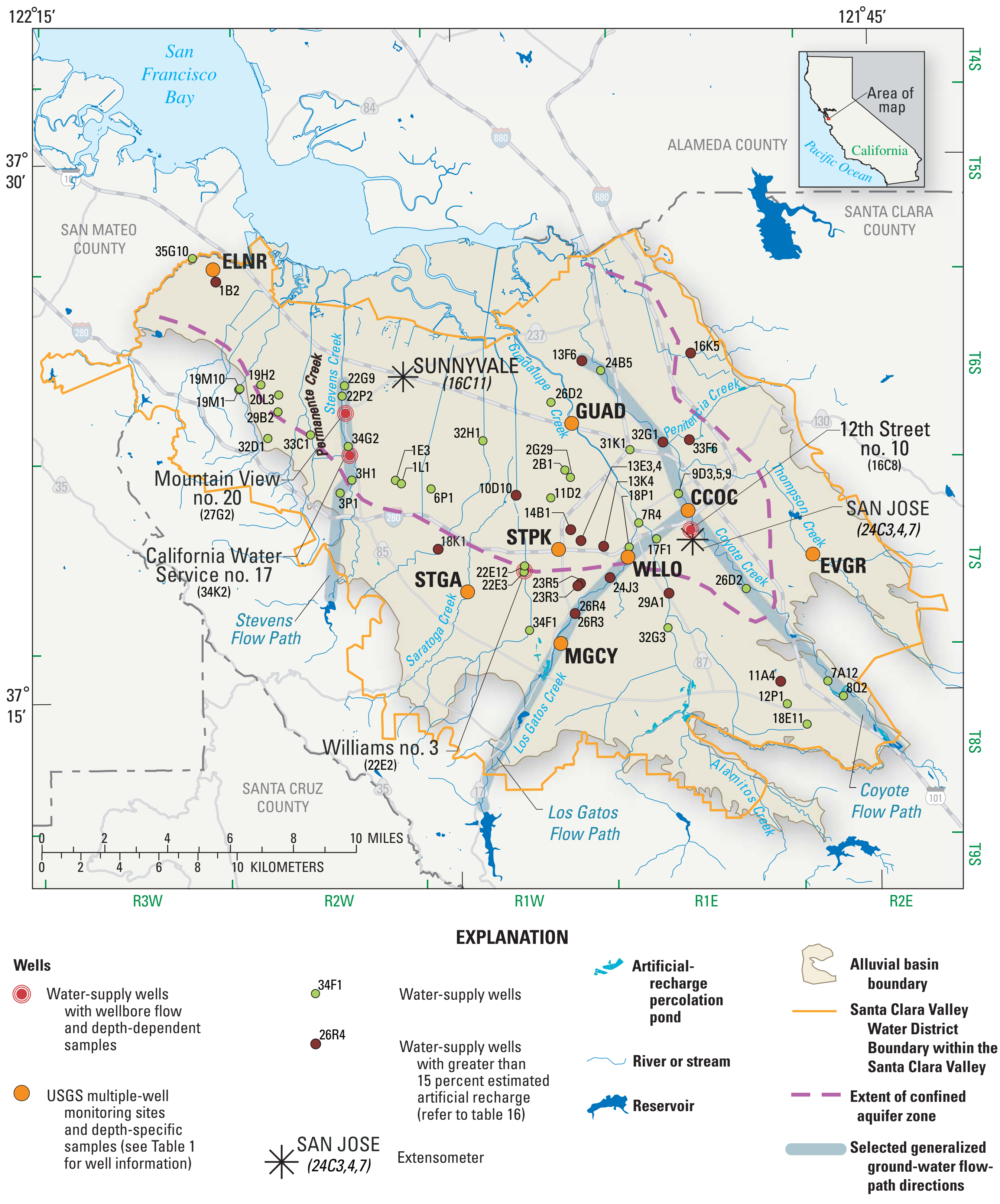
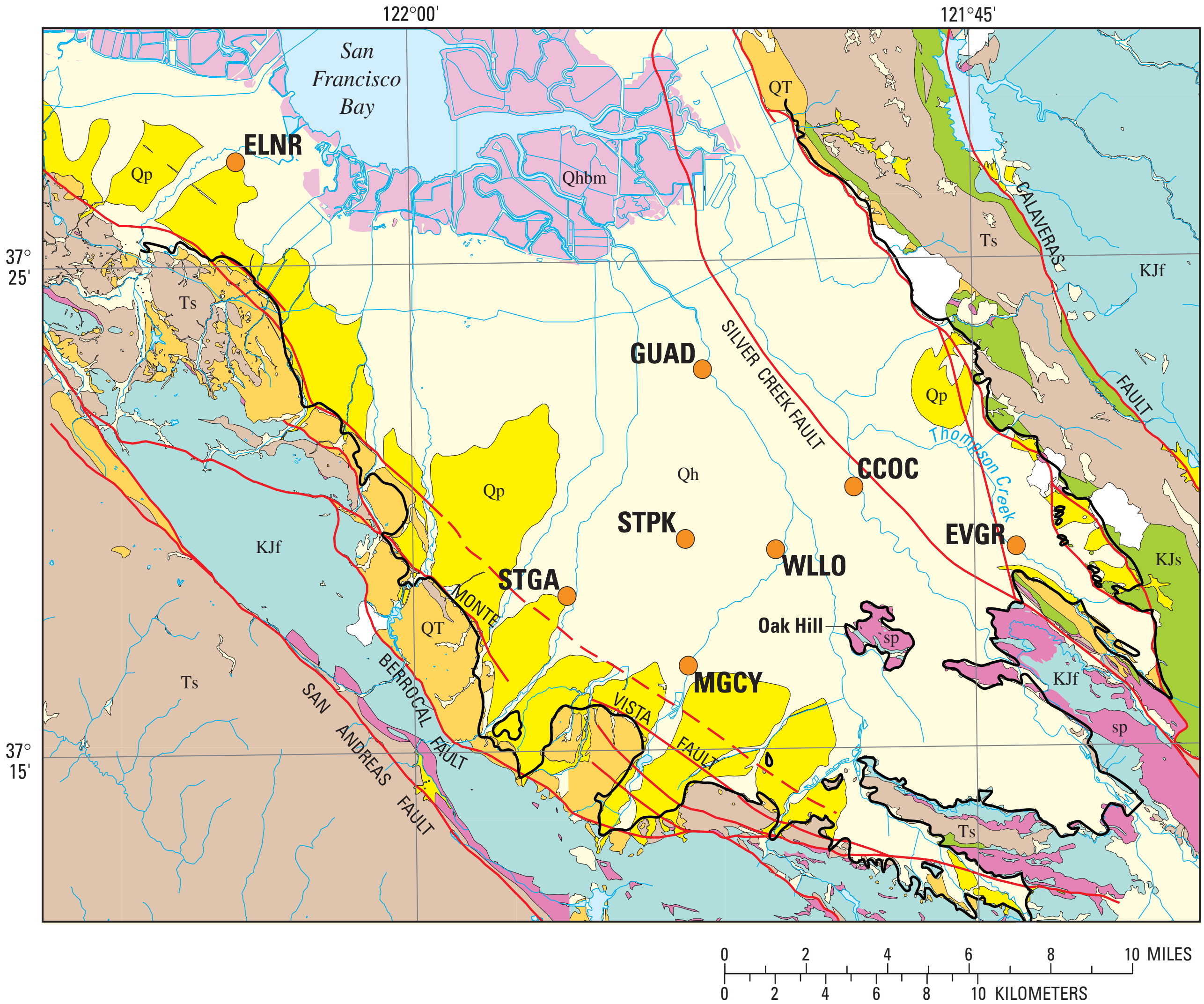


Figure 1. Multiple-well monitoring sites and selected water-supply wells, Santa Clara County, California.



EXPLANATION

Quaternary—Unconsolidated sedimentary deposits

- Qp — Late-Pleistocene-age deposits
- Qh — Holocene-age deposits
- Qhbm — Holocene-age Bay muds

Tertiary—Consolidated/unconsolidated sedimentary deposits

- Ts — Tertiary-age sedimentary deposits (includes some volcanics and the Monterey Formation)
- QT — Pliocene-Quaternary-age sedimentary deposits (Santa Clara Formation and equivalents)

Mesozoic—Consolidated rock

- KJf — Franciscan assemblage
- KJs — Great Valley sequence
- sp — Serpentinite and associated Coast Range ophiolite complex

Faults—Dashed where inferred

Alluvial basin boundary

USGS multiple-well monitoring sites and depth-specific samples (see Table 1 for well information)

Figure 2. Geologic outcrops and major structural features, Santa Clara County, California.

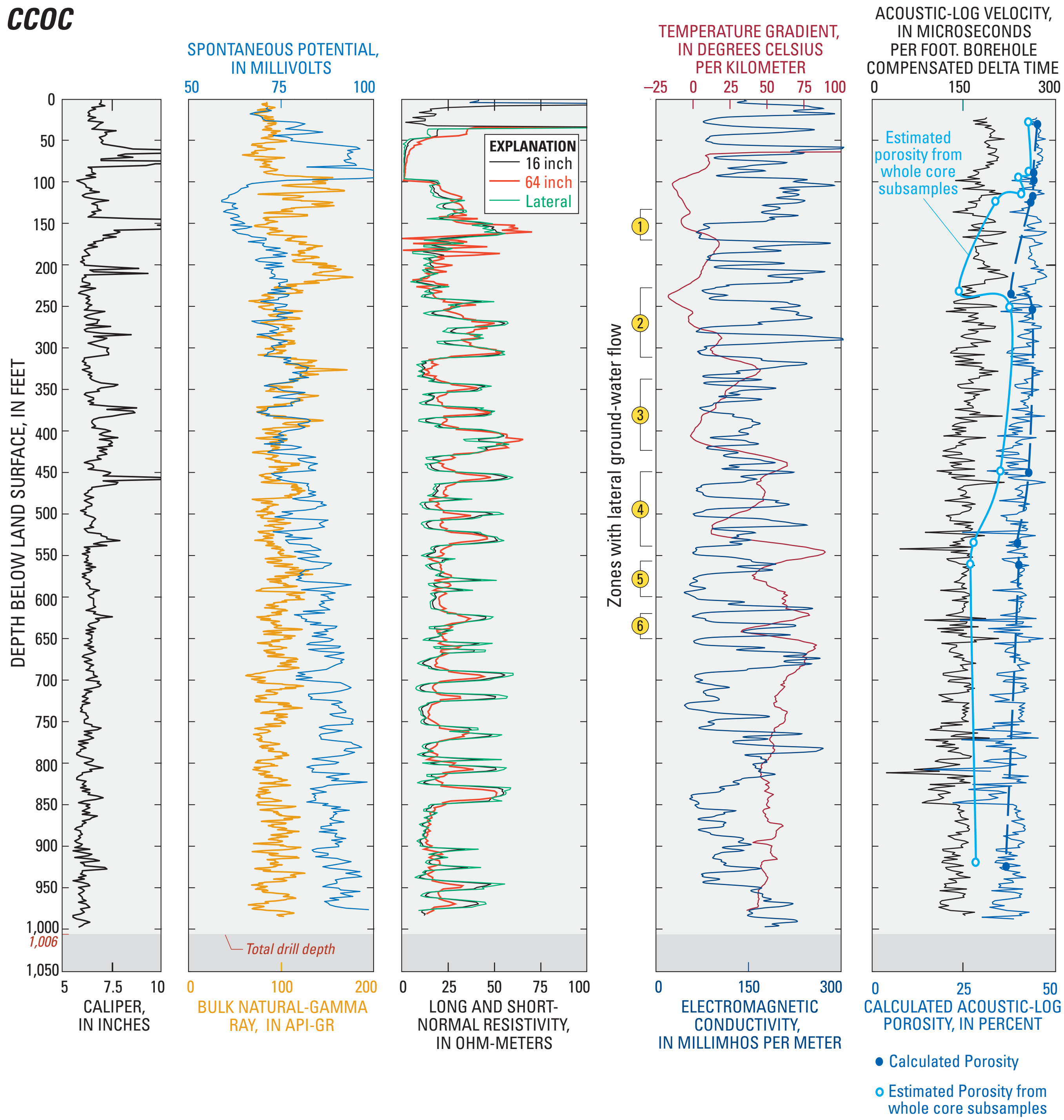
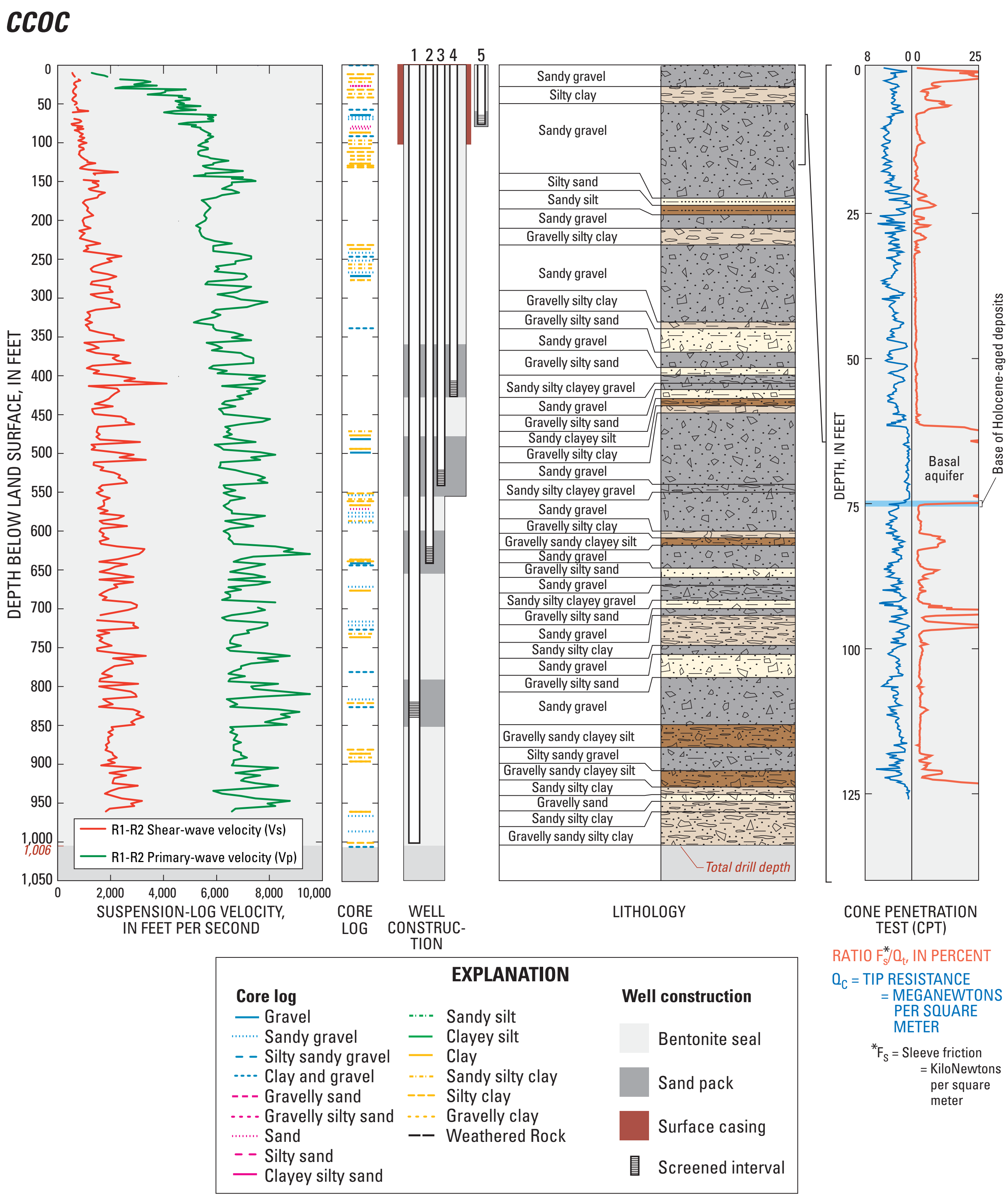


Figure 3. Geophysical logs, well-construction diagram, and generalized lithologic description for Coyote Creek Outdoor Classroom (7S/1E-9L4–8) multiple-well site, Santa Clara County, California.



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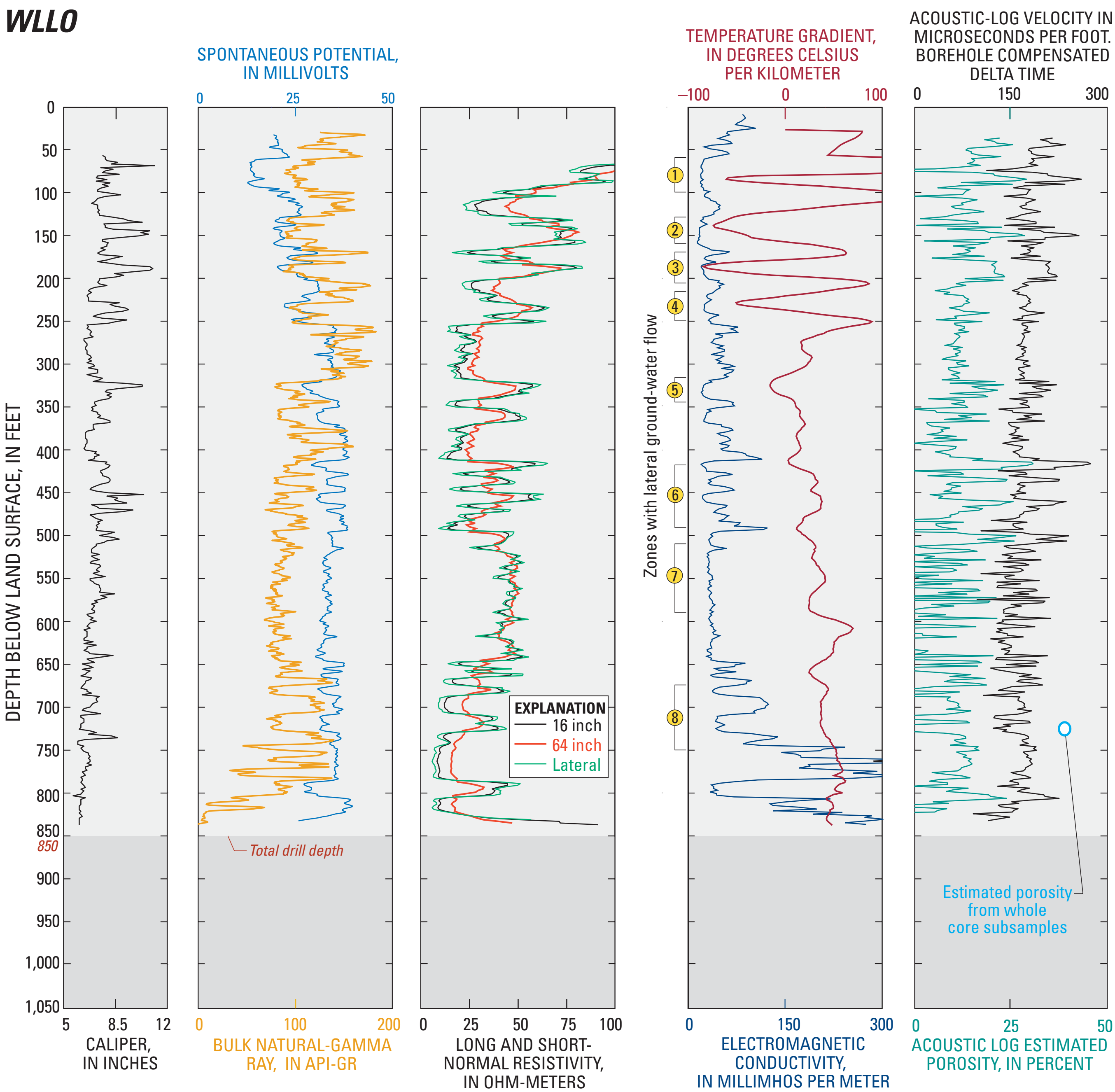
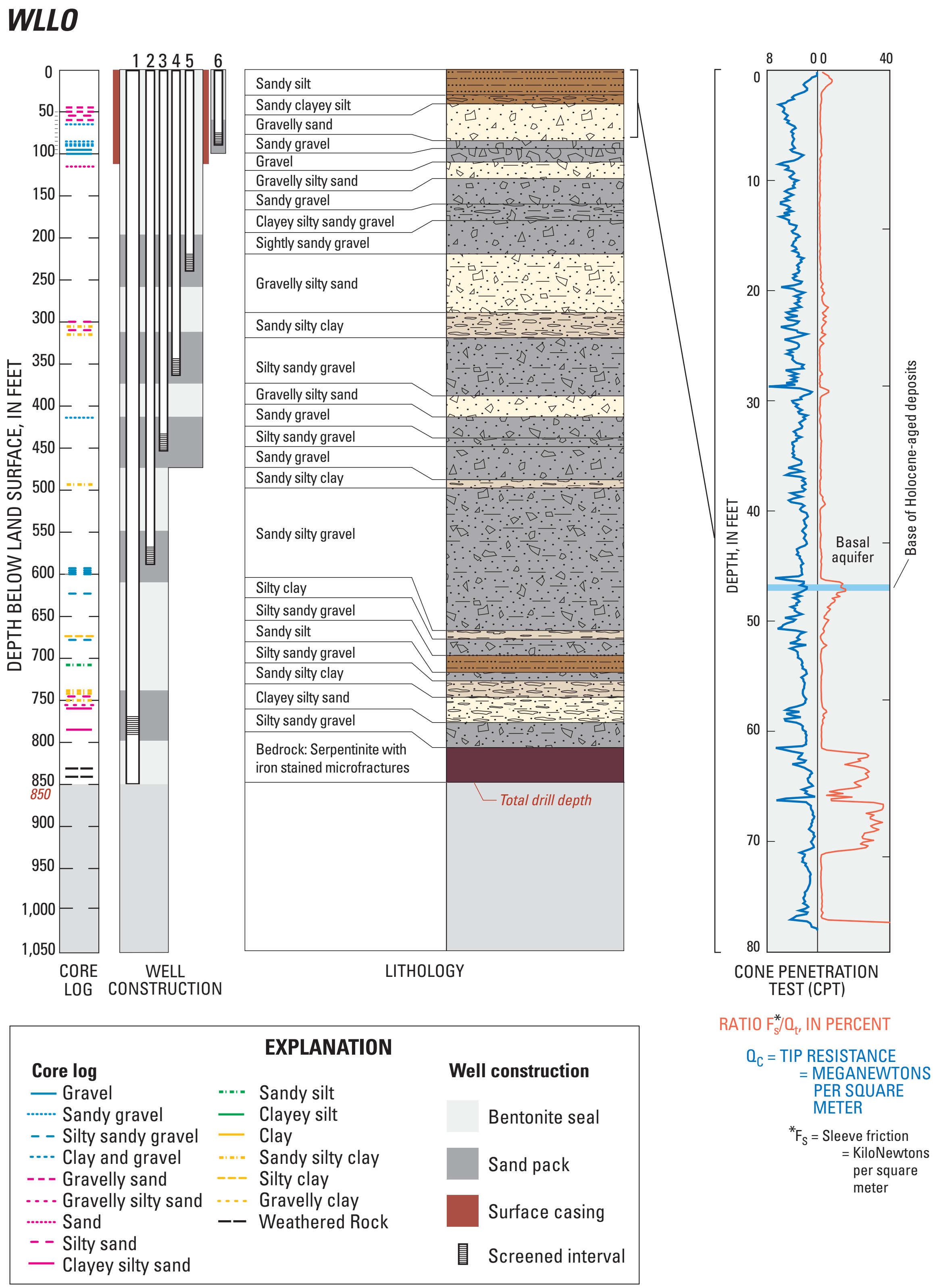


Figure 4. Geophysical logs, well-construction diagram, and generalized lithologic description for Willow (7S/1E-19B2–7) multiple-well site, Santa Clara County, California.



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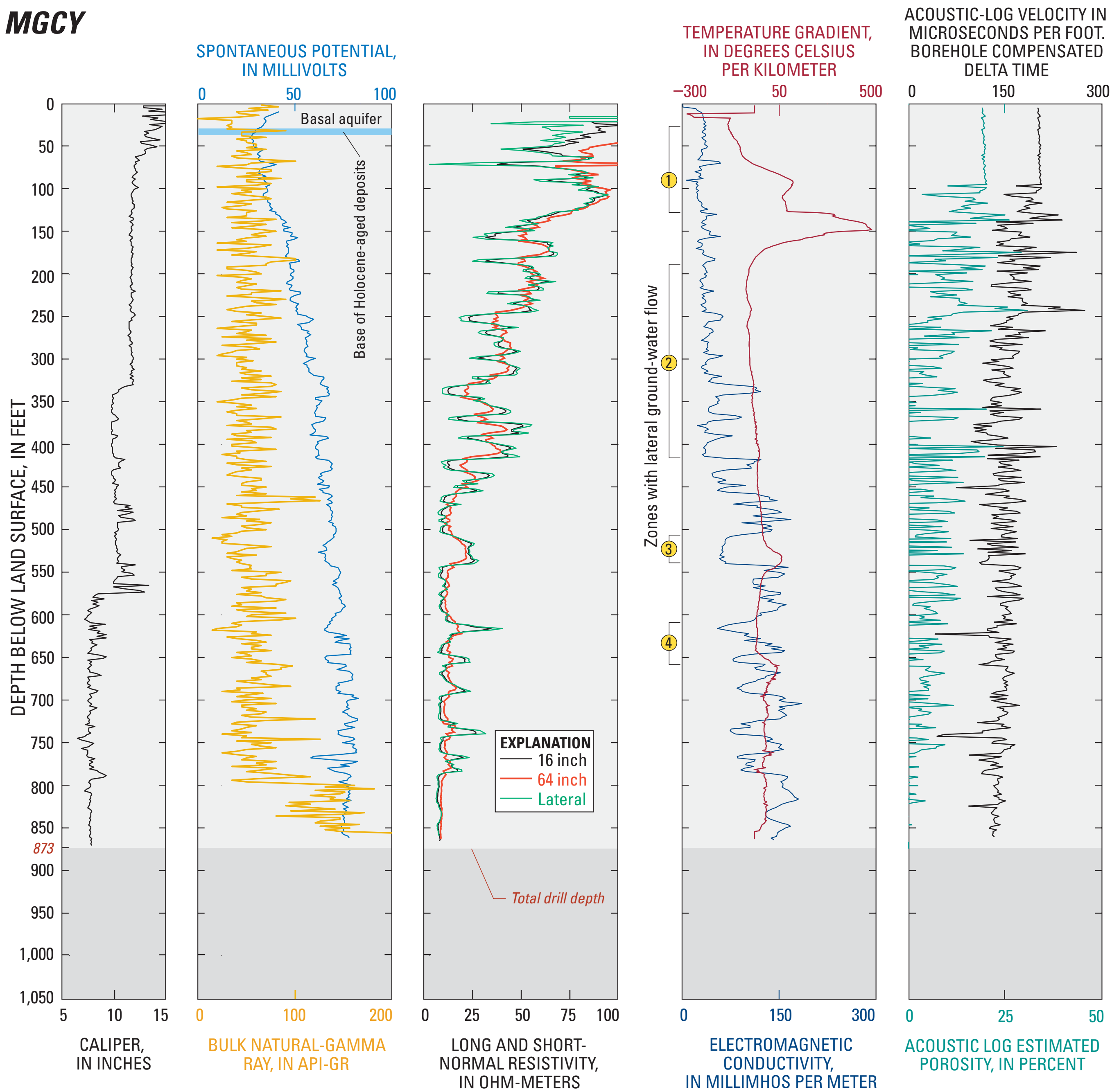
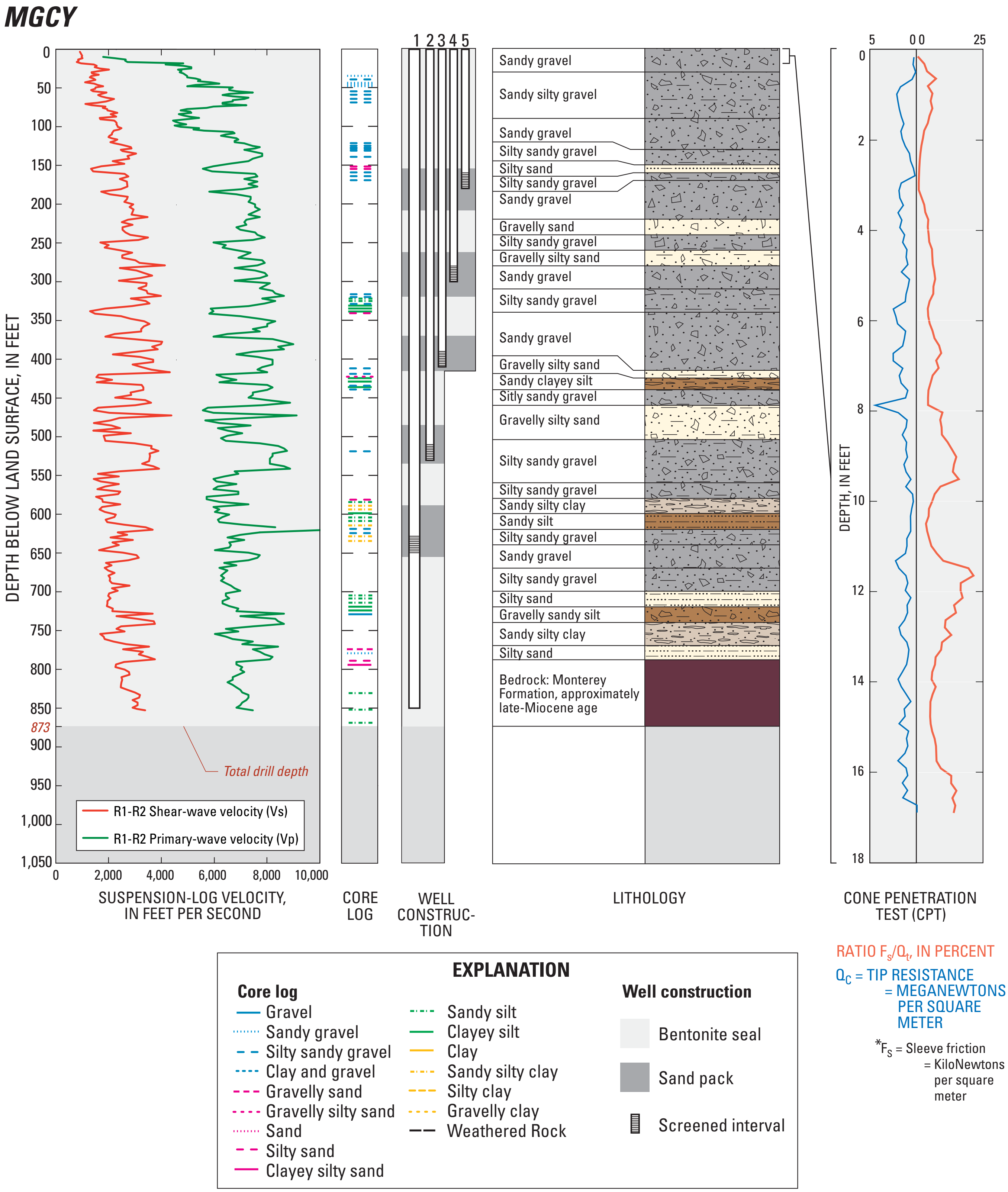


Figure 5. Geophysical logs, well-construction diagram, and generalized lithologic description for McGlincey (7S/1W-35L12–16) multiple-well site, Santa Clara County, California.



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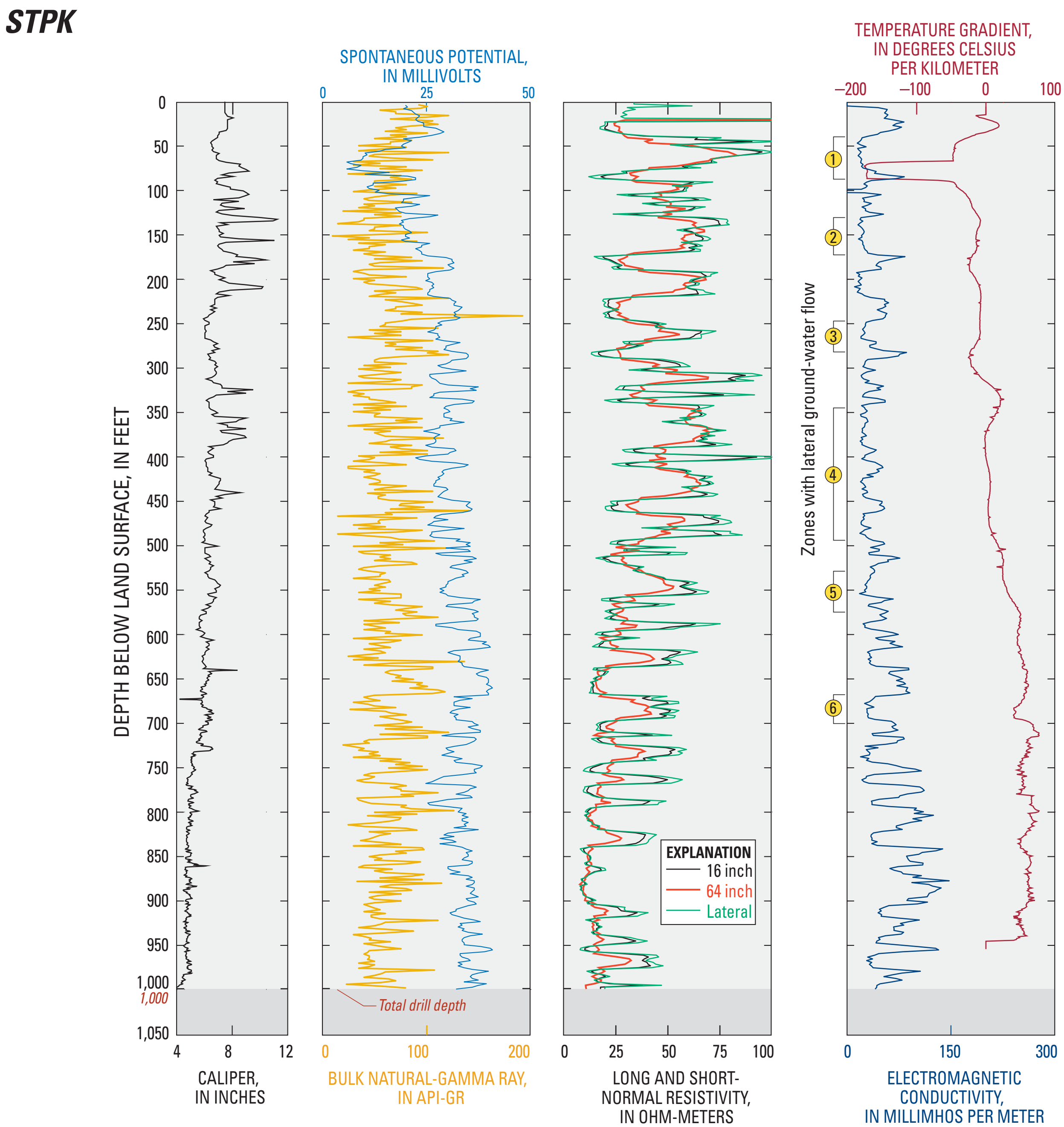
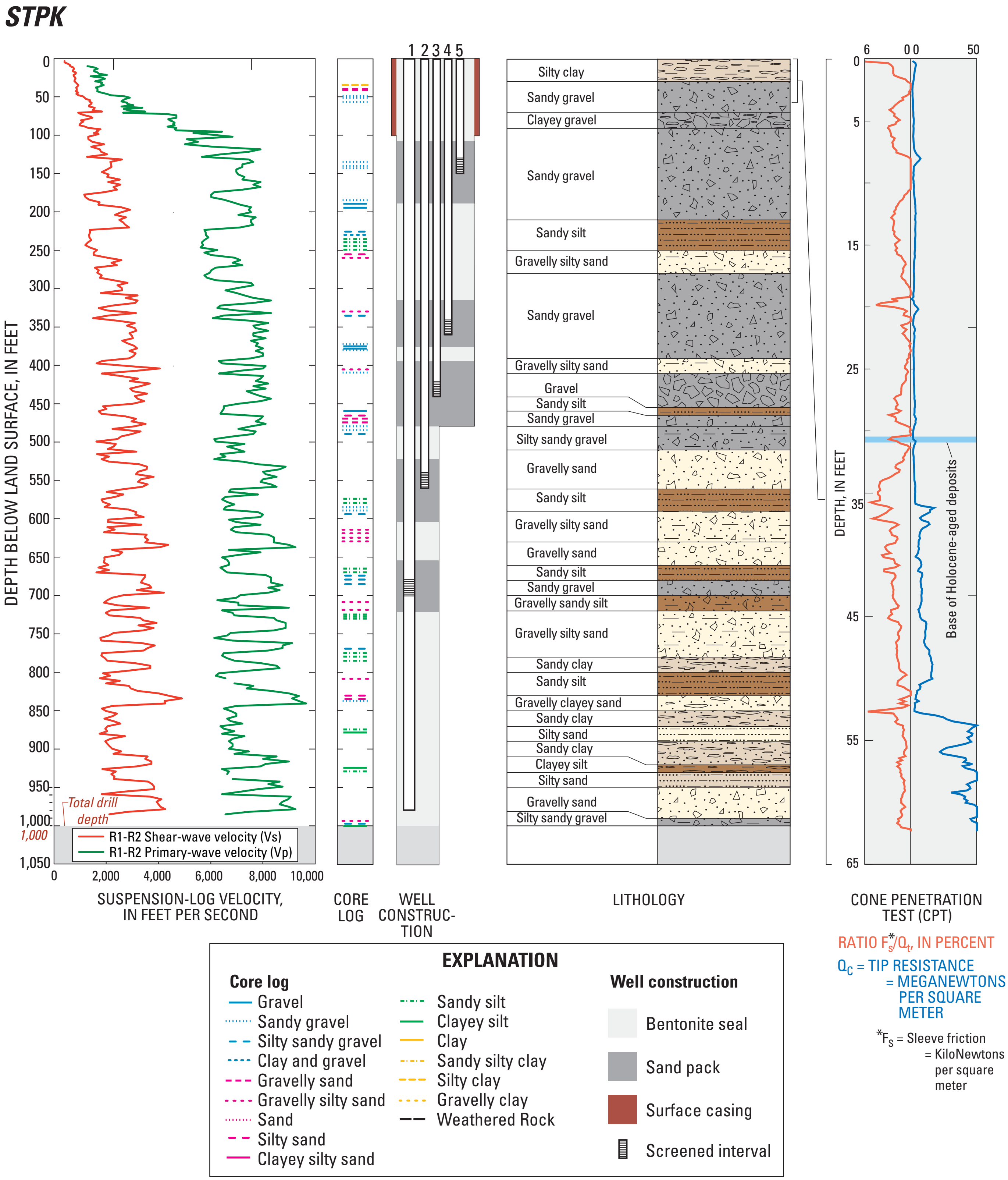


Figure 6. Geophysical logs, well-construction diagram, and generalized lithologic description for Santana Park (7S/1W-14P1–5) multiple-well site, Santa Clara County, California.



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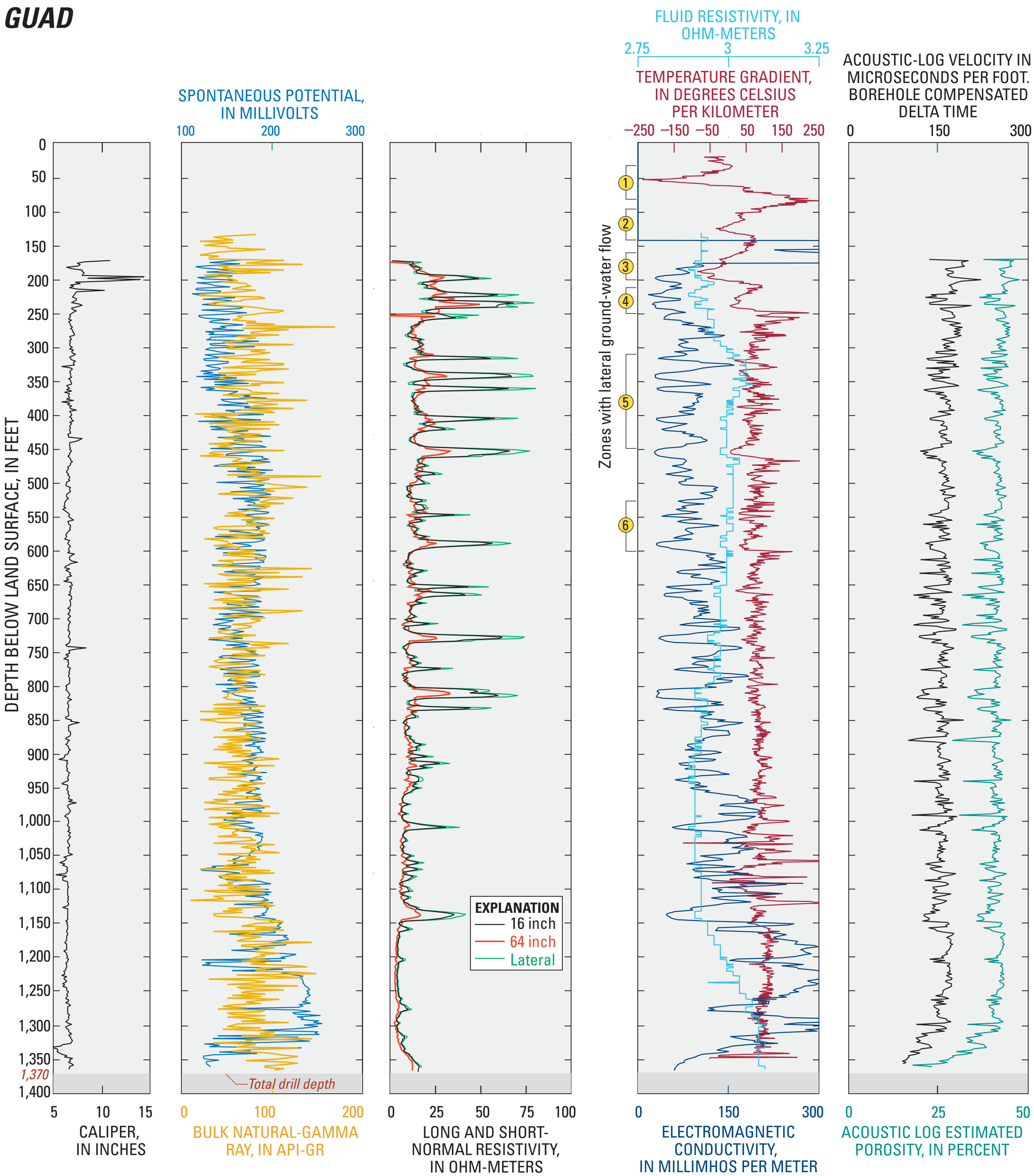
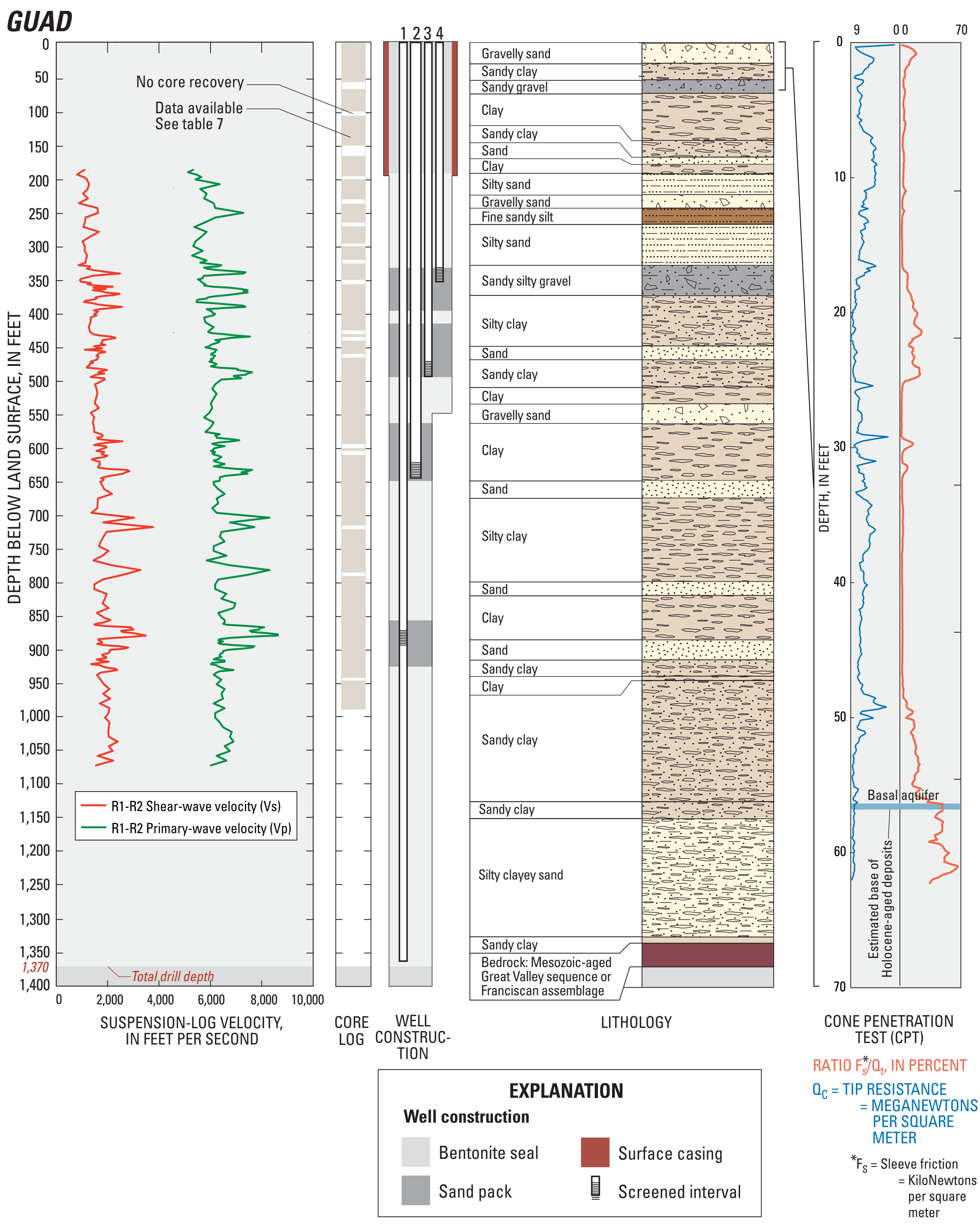


Figure 7. Geophysical logs, well-construction diagram, and generalized lithologic description for Guadalupe (6S/1W-26Q1–4) multiple-well site, Santa Clara County, California



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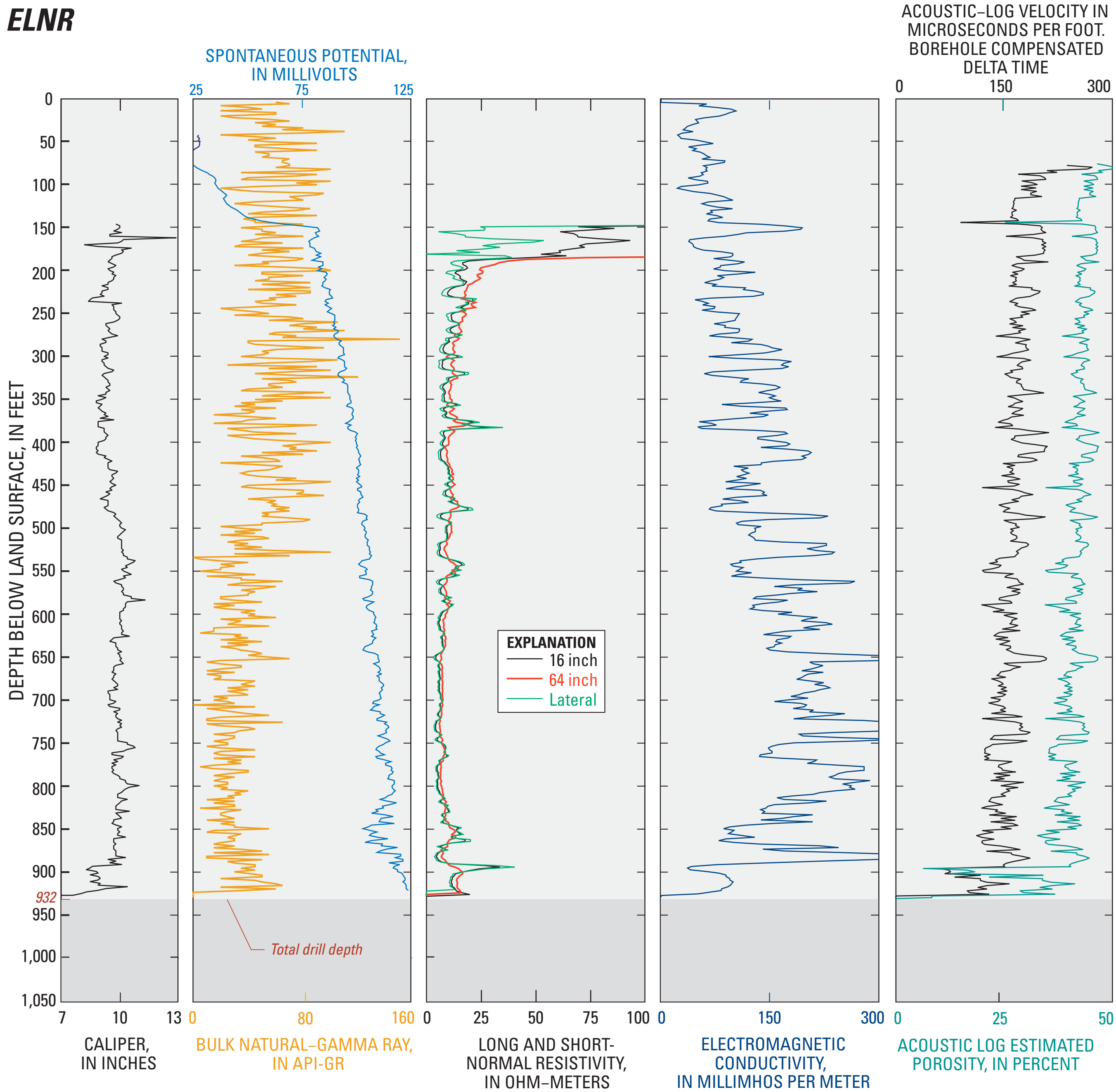

Figure 8. Geophysical logs, well-construction diagram, and generalized lithologic description for Eleanor Park (5S/3W-36P2–5) multiple-well site, Santa Clara County, California.

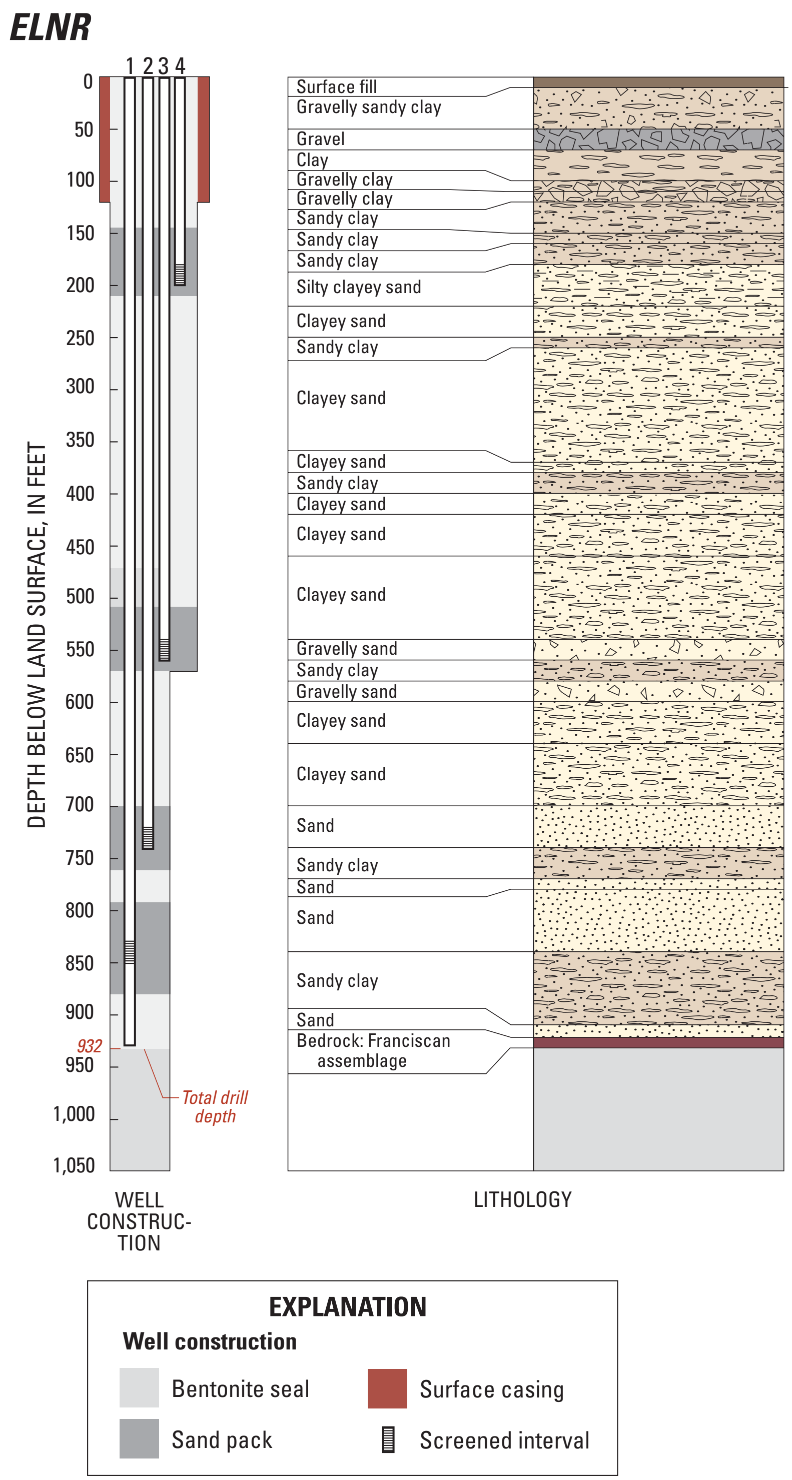

Figure 8.—Continued.

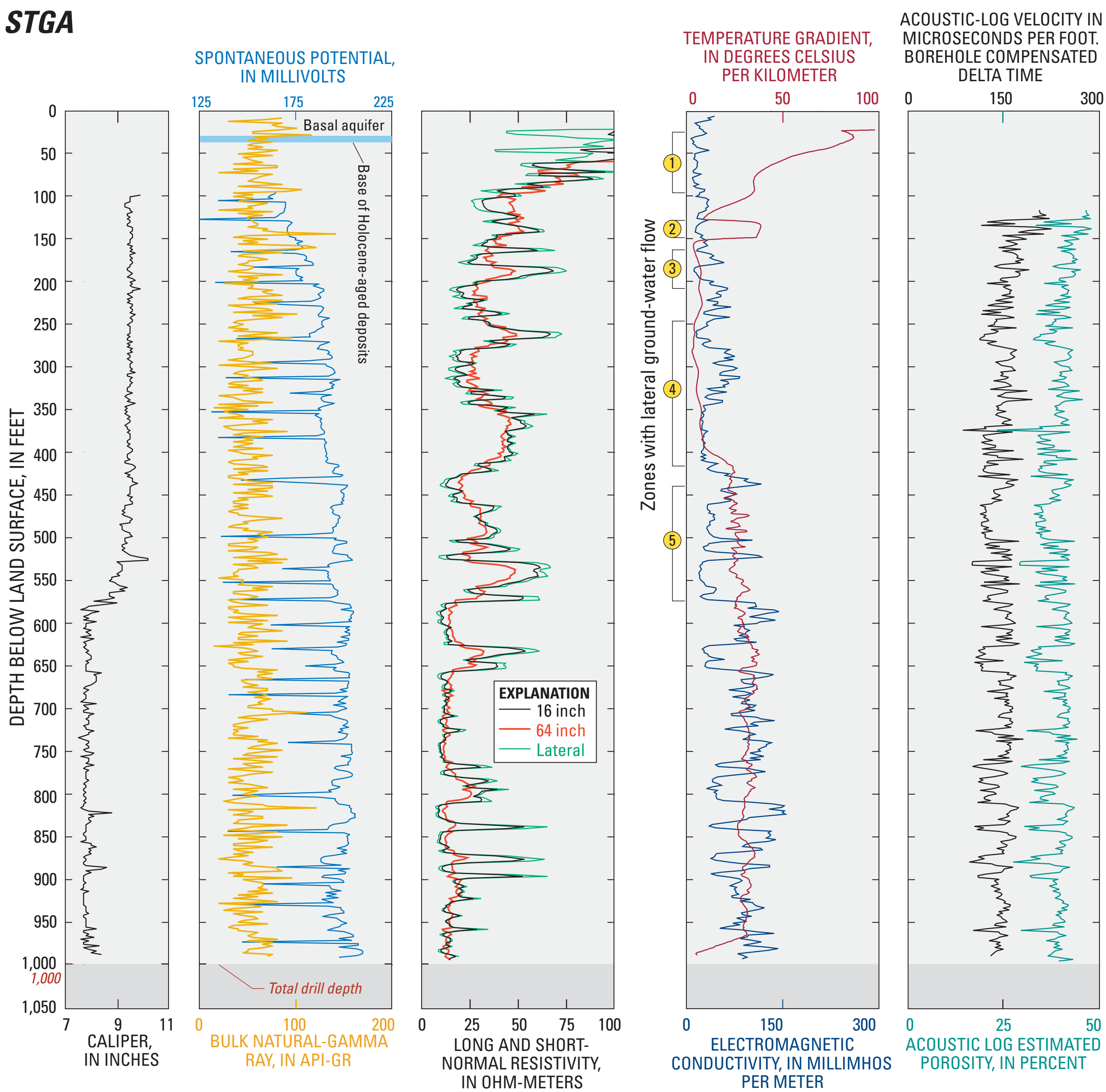

Figure 9. Geophysical logs, well-construction diagram, and generalized lithologic description for Saratoga (7S/1W-29C3–6) multiple-well site, Santa Clara County, California.

STGA

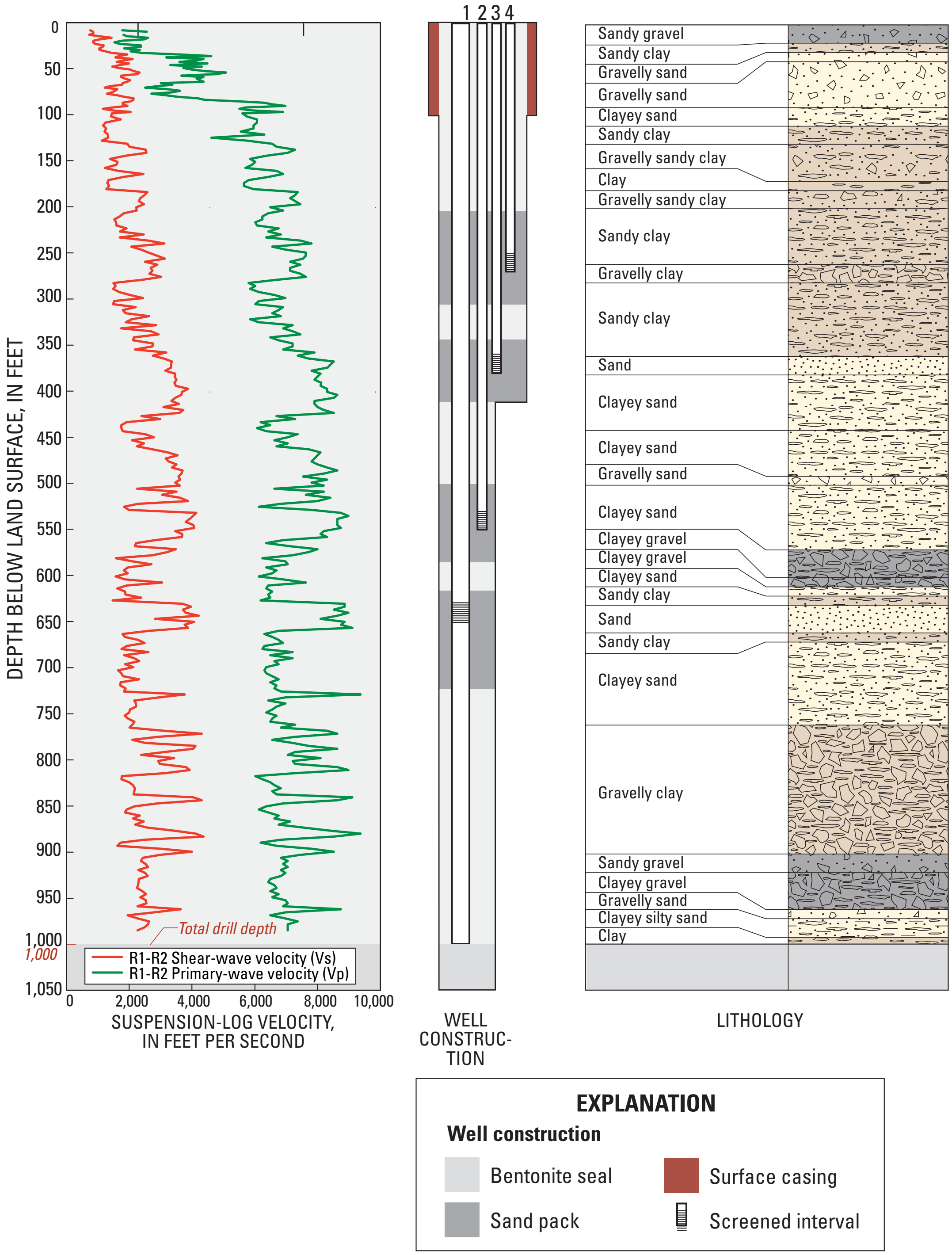

Figure 9.—Continued.

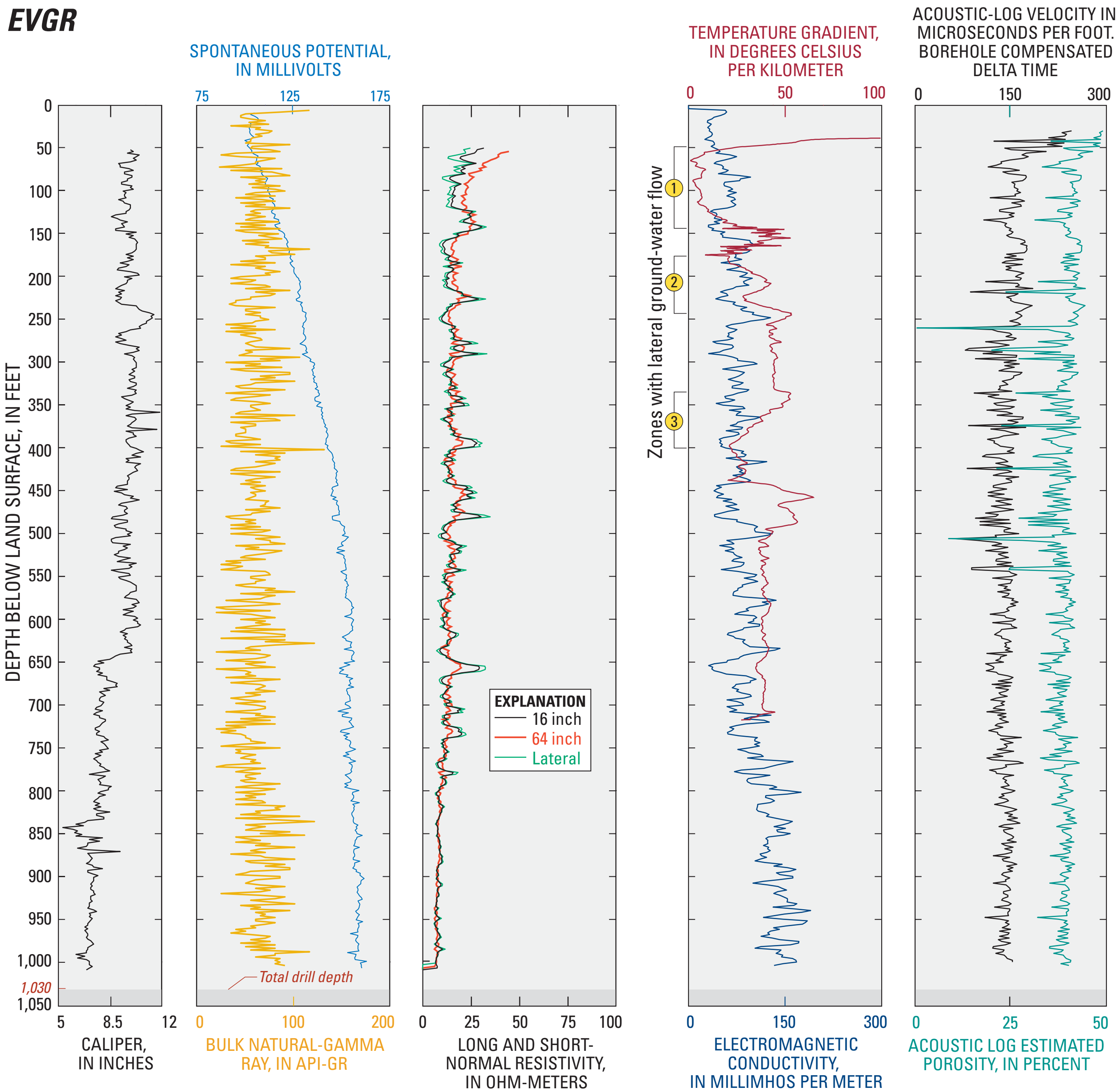

Figure 10. Geophysical logs, well-construction diagram, and generalized lithologic description for Evergreen (7S/2E-19C5–9) multiple-well site, Santa Clara County, California.

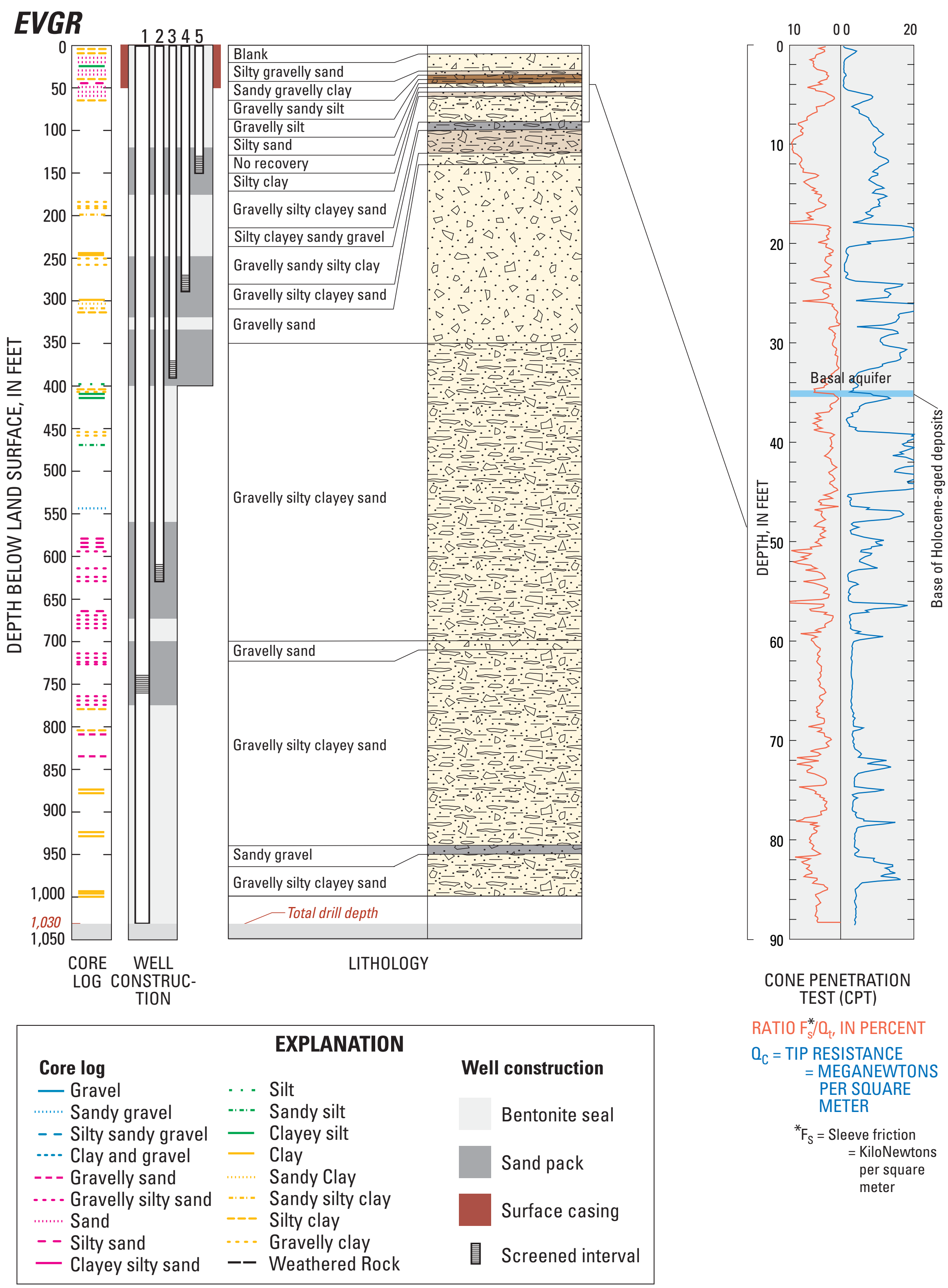

Figure 10.—Continued.

The boreholes at the multiple-well monitoring sites were drilled using direct mud rotary for continuous drilling, selected coring, and continuous coring. For coring, 94-mm wire-line core barrels and core pipe were used. After total depth was achieved, geophysical logging was completed in each borehole. These logs were used to aid in the interpretation of cuttings and cores, and to select completion intervals for the monitoring wells. These wells were constructed using 2- or 3-in.-diameter schedule-80 polyvinyl chloride (PVC) casing. Each well consisted of a 20-ft PVC slotted-screen interval (slot size is 1.5 in. × 0.020 in.) and a number 3 sand filter pack providing communication with the depth-specific aquifers selected for monitoring. The wells within the borehole are environmentally sealed from each other using a 30-percent-solids bentonite nonhardening grout mixture. A well-construction diagram is included for each site (figs. 4, 5, 6, 7, 8, 9, and 10).

Well development, using extensive airlifting and surging techniques with compressed air in each well, was done to break down the mudcake that had developed between the borehole and the surrounding formation during drilling and to remove any drilling mud from the aquifer opposite the well screens. Specific conductance, pH, temperature, apparent color, and turbidity, along with the discharge rate and total volume, were recorded during well development. Well development continued until no discernible drilling mud was present and field measurements had stabilized.

Geologic Data

Geologic data collected at each site will help to characterize and correlate stratigraphic units and boundaries associated with the regional stratigraphic units and aquifer systems. This information includes lithologic descriptions of the drill cuttings and a suite of geophysical logs. Cores were analyzed for geologic structures, composition, and physical properties.

Core samples collected from the bottom of well bores from three sites (WLLO, MGCY, and GUAD) and cuttings from a fourth site (ELNR) indicated the presence of bedrock underlying the water-bearing alluvium—WLLO at 802.4 ft bls, MGCY at 787.3 ft bls, ELNR at 922 ft bls, and GUAD at 1,335.5 ft bls. The bottom core from WLLO was composed entirely of serpentinite, a hydrothermally altered ultramafic rock associated with outcrops to the south on Oak Hill (fig. 2). The bottom core from MGCY was identified, through use of diatom taxa contained in the sample (Lisa White, San Francisco State University, unpub. data, 2004), as Monterey Formation of approximately late-Miocene age (not shown in fig. 2). A dark shale was penetrated at ELNR, which is probably associated with the Franciscan Assemblage of Mesozoic age. The bottom core at GUAD was identified as Great Valley sequence or Franciscan Assemblage. Although drilling was expected to penetrate bedrock at EVGR on the basis of data from nearby water-supply wells, the deeper sediments included clasts of the Great Valley sequence.

Lithologic Descriptions

Detailed lithologic logs were compiled from descriptions of drill cuttings collected at each borehole site and from observations recorded during drilling (tables 3–10, at end of report). Cuttings were collected at 10- to 20-ft intervals during drilling using a number 80 or finer mesh sieve. The lithology of drill cuttings was described under a binocular microscope for grain size, texture, sorting, rounding, color, and any other noticeable features, such as wood or shell fragments. Texture was determined on all cuttings using a method developed by Folk (1954), and particle-size descriptions follow the National Research Council (1947) classification. This classification allows for the correlation of general grain-size terms (such as “sand”) with size limits determined in millimeters or inches. Color, determined on moist samples, follows the alpha-numerical color designations in Munsell Soil Color Charts (Munsell Color, 1994).

Geophysical Logs

A cone penetrometer test (CPT) was performed at six sites to identify the base of Holocene sediments as a coring target. In this test a conical tip and trailing friction sleeve are pushed slowly down into the ground and tip resistance and sleeve friction are continuously measured. These parameters and their ratio can be used to estimate soil properties. The contrasting soil properties between the Holocene and the underlying Pleistocene sediments make the CPT ideal for shallow geologic mapping.

Wire-line geophysical logging, done either in the open borehole or in the completed well casing, provided additional information about the distribution of aquifers, fine-grained interbeds and confining units between aquifers, the relation of water quality and depth, and the nature of ground-water flow (figs. 3, 4, 5, 6, 7, 8, 9, and 10). These logs will also aid in stratigraphic analysis and seismic hazards in the Santa Clara Valley.

Some geophysical logs were collected in the open borehole after the site was drilled, and others were collected after well completion. The logs completed after drilling were caliper, bulk-natural gamma, spontaneous potential, 16-in. and 64-in. normal resistivity, lateral resistivity, electromagnetic conductivity (EM), acoustic velocity, suspension, and temperature logs. High-resolution temperature logs at six sites were used to estimate temperature gradient logs.

Caliper devices are used to measure the diameter of the borehole. The caliper log can be used to show the existence of consolidated layers, washed-out sand, or the presence of swelling clay. Caliper logs also are useful in the construction of multiple-well sites by providing accurate borehole-volume calculations for placement of sand filter packs and environmental sealing materials.

The bulk-natural gamma and spontaneous potential logs are used to help locate low-permeability silt and clay layers. Bulk-natural gamma logs measure the intensities of gamma-ray emissions resulting from the natural decay of potassium-40 and of the daughter products of uranium and thorium (Schlumberger, 1972). Clay, feldspar-rich sand and gravel, and granite are relatively more radioactive materials and generally emit higher intensity gamma rays. These radiogenic silt and clay layers represent potential confining units between aquifers. Spontaneous potential logs are helpful indicators of stratigraphic boundaries and changes in lithology. In cases where the CPT could not directly map the base of the Holocene, the spontaneous potential log helped in providing a geophysical interpretation of the base.

Resistivity tools measure the apparent resistivity of a volume of sample material under the direct application of an electrical current (Keys and MacCary, 1985). These logs can be used to determine the formation and fluid resistivity of subsurface units and to estimate formation porosity. In the alluvial setting of the Santa Clara Valley, low resistivity generally indicates fine-grained deposits such as silt, clay, and shale, whereas high resistivity indicates coarser material such as sand or gravel. The 16-in. normal resistivity records the apparent resistivity of material adjacent to the borehole that was probably invaded with drilling fluid, and the 64-in. normal resistivity records the apparent resistivity beyond the invaded zone that is saturated with formation water. The combinations of both logs are useful indicators of potential poor water quality.

Electromagnetic-conductivity logs yield detailed information on the vertical electrical conductivity of a formation and of pore water (McNeill, 1986). Because the electromagnetic-induction tool responds to changes in dissolved-solids concentration (total dissolved solids) of ground water, it is possible to repeatedly track and map electrical anomalies associated with changes in dissolved-solids concentration of ground water over time (Williams and others, 1993).

Two types of acoustic-velocity logs—acoustic (sonic) logs and suspension logs—were measured in the uncased borehole. Sonic logs measure the time it takes for a pulsed compressional sound wave to travel from a downhole source to downhole receivers. The sonic tool used has two receivers, and porosity is estimated from the difference in arrival time of the near and far receivers. In unconsolidated material, sonic logs are principally used to measure porosity of the aquifer materials. Variations in porosity, and therefore transit time, can help to identify contacts between lithologic units that were penetrated by the borehole. Formation porosity is calculated from empirical data using the Raymer-Hunt Formula (Century Geophysical Corporation, 2004). Suspension logs also were collected at selected drill holes using the OYO P-S logging system, which measures both shear waves (S-waves) and faster compressional waves (P-waves) in open boreholes (GEOVISION, 2003). Suspension velocity logs provide direct measurements of seismic velocity that are useful in basinwide stratigraphic correlation, the generation of synthetic seismograms, and seismic ground motion studies.

High-resolution borehole temperature logs were collected several weeks after well completion and local thermal gradients were stabilized. These data were used to estimate temperature-gradient profiles that can be useful in identifying zones of ground-water flow by deviations from the natural thermal gradient, as well as in the study of regional heat flow.

Coyote Creek Outdoor Classroom (CCOC) Site

The CCOC site is located in the south-central part of the basin in the confined aquifer zone and adjacent to Coyote Creek (fig 1). The CPT log at the CCOC site reached a total depth of 125 ft (fig. 3). The base of the Holocene sediments is marked at a depth of 75 ft by an increase in resistance to penetration. Analysis of borehole geophysical logs indicates more gravel and coarse-grained units than anticipated on the basis of nearby drillers logs of other ground-water monitoring wells and geophysical logs from a nearby extensometer site (Poland and Ireland, 1988) (fig. 1). Approximately 5 to 6 coarse-grained units ranging in thickness from 30 to 80 ft were identified above 850 ft bls. Four ground-water monitoring wells were screened and open to selected intervals between 360 and 850 ft bls and a fifth was installed just below the Holocene-Pleistocene boundary (75 ft bls) in a second borehole (fig. 3 and table 2, at the end of the report). The temperature-gradient log indicates a near-linear conductive geothermal gradient from the bottom up to a depth of 670 ft, above which the gradient is disturbed (fig. 3 and table 2, at end of report). As many as six zones are delineated by disturbances in the temperature-gradient log from CCOC (fig. 3). These disturbances likely are due to lateral flow of water in the gravel layers, which are the main sources for nearby water-supply wells (fig. 1).

Willow (WLLO) Site

The WLLO site is located in the south-central part of the basin in the edge of the confined aquifer zone and adjacent to Los Gatos Creek (fig 1). The CPT log at the WLLO site reached a total depth of 78 ft (fig. 4). The base of the Holocene was estimated at 47 ft bls. Analysis of borehole geophysical logs indicates multiple layers of coarse-grained material separated by fine-grained material. Roughly seven to eight coarse-grained units ranging in thickness from 30 to 80 ft were identified above 800 ft bls. Five monitoring wells were screened and open to selected intervals between 200 and 800 ft and a sixth was installed below the Holocene boundary in a second borehole (fig 4 and table 2, at end of report). The temperature-gradient log measured from WLLO indicates near-linear conductive geothermal gradient from the bottom up to a depth of 775 ft, above which the gradient is disturbed by as many as eight zones of lateral ground-water flow in the coarse-grained layers (fig. 4).

McGlincey (MGCY) Site

The MGCY site is located in the southwestern part of the basin outside the confined aquifer zone, adjacent to SCVWD artificial recharge ponds and Los Gatos Creek (fig 1). The base of the Holocene probably was not reached by the short 17-ft CPT log, but limited core information indicates that it is no deeper than 34 ft. The boundary also has been estimated from the interpretation of relative changes in the CPT, normal resistivity, and spontaneous-potential geophysical logs to be at a depth of about 33 ft. Analysis of the borehole-geophysical logs indicate that most of the coarse-grained material in the well is above 500 ft, with only scattered, relatively thin deeper layers of coarse-grained material below. About three to four coarse-grained units ranging in thickness from 40 to 220 ft were identified above 650 ft bls. Five ground-water monitoring wells were screened and open to selected intervals between 155 and 655 ft bls (fig. 5 and table 2, at end of report). The temperature-gradient log calculated from MGCY indicates a near-linear conductive geothermal gradient from the bottom up to a depth of 690 ft, above which the gradient is disturbed by at many as four zones of lateral ground-water flow in the coarse-grained layers (fig. 5).

Santana Park (STPK) Site

The STPK site is located in the south-central part of the basin within the confined aquifer zone (fig 1). The CPT log at the STPK site reached a total depth of 62 ft (fig. 6), and penetrates the base of the Holocene at a depth of 31.4 ft. Composite analyses of borehole geophysical logs indicate a relatively large amount of coarse-grained material; the results are similar to those from the CCOC multiple-well site (fig. 3). About five to six coarse-grained units ranging in thickness from 30 to 150 ft were identified above 725 ft bls. Five ground-water monitoring wells were screened and open to selected intervals between 107 and 720 ft bls (fig. 6 and table 2, at end of report). The temperature-gradient log calculated from STPK-1 indicates a near-linear conductive geothermal gradient from the bottom up to a depth of 710 ft, above which the gradient is disturbed by as many as six zones of lateral ground-water flow in the coarse-grained units (fig. 6).

Guadalupe (GUAD) Site

The GUAD site is located in the central part of the basin in the confined aquifer zone and adjacent to Guadalupe Creek (fig 1). The CPT log at the GUAD reached a total depth of 61 ft without a marked indication of the base of the Holocene, but the base is estimated to be between 52 and 69 ft bls on the basis of core information and is shown at about 57 ft (fig. 7). Analysis of borehole geophysical logs indicates relatively more fine-grained units in comparison with the CCOC and STPK sites. Coarse-grained units are generally thinner, ranging from 25 to 50 ft in thickness, and were identified mostly above 860 ft bls. Four ground-water monitoring wells were screened and open to selected intervals between 310 and 860 ft bls (fig. 7 and table 2, at end of report). The temperature-gradient log measured from GUAD indicates a near-linear conductive geothermal gradient from the bottom up to a depth of 660 ft, with some minor disturbances between 1,000 and 1,125 ft. Above 660 ft, there are as many as six zones in which the gradient is disturbed by lateral ground-water flow in the coarse-grained units, with four zones above 250 ft (fig. 7).

Eleanor Park (ELNR) Site

The ELNR site is located in the northwestern part of the basin in the confined aquifer zone near San Francisco Bay (fig 1). A CPT log was not collected at the ELNR site. The base of the Holocene has been estimated from interpretation of relative changes in the normal-resistivity and gamma geophysical logs to be at a depth of about 50 ft. Analysis of geophysical logs indicates four to five poorly defined coarse-grained units ranging in thickness from 10 to 80 ft located above 880 ft bls (fig. 8). The gamma log at ELNR indicates that most of the fine-grained material is located above 500 ft bls. Four ground-water monitoring wells were screened and open to selected intervals between 145 and 880 ft bls (fig. 8 and table 2, at end of report). A temperature-gradient log was not collected at the ELNR site owing to flowing artesian conditions which prevented local thermal equilibrium from being established.

Saratoga (STGA) Site

The STGA site is located in the southwestern part of the basin outside the confined aquifer zone and adjacent to Saratoga Creek (fig 1). A CPT log was not collected at the STGA site. The base of the Holocene has been estimated from the interpretation of relative changes in the normal-resistivity and spontaneous- potential geophysical logs to be around 32.5 ft bls. Composite analysis of borehole geophysical logs indicates five or six coarse-grained units ranging in thickness from 20 to 100 ft located above 750 ft bls (fig. 9). Four ground-water monitoring wells were screened and open to selected intervals between 205 and 723 ft bls (fig. 9 and table 2 at end of report). The temperature-gradient log indicates a near-linear conductive geothermal gradient from the bottom up to a depth of about 600 ft, above which the gradient is disturbed by as many as five zones of lateral ground-water flow through the coarse-grained units (fig. 9).

Evergreen (EVGR) Site

The EVGR site is located in the southeastern part of the basin outside the confined aquifer zone and adjacent to Thompson Creek (fig 1). The CPT log at EVGR reached a total depth of 89 ft (fig. 10). Although the base of the Holocene is not clearly defined in the CPT log, it was estimated from the CPT and normal- resistivity and spontaneous-potential geophysical logs to be about 35 ft bls (fig. 10). Analysis of borehole geophysical logs indicates relatively more fine-grained units in comparison with the CCOC and STPK sites. Several coarse-grained units ranging in thickness from 10 to 25 ft were identified between 100 and 775 ft bls. Five ground-water monitoring wells were screened and open to selected intervals between 120 and 774 ft bls (fig 10 and table 2 at end of report). The temperature-gradient logs could not be completed below 725 ft bls because of relatively dense drilling fluid inside the casing. From 725 ft bls to a depth of 510 ft bls, the temperature-gradient log indicates a near-linear conductive geothermal gradient, above which it is disturbed by at many as three zones of lateral ground-water flow through the coarse-grained units (fig. 10).

Core Measurements

Core samples were collected at selected depths at CCOC, WLLO, MGCY, STPK, and EVGR, and continuously from land surface to 1,000 ft bls at GUAD. No core samples were collected at ELNR or STGA. All together, 425 cores, totaling over 1,150 ft in collective length, were collected in the Santa Clara Valley as part of the cooperative studies between 1999 and 2003.

The cores were collected with a wire-line coring system that pushes a core barrel ahead of the drill bit to cut relatively undisturbed 2.5-in.-diameter cylinders of sediment. A plastic liner is placed inside a steel core barrel to receive the cylinder of sediment during drilling. The wire-line system allows the core to be recovered without removing the drilling pipe. Each coring “push” retrieves a cylinder of sediment as long as 5 ft in length. The cores were sealed and stored until the core measurements and sampling were completed. Coring was performed selectively during the drilling with an attempt to retrieve sediments in coarse- and fine-grained layers for hydrologic, geochemical, and geomechanical sampling. To sample potential geologic unconformities, cores were taken in an attempt to capture sediments that may be spanning potential transitions of sedimentary layers and other geochronological indicators within the sediments, and to obtain sediments that would be representative of the water-bearing zones.

Core samples were systematically analyzed for bulk physical properties with a multi-sensor data logger (MSL). After MSL logging was completed, whole-core subsamples were taken for analysis of hydraulic and geomechanical properties. After subsampling, whole cores were then split in half and photographed with a high-resolution digital camera (not shown in this report), and the composition and structure of the sediment were described. Core sub-samples were selectively taken for further analysis of physical properties, magnetic orientation, and pore-water chemistry.

Physical Data

Multi-sensor logging of the intact cores included primary-wave (p-wave) velocities derived from an acoustic transducer source, bulk density derived from an active gamma-radiation source, magnetic susceptibility derived from an induced magnetic field, and calculated acoustic impedance derived from the multiplication of the primary-wave velocity and the density. The logging frequency was 0.4 in. (1 cm) along the length of each core.

Measured p-wave velocity from core samples ranged from 4,700 to 6,100 ft/s with an average of 5,515 ft/s (fig. 11). Approximately 1 percent of recorded velocity data for all cores were at a low velocity mode of 4,700 to 4,800 ft/s (fig. 11) that may be related to voids or open space in the core filled with drilling fluid. Cores with such anomalously low velocities were found from CCOC, WLLO, MGCY, and GUAD. Average core values given in table 11 have been annotated with an “(L)” if the core contained a low-velocity data value between 4,700 and 4,800 ft/s.

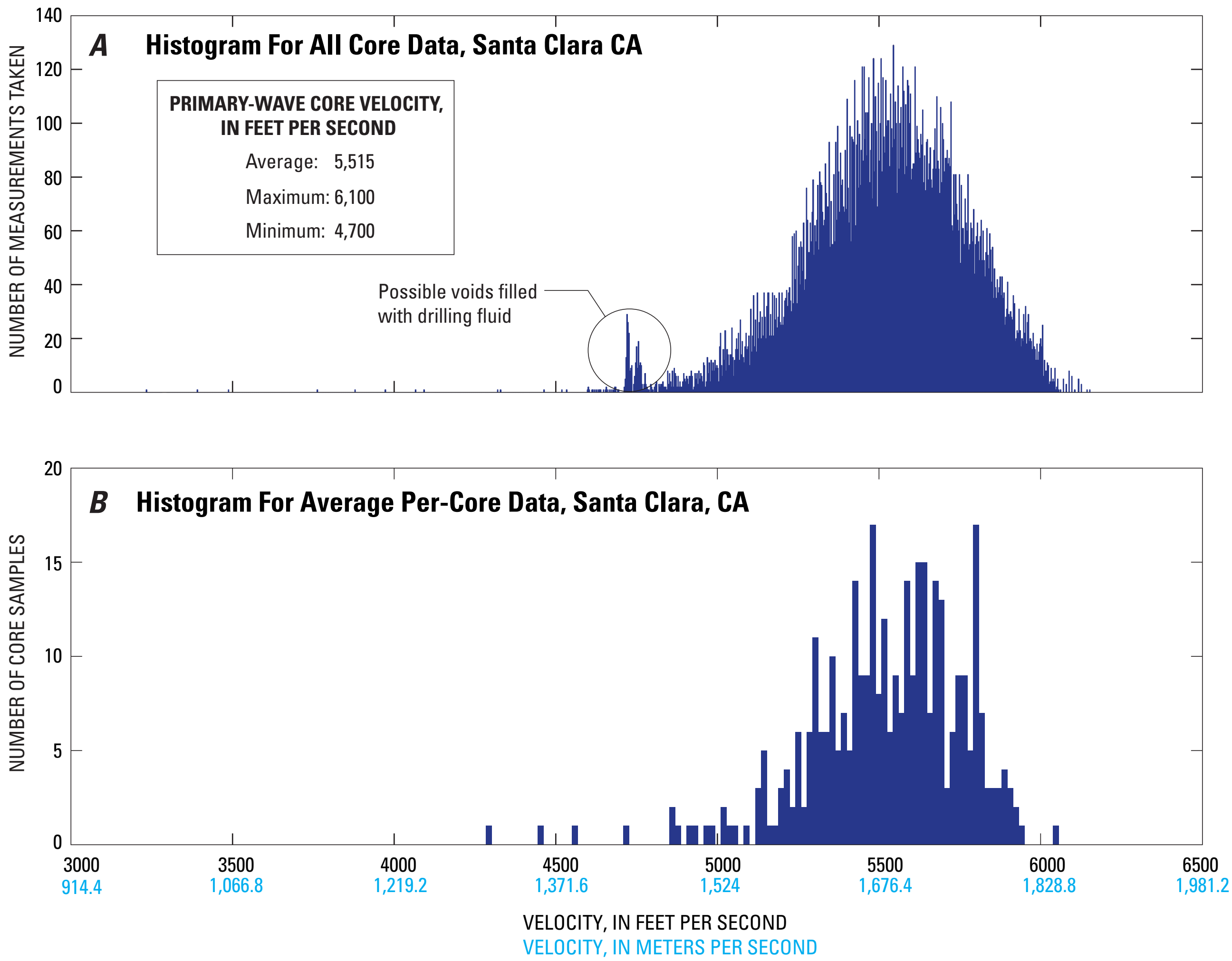

Figure 11. Primary-wave velocity measurements for all cores and average per core collected from multiple-well monitoring sites, Santa Clara County, California.

Measured density from the core samples ranged from 0.68 to 2.89 g/cm^3 and is bimodal in its distribution for average values per core (modal picks at about 2.19 and 2.32 g/cm^3), with an overall average of 2.16 g/cm^3 for all core data (fig. 12). Less then 1 percent of all measured densities were below 1.20 g/cm^3 and are annotated with an "(L)" in table 11. About 22 percent of all measured densities were above 2.25 g/cm^3 (fig. 12*A*) and are annotated with an "(H)" in table 11. A total of 111 (24 percent) of the 425 cores had an average per core value of 2.27 g/cm^3 or greater (fig. 12*B*) and most were collected from the MGCY and EVGR sites outside the confined aquifer zone of the basin (table 11, fig. 1).

The magnetic susceptibility is a unitless measure that is controlled by the character and abundance of magnetic mineral grains in the sediment when placed in an inducing magnetic field. Magnetic susceptibilities for sedimentary rocks have a maximum value of about 25,000 and have an average range between 0 and 360 (Reynolds, 1997). While the measured magnetic susceptibility from all core samples ranged from 0 to 793 with an average of 22, the average per core magnetic susceptibilities ranged from 0 to 246 with most cores ranging between 9 and 40 (table 11, fig. 13).

Observational Data

Cores were split in half along their long axes. One of the halves was prepared and photographed with a high resolution digital camera, sealed in plastic, and stored in refrigerated archive. The other half was described for lithologic, stratigraphic, and structural features, and signs of mechanical disturbance from the core-collection process. These descriptions included color, hydrocarbon inclusions, lithology, sorting, roundness, accessories (wood, shells, and so forth), bioturbation, Unified Soil Classification System textures, and compressive strength estimated with a pocket penetrometer.

Core Subsample Data

Consolidation tests were performed on core subsamples taken from selected fine-grained cores (table 12). The properties estimated from these consolidation tests include the coefficients of inelastic and elastic consolidation, maximum past stress, and initial void ratio. From these properties, values of inelastic and elastic specific storage can be estimated for the simulation of land subsidence. One-dimensional consolidation tests were completed on 75 whole-core subsamples from the CCOC, WLLO, MGCY, STPK, GUAD, and EVGR sites. Consolidation tests were interpreted on the basis of the methods presented by Schmertmann (1953). The geometric means of inelastic and elastic specific storages were estimated to be 1.5×10^{-4} ft^{-1} and 1.2×10^{-5} ft^{-1}, respectively. These estimates are within the range of values from the extensometer sites (fig 1). Reported inelastic specific storage values for the Santa Clara Valley range from 1.5×10^{-4} ft^{-1} to 1.3×10^{-3} ft^{-1} (Poland and Ireland, 1988). Elastic specific storage values estimated from extensometer data range from 1.5×10^{-6} ft^{-1} to $1.5\text{x}10^{-5}$ ft^{-1}.

Hydraulic tests were performed on whole-core subsamples from selected fine- to medium-grained cores from wells at the CCOC and WLLO sites (table 13). Core samples were analyzed by the USGS laboratory using the American Society for Testing and Materials procedure, ASTM-D-5048, and USGS laboratory procedure, YMP-USGS-HP-229. Properties estimated from these tests include vertical hydraulic conductivity, particle density, bulk density, porosity, water content, percent saturation, effective porosity, and effective saturation. The vertical hydraulic conductivity estimates from selected core samples ranged from 8×10^{-4} to 3.2×10^{-1} ft/d (table 13). The estimated total porosities from selected core samples ranged from 0.23 to 0.43 and the effective porosity ranged from 0.22 to 0.40 (table 13). These porosity values are relatively smaller than porosities calculated from sonic logs for comparable depths, which ranged from 0.35 to 0.45 (figs. 3 and 4). The relative changes in porosity between those estimated from the hydraulic tests and those calculated from the sonic logs agreed within 2 percent. The difference between the porosity calculated from the sonic log and the porosity estimated from the whole-core subsamples may be a result of the assumed travel time associated with the matrix compressibility in the sonic log, and may be accounted for by a linear transformation of the sonic-log estimates of porosity.

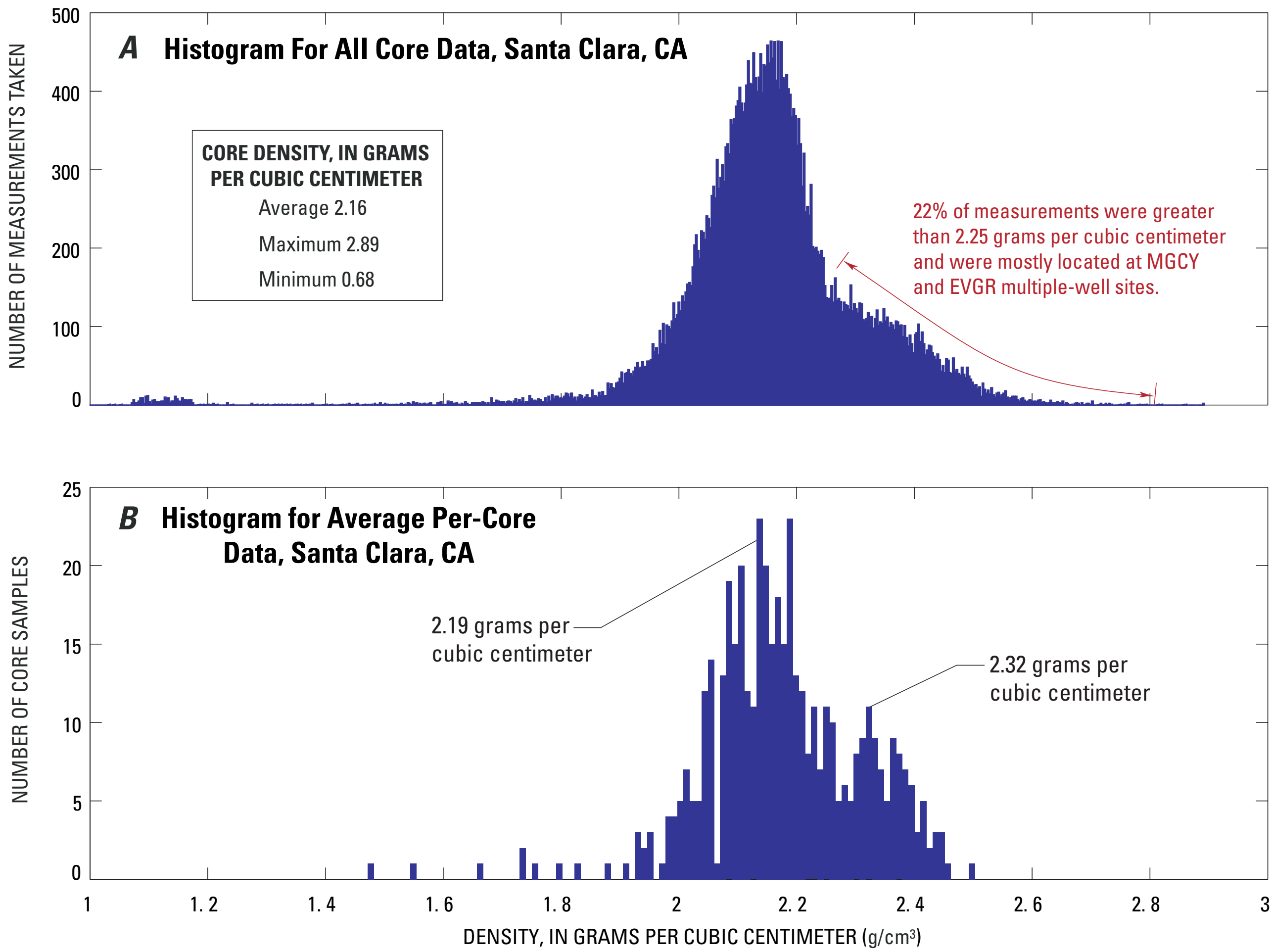

Figure 12. Density measurements for all cores and average per core collected from multiple-well monitoring sites, Santa Clara County, California.

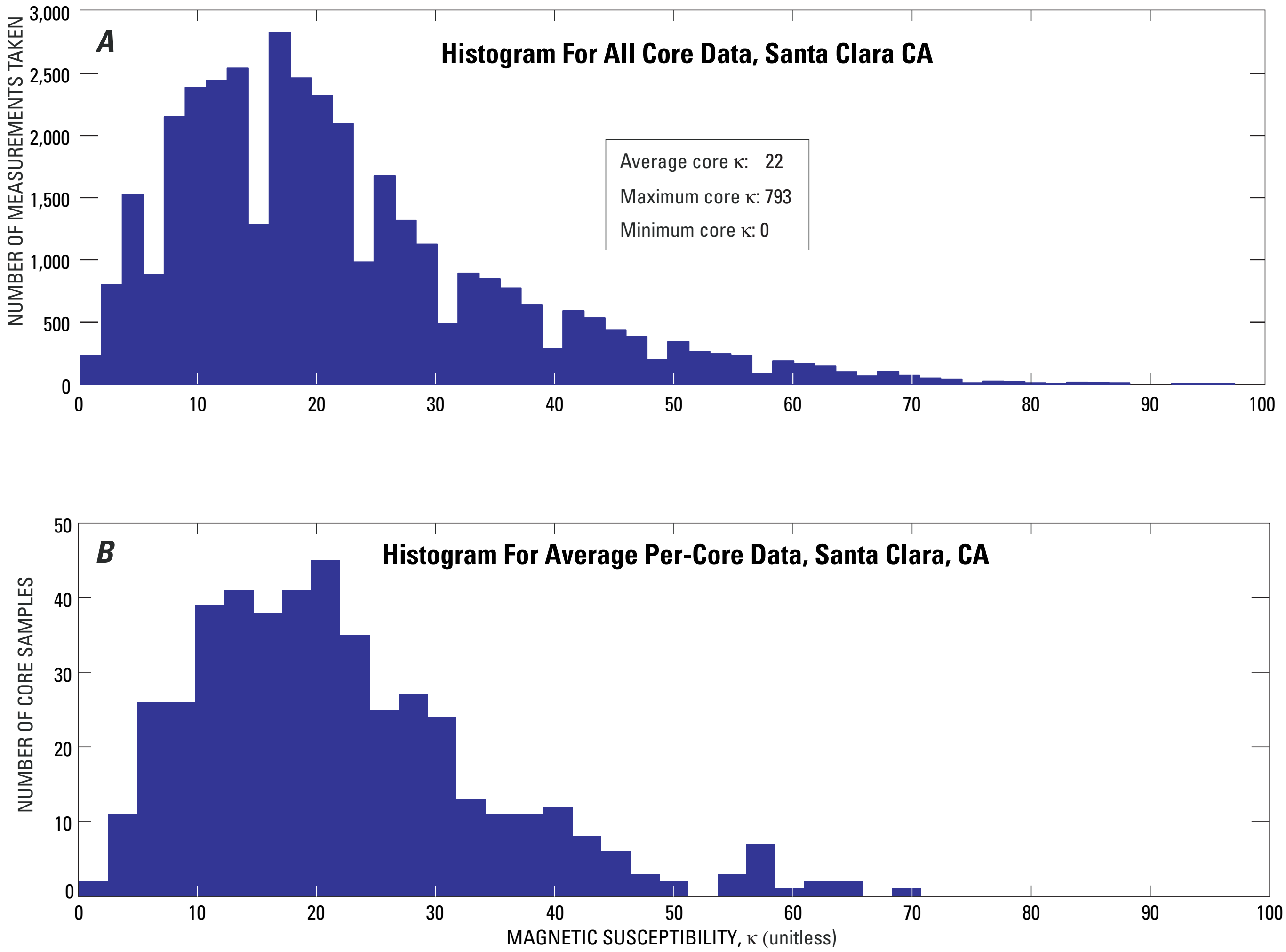

Figure 13. Magnetic susceptibility measurements for all cores and average per core collected from multiple-well monitoring sites, Santa Clara County, California.

Water-Chemistry Data

The water-chemistry data obtained from sampling and analysis of the multiple-well monitoring sites and selected water-supply wells are summarized in tables 14 and 16, respectively. Additional water-chemistry data were obtained from the selective analyses of the pore fluids extracted from selected cores from multiple-well monitoring sites (table 15). Additional water-chemistry data from selected water-supply wells for depth-dependent samples also are included in table 16. Samples for analysis of boron and strontium isotopes (tables 14 and 16) were collected along with the other water-chemistry samples for the multiple-well monitoring sites and water-supply wells and were analyzed by Tom Bullen and John Fitzpatrick (Research Geochemists, U.S. Geological Survey, unpub. data, 2001). Water-chemistry data from other water-supply wells were obtained from joint sampling and analysis (table 16) performed by the USGS, and Lawrence Livermore National Laboratories (Barbara Dawson, Hydrologist, U.S. Geological Survey, unpub. data, 2004). Water-chemistry samples were collected from the ELNR site using the USGS sampling protocol and were analyzed by a SCVWD-certified laboratory (Cal-EPA lab certification no. CA00193). In this study, depth-specific samples refer to samples collected from monitoring wells with small screened intervals. Depth-dependent samples refer to samples collected from water-supply wells at selected depths under full pumping conditions (Izbicki and others, 1999), while composite samples refer to samples collected from water-supply wells at the point of surface discharge.

The water-chemistry samples from the multiple-well monitoring sites (table 14) and water-supply wells (table 16, at the end of the report) were collected under the USGS protocol established for water-chemistry sampling (Wilde and others, 1998). Depth-specific water-chemistry samples (table 16) were obtained from the upper and lower aquifer system monitoring wells with positive-displacement pumps after well development. Water-chemistry samples from water-supply wells were collected from composite surface discharge from the well or from depth-dependent sampling down the wellbore at selected depths under full pumping conditions (Izbicki and others, 1999). Selected cores of the finer-grained deposits were also sampled for pore fluids by mechanically squeezing subsamples of these cores.

The water-chemistry data are summarized by groups of constituents that can be used for geochemical and hydrologic interpretations. These groups include selected chemical attributes such as dissolved-solids concentration, specific conductance, pH, temperature, and dissolved oxygen content; major and minor anions; other selected trace elements; dissolved nitrogen and carbon; stable isotopes of deuterium, oxygen, boron, and strontium; tritium isotope content; and the carbon isotopes.

Selected Chemical Attributes

Chemical attributes such as dissolved-solids concentration (total dissolved solids), specific conductance, pH, temperature, and dissolved oxygen were selectively measured on samples from multiple-well monitoring sites (table 14), water-supply wells (table 16), and pore waters (table 15). Total dissolved solids ranged from 249 to 2,700 mg/L (table 14) in samples from monitoring wells and from 281 to 970 mg/L (table 16) in samples from water-supply wells. The laboratory specific conductance ranged from 393 to 4,540 μS/cm (table 14) in samples from monitoring wells and from 456 to 1,020 μS/cm (table 14) in samples from water-supply wells. The highest dissolved-solids and specific conductance values were from the ground-water sample from the second-deepest monitoring well at the ELNR site (table 14). The lowest dissolved-solids and specific-conductance values were in water from the second-deepest well at the GUAD monitoring-well site (table 14).

The pH values generally are basic values, ranging from 7.2 to 8.1 for the monitoring-well samples and from 6.9 to 8.0 for the water-supply-well samples. The pore-water samples from cores showed the widest range in pH values, 6.6 to 9.5. The temperature of the water samples ranged from 19 to 26 degrees Celsius (^{o}C) for the monitoring wells and from 17 to 26^{o}C for the water-supply wells. The dissolved-oxygen concentration measured in ground-water samples ranged from 0.1 to 7.3 mg/L for the monitoring wells and ranged from 0.4 to 3.5 mg/L for the water-supply wells.

Major, Minor, and Trace Elements

The analysis of major, minor, and trace elements is used to assess the chemical characteristics of the ground-water samples and to help determine the source and movement of the ground water.

Major ions

Major anions were analyzed in samples from monitoring wells, supply wells, and pore waters derived from cores. Chloride concentrations from monitoring-well samples ranged from 9.24 to 1,360 mg/L (table 14). The most saline samples from water-supply wells ranged from than 14.2 to 63 mg/L of chloride (table 16). Sulfate concentrations ranged from 0.5 to 101 mg/L for monitoring-well samples (table 14) and from 22.2 to 77.3 mg/L for water-supply-well samples (table 16). The most saline pore-water samples generally occurred in deeper cores at CCOC and MGCY, and overall ranged from 16 to 1,200 mg/L (table 15). Sulfate concentrations in pore-water samples ranged from 10 to 410 mg/L (table 15).

Major cations were analyzed in samples from monitoring and supply wells. Concentrations of calcium, magnesium, and sodium were generally below 80, 30, and 60 mg/L, respectively, for both monitoring-well and water-supply-well samples. The one exception was ELNR-2, which had a sodium concentration of 649 mg/L.

The combination of major ions allows for the additional assessment of ground-water groupings, source, age, and movement relative to streamflow that is a form of natural recharge in the Santa Clara Valley. Major-ion diagrams (Piper, 1944) were used to identify groups of wells having ground water of similar major-ion chemistry and to interpret mixing and other chemical reactions that occur along flow paths through aquifers. These diagrams show the concentration of major cations and anions, in milliequivalents per liter, relative to the total ionic content of the water. In addition the water samples from the multiple-well monitoring sites, depth-dependent water-supply well samples, and composite water-supply well samples are compared with three potential surface-water end members. The blue shaded region (fig. 14) represents the major-ion composition of streamflow from Permanente and Saratoga Creeks on the west side of the valley (Myhre and Bencala, 1998). The purple shaded region represents the composition of streamflow on Saratoga Creek that includes imported-water artificial recharge added to the streamflow (Myhre and Bencala, 1998). The yellow shaded region represents the imported water used, in part, for artificial recharge, and represents samples that preceed and span the 1976–77 drought (Seena Hoose, geologist, Santa Clara Valley Water District, unpub. data, 2004). These samples of imported water were collected during some of the same years as the isotope samples that are used by Muir and Coplen (1981) for comparison (fig. 15). The samples from shallower monitoring wells group with streamflow from the western side of the valley as shown by the blue shaded area in figure 14*A*. In contrast, most of the deeper monitoring wells appear to have different major-ion chemistry and may represent different waters from the deeper aquifers that may not receive recent streamflow or artificial recharge (fig. 14*A*). In particular, some of the samples from the ELNR site are relatively more saline and may represent very different waters relative to the other deep monitoring wells. Similarly, most supply wells appear to group with the monitoring wells and with the west-side streamflow samples (fig. 14*B*). However, some of the deeper supply wells in the central part of the basin, such as Gish No. 2, SC5-2, SC-26, and Berryessa No. 1, appear to group with the deeper monitoring wells and are not coincident with the samples from west-side streamflow or imported water (fig. 14*B*). Similarly, the depth-dependent data show that the deeper samples in the same supply wells only show a slight trend toward a mixture with the deeper monitoring-well compositions (fig. 14*C*). The majority of these samples are similar in composition to the west-side streamflow samples, which may suggest that downward wellbore flow is occurring in these water-supply wells. These results collectively indicate that water entering the deeper perforations of multiple-aquifer supply wells and water from the deeper monitoring wells represent deeper aquifers with different water chemistry, but downward wellbore flow may be affecting the chemistry of deeper samples in water-supply wells.

Selected Minor Elements

Selected minor elements that directly impact the water quality include iron and manganese, fluoride, boron, and bromide. Iron and manganese concentrations from monitoring-well samples ranged from less than 10 to 1,300 µg/L and from not detected to 517 µg/L, respectively (table 14). For water-supply wells, iron and manganese concentrations ranged from less than 1.0 to 544 µg/L and from less than 0.1 to 42 µg/L, respectively (table 16). Low fluoride concentrations, ranging from below detection limits to 0.3 mg/L, were typical of all samples from monitoring and supply wells. Boron concentrations were less than 200 mg/L in all samples, with the exception of the high values of 3,380 mg/L (MGCY-4), 3,860 mg/L (MGCY-1), 1,690 mg/L (ELNR-1), and 1,360 mg/L (ELNR-2) for four monitoring-well samples (table 14).

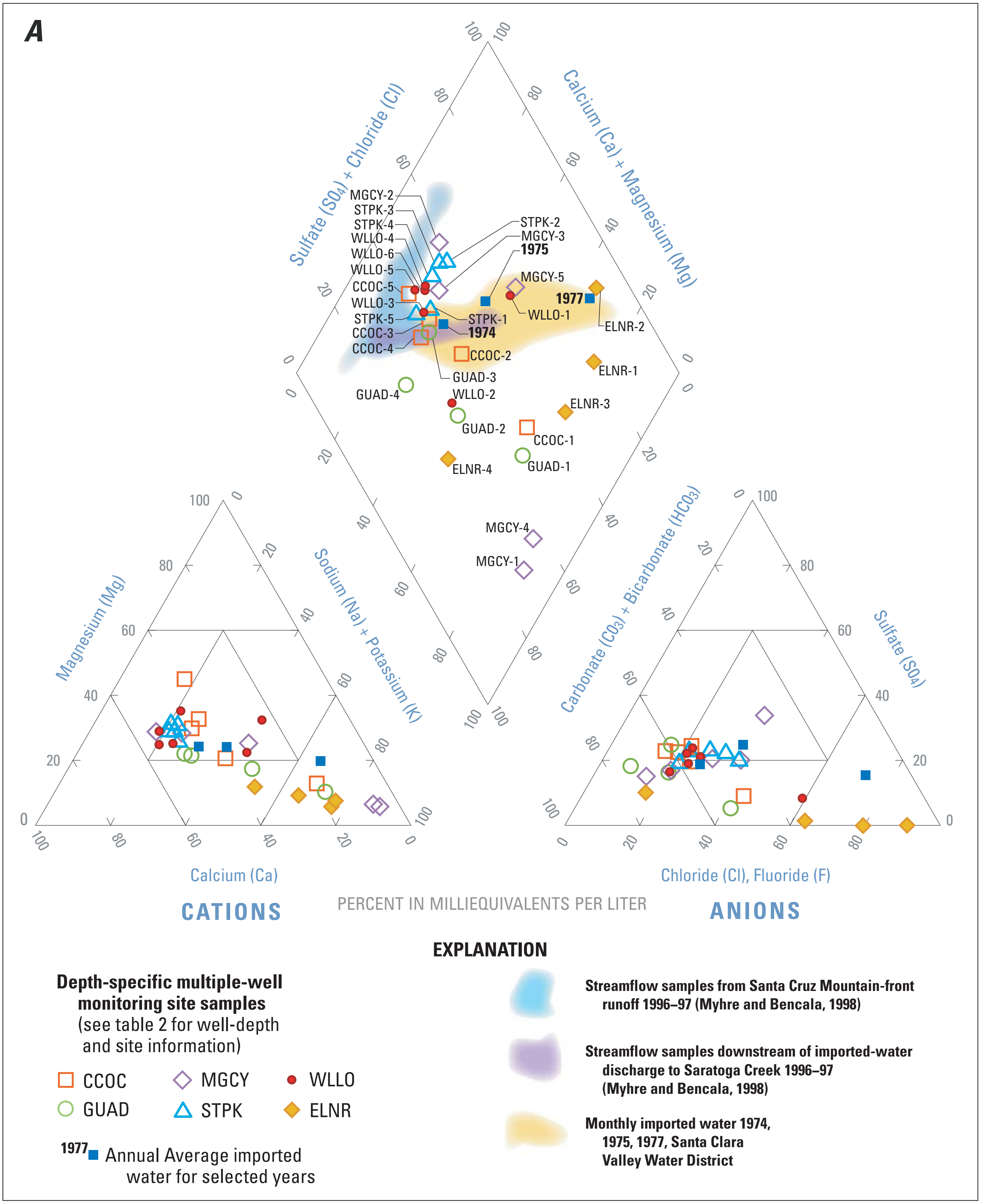

Figure 14. Trilinear diagrams of major-ion chemistry for multiple-well monitoring sites and selected water-supply wells, Santa Clara County, California.

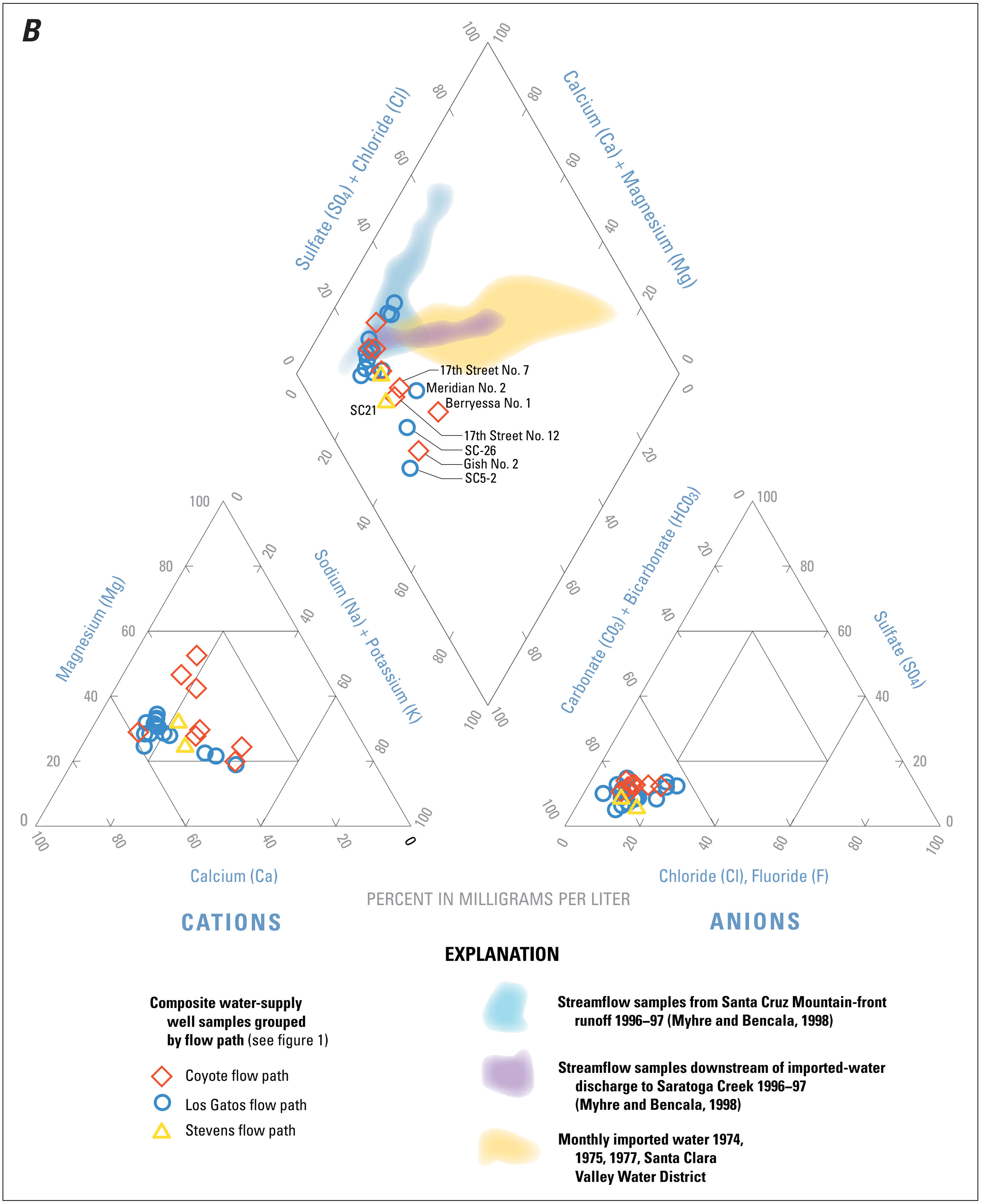

Figure 14.—Continued.

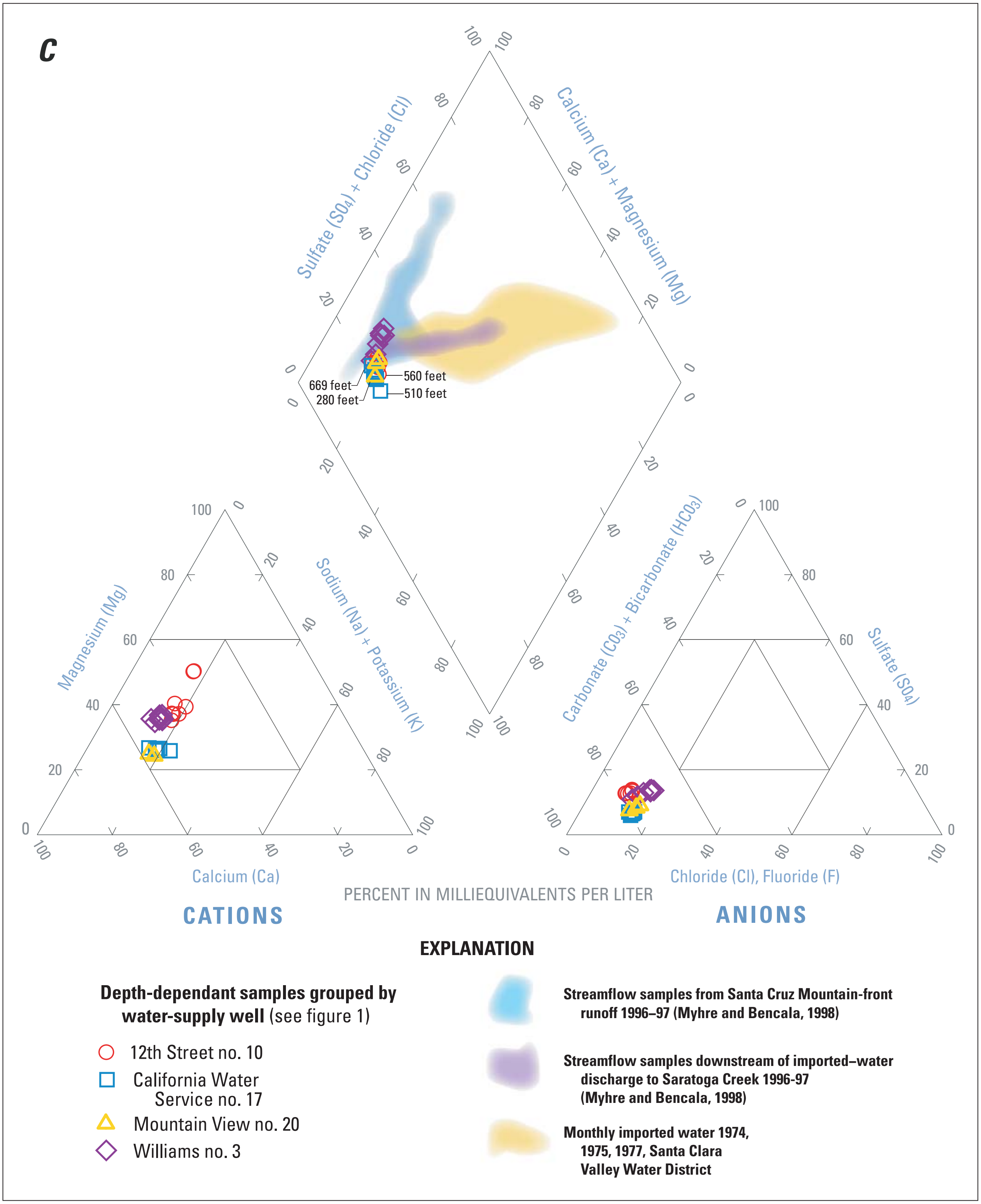

Figure 14.—Continued.

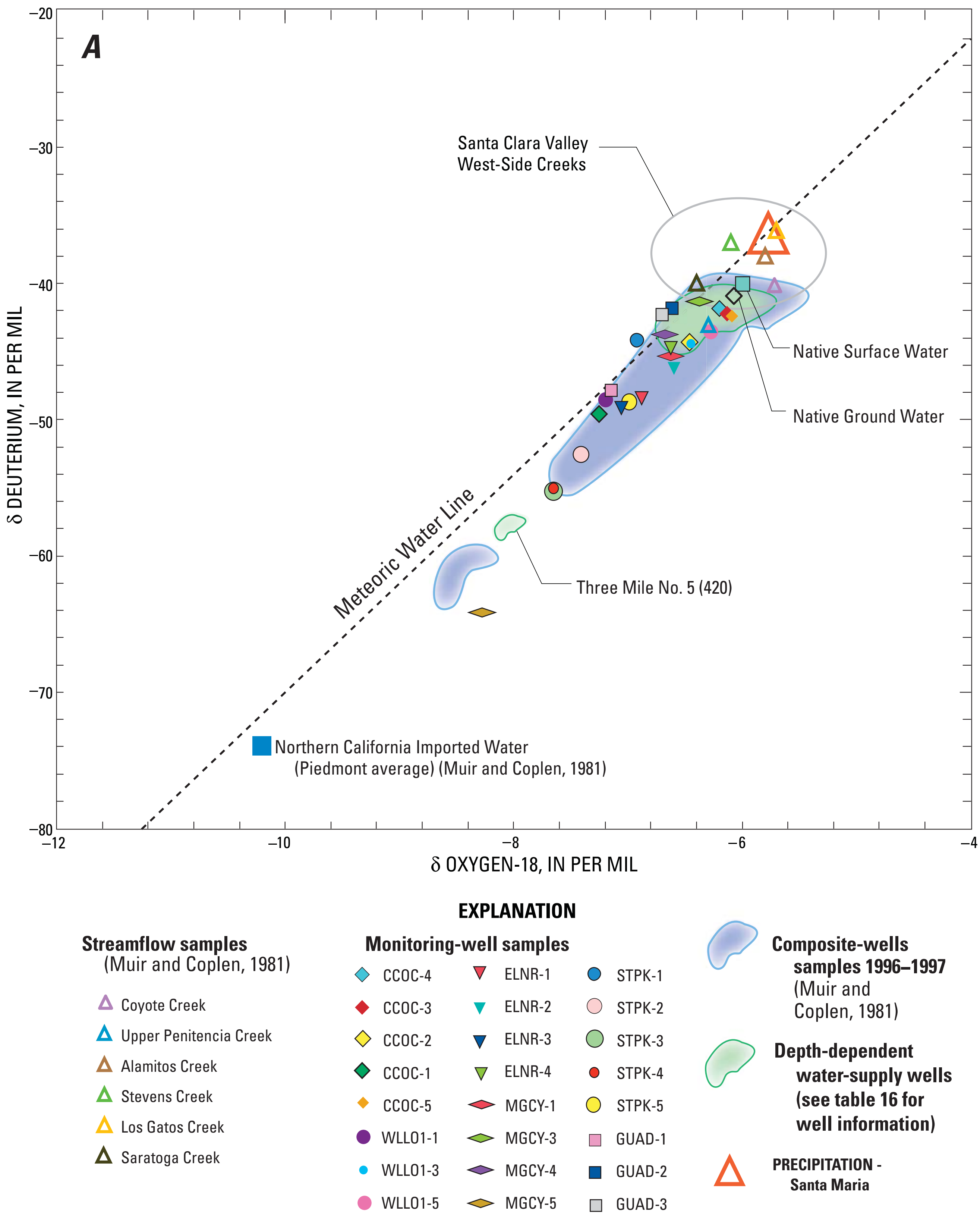

Figure 15. Stable isotopes for multiple-well monitoring sites and selected water-supply wells, Santa Clara County, California.

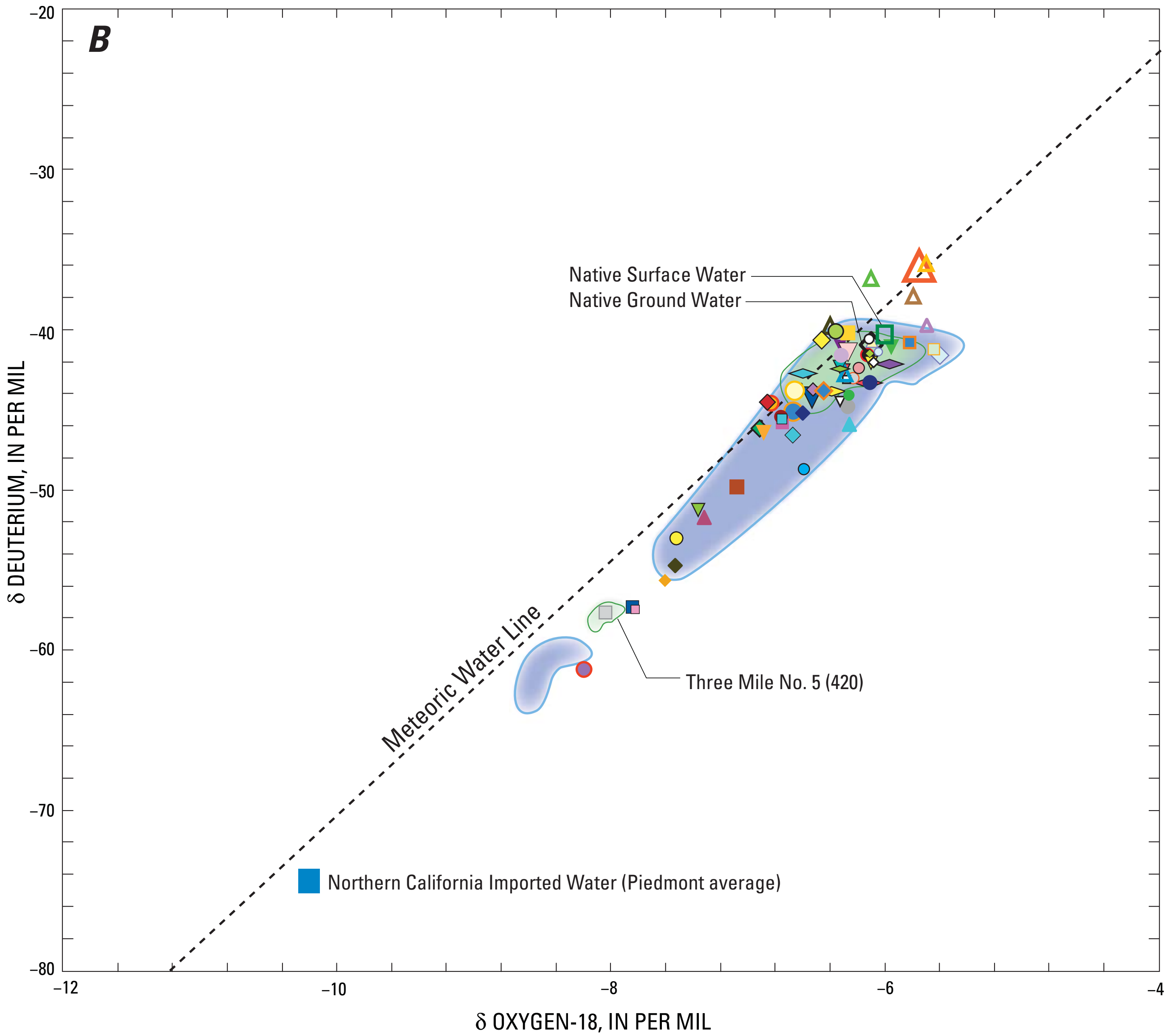

Figure 15.—Continued.

EXPLANATION FOR FIGURE 15B

Streamflow samples
(Muir and Coplen, 1981)

- Coyote Creek
- Upper Penitencia Creek
- Alamitos Creek
- Stevens Creek
- Los Gatos Creek
- Saratoga Creek

Composite-wells samples 1996–1997
(Muir and Coplen, 1981)

Depth-dependent water-supply wells

PRECIPITATION–Santa Maria

Composite samples water-supply wells

- Meridian No. 2 (24J3)
- SC-2-2 (11D2)
- SC-5-2 (2B1)
- Ridgely No. 2 (26R3)
- Bascom No. 4 (13E3)
- Main P (7R4)
- 12th street No. 10 (16C8)
- 17th street No. 7 (9D5)
- 17th street No. 12 (9D9)
- 17th street No. 12 (9D9)
- Senter (26D2)
- Gish No. 2 (31K1)
- 3 mile No. 3 (23R3)
- 3 mile No. 5 (23R5)
- 3 mile No. 5 (23R5) at 420
- PA Hale St No. 3 (35G10)
- Cropley No. 3 (16K5)
- Berryessa No.1 (32G1)
- Marbury No. 1 (33F6)
- Agnews No. 6 (13F6)
- SJC No. 1 (24B5)
- SC-26 (26D2)
- SC-21 (32H1)
- CWS No. 121-02 (19H2)
- CWS No. 123-01 (19M1)
- CWS No. 123-02 (19M10)
- CWS No. 119-03 (20L3)
- MV-21(22G9)
- MV-19 (22P2)
- MV-20 (27G2)
- CWS No. 116 (29B2)
- CWS No. 104-02 (32D1)
- MV-9 (33C1)
- CWS No. 39-01 (34G2)
- CWS No.17 (34K2)
- PA Rinconda (1B1)
- 17th St. No.3 (9D3)
- Malone No. 1 (29A1)
- Koch No. 1 (32G3)
- SC-3-02 (2G29)
- CWS No. 20-10 (6P1)
- SC-28 (10D10)
- Bascom No.5 (13E4)
- Buena Vista No. 6 (13K4)
- O'Connor Hospital (14B1)
- CWS No. 29-01 (18K1)
- Williams No. 3 (22E2)
- Ridgley No. 3 (26R4)
- Virginia No. 1 (34F1)
- CWS No. 27-01 (1E3)
- CWS No. 31-01 (1L1)
- CWS No. 18-02 (3H1)
- CWS No. 15-01 (3P1)
- GOWC No. 8 (11A4)
- GOWC No. 2 (12P1)
- SJC No. 11 (7A12)
- GOWC No. 21 (8Q2)
- GOWC No. 12 (18E11)

Figure 15.—Continued.

Selected Trace Elements

Ground-water samples at monitoring-well sites contained iodide concentrations ranging from 0.001 to 0.246 mg/L for well WLLO-1, and concentrations at water-supply wells ranged from less than 0.001 mg/L to as large as 0.09 mg/L for Berryessa 1 (table 16). Barium concentrations at monitoring-well sites ranged from 43.2 µg/L for well WLLO-2 to 320 µg/L for well ELNR-1, and concentrations at water-supply wells ranged from 55 µg/L to 270 µg/L for the Senter well (table 16). Strontium concentrations at multiple-well monitoring sites ranged from 95 µg/L (MGCY-1) to as large as 868 µg/L for well CCOC-5, and concentrations at water-supply wells ranged from 252 µg/L to as large as 585 µg/L for the Senter well (table 16). Most bromide concentrations also were relatively low (less than 0.3 mg/L) in most monitoring-well samples, with the exception of samples from MGCY-1, MGCY-4, STPK-3, WLLO-1, ELNR-1, ELNR-2, and ELNR-3 which ranged from 0.44 to 6.74 mg/L. Bromide appears to covary with chloride for selected pore-water samples, ranging from less than detection limits to 5.6 mg/L for core MGCY-75 (table 15). Similarly, bromide concentrations at water-supply wells ranged from 0.11 mg/L to as large as 0.22 mg/L for the Meridian No. 2 well (table 16). Arsenic concentrations at the multiple-well monitoring sites ranged from not detected mg/L to as large as 10.8 mg/L at MGCY-1, and concentrations ranged from less than 0.2 mg/L to nearly 2 mg/L at water-supply wells Williams No. 3 and 12th St. No. 10 (table 16). A few samples were collected for selected metals such as chromium at the WLLO site, where total dissolved chromium was 4.6 mg/L at WLL0-5 and total chromium was 6.7 mg/L at WLLO-4. Oze and others (2003) provide additional discussion and analyses of the relation between concentrations of the trace metals and core mineralogy for the WLLO site.

Dissolved Nitrogen and Carbon

The concentration of dissolved nitrate at the multiple-well monitoring sites ranged from less than 0.05 mg/L for WLLO-1 and MGCY-1 to 9.3 mg/L for WLLO-5 of nitrite (NO_2) plus nitrate (NO_3) as total nitrogen (N) (table 14). The dissolved nitrate concentrations from the water-supply wells ranged from 0.23 mg/L as total N for Berryessa 1 to 7.3 mg/L for CWS No. 17 at a depth of 280 ft bls (table 16). Nitrate concentrations varied in pore-water samples from less than 0.03 mg/L to as much as 25 mg/L in the shallower core samples at STPK (table 15).

The concentration of total dissolved organic carbon at the multiple-well monitoring sites ranged from less than 0.2 mg/L for GUAD-2, GUAD-3, and GUAD-4, to 0.9 mg/L for MGCY-5. Total inorganic carbon in pore-water samples ranged from 15 to 108 mg/L (table 15).

Isotopes

Isotope samples collected from selected monitoring and water-supply wells included oxygen (oxygen-18), hydrogen (deuterium H_2), boron ($^{10/11}B$), strontium (strontium-87/86), tritium (H_3), and carbon (carbon-13/12 ratio, carbon-14, as percent modern carbon). Stable isotopes of oxygen (oxygen-18) and hydrogen (deuterium H_2) are used to help determine the source of water and in particular have been used in the Santa Clara Valley to determine the percentage of artificial recharge that has mixed with natural recharge or native ground water (Muir and Coplen, 1981). Isotopes of boron can help to identify the source of dissolved ions that contribute to poor-quality water (Bassett, 1990; Vengosh and others, 1994). Isotopes of strontium are used to help infer the geologic source of the sediments that the water flows through (Izbicki and others, 1994).

Oxygen-18 and deuterium are naturally occurring stable isotopes of oxygen and hydrogen. Oxygen-18 (^{18}O) and deuterium (D) abundances are expressed as ratios in delta notation as per mil (parts per thousand) differences relative to the standard known as Vienna Standard Mean Ocean Water (VSMOW) (Gonfiantini, 1978). Because the source of most of the world's precipitation is the evaporation of seawater, the delta-^{18}O and delta-D composition of precipitation throughout the world is linearly correlated. This relation is known as the meteoric water line (Craig, 1961). The delta-^{18}O and delta-D composition of ground water relative to the meteoric water line and relative to the isotopic composition of water from other sources is an indicator of the source and movement of ground water. The delta-^{18}O and delta-D composition of water from monitoring wells ranged from –8.3 to –6.1 per mil and –64 to –41.1 per mil, respectively (table 14, fig. 15*A*). The delta-^{18}O and delta-D composition of water from water-supply wells ranged from –8.2 to –5.6 per mil and –57.7 to –40.1 per mil, respectively (table 16, fig. 15*B*).

Imported water from northern California that is artificially recharged into the aquifer systems by the SCVWD is relatively enriched in lighter isotopes of hydrogen (–74 per mil) and oxygen (–10.2 per mil) (Muir and Coplen, 1981). The differences in isotopic composition allows for a direct comparison with native ground water (–41 per mil δ-D and –6.1 per mil δ-^{18}O) and potential natural recharge from local surface water (–40 per mil δ-D and –6.0 per mil δ-^{18}O), such as Coyote Creek streamflow, which is isotopically heavier than imported water (Muir and Coplen, 1981). As local and imported water is recharged and mixes with native ground water, a directly proportional change in isotopic composition occurs and the percentage of artificial recharge can be estimated using simple fractions of isotopic data (Muir and Coplen, 1981).

The percentage of artificial recharge can be estimated for monitoring-well and water-supply-well samples assuming a binary mixture, following the method from Muir and Coplen (1981), and using the isotopic deuterium values for local and imported-water recharge (Hanson and others, 2002).

The result of these mixing estimates for samples from monitoring wells ranges from almost no artificial recharge, 0 percent (MGCY-3) and 2 percent (CCOC-4), to as much as 70 percent (MGCY-5) of imported-recharge water directly beneath the recharge ponds adjacent to Los Gatos Creek (fig. 1). The recharge ponds adjacent to Los Gatos Creek are supplied with local and imported water for artificial recharge. The distribution of well-sample isotopic values between the imported water and local streamflow that represents local ground-water recharge indicates that the monitoring wells located along the western margin tend to contain more artificial recharge, whereas wells located in the center of the valley contain less artificial recharge and generally are closer to the isotopic composition (O-18 and D) of local streamflow (fig. 15*A*).

Samples from water-supply wells show similar distributions of isotopes indicative of mixtures of artificial recharge of imported water and natural recharge from local streamflow isotopic composition (fig.15*B*). On the basis of the stable isotope binary mixtures (Hanson and others, 2002) of local recharge and imported-water recharge (Muir and Coplen, 1981), the estimated percentage of artificially recharged, imported water detected in water-supply wells ranges to as much as 40 percent artificial recharge (table 16). As in monitoring wells, the isotopic composition indicates larger percentages of artificial recharge to water- supply wells near artificial-recharge sites on the western side of the valley. Wells having indications of imported-water recharge greater than 15 percent are Bascom Nos. 4 and 5, BuenaVista No. 6, Cropley No. 3, Berryessa No. 1, Marbury No. 1, Agnews No. 6, PA Rinconada, Malone No. 1, Meridian No. 2, O'Connor Hospital, CWS No. 29-01, Williams No. 12, Three Mile Nos. 3 and 5, GOWC No. 8,Williams No. 3 and 12, and Rigley Nos. 2 and 3 (fig. 15, table 16). Mixtures from monitoring wells such as CCOC and STPK (table 14, fig. 15) also are similar to mixtures in depth-dependent samples from nearby water-supply wells such as 12th St. No. 10 and Williams No. 3 (figs. 15*A* and *B*), respectively.

Boron-10 and boron-11 are naturally occurring stable isotopes of boron. Natural and anthropogenic processes fractionate the boron-11 content relative to boron-10. The abundance of boron-11 (^{11}B) is expressed in delta notation (del) as per mil (parts per thousand) differences relative to the standard reference boron isotopic ratio of boron-11 to boron-10 of 4.161 for National Bureau of Standards boric acid sample No. 951 (Tom Bullen, Research Geochemist, U.S. Geological Survey, unpub data, 2001). Delta-boron-11 content in ground-water samples from the multiple-well monitoring sites ranged from 5.5 to 25.47 per mil, and the content in samples from the water-supply wells ranged from 6.7 to 32.22 per mil.

Strontium-87/86 isotopes are naturally occurring stable isotopes of strontium and are expressed as a ratio (Faure and Powell, 1972). Strontium in ground water undergoes cation exchange between calcium and strontium in the surrounding sediments. This exchange process is relatively rapid for most ground-water flow rates and results in a strontium isotopic composition of ground water that reflects the isotopic composition of the aquifer sediments. This makes strontium isotopes a useful indicator of the source of the sediments that compose the aquifer. Strontium isotopes also can be affected by base-ion exchange during seawater intrusion, but this effect may be too localized to be discernable from sampling of ground water on a regional scale. The strontium-87/86 ratio of ground water from the multiple-well monitoring sites ranges from 0.70566 to 0.70780. The strontium isotope ratios for samples from water-supply wells ranged from 0.70718 to 0.70773.

Unstable isotopes of water and carbon are used to identify the age of ground-water samples. Tritium (H_3) is a naturally occurring radioactive isotope of hydrogen having a half-life of 12.4 years. The activity of tritium is measured in picocuries per liter (pCi/L); and one pCi/L is equivalent to about 2.2 disintegrations of tritium per minute or about one tritium atom in 3.1×10^{17} atoms of hydrogen. Prior to 1952, the tritium concentration of precipitation in coastal California was about 6.5 pCi/L (Izbicki, 1996). Beginning in 1952, about 800 kilograms (1,760 lb) of tritium was released as a result of the atmospheric testing of nuclear weapons (Michel, 1976), and the tritium activity of precipitation at Santa Maria, California, increased to more than 2,200 pCi/L (International Atomic Energy Agency, 1981). This release stopped in 1962 with the signing of treaties banning the atmospheric testing of nuclear weapons. Since that time, tritium activity in precipitation has decreased to pre-1952 levels. Because tritium can be part of the water molecule and tritium activities are not significantly affected by reactions other than radioactive decay, it is an excellent tracer of the movement of water and relative age of water on time scales ranging from 0 to 50 years before present (Izbicki and others, 1993). Tritium concentrations in samples ranged from less than 0.2 to 15.9 pCi/L for multiple-well monitoring sites and from 0.3 to 18.3 pCi/L for water-supply wells. The monitoring wells that lack tritium or have trace amounts below the measurement uncertainty (0.58 to 1 pCi/L) include most of the deepest wells at CCOC-1, MGCY-1, WLLO-1, GUAD-1, and ELNR-1, along with intermediate and shallow wells at MGCY-4, GUAD-2,4, and ELNR-2, -3, and -4 (table 14). The lack of tritium in the shallowest monitoring well at the GUAD site suggests that little to no recent recharge has reached this part of the basin below the regional fine-grained confining layer. Water-supply wells with less than 6 pCi/L of tritium include SC-5-2, Gish No. 2, SC-21, SC-26, MV-21, Berryessa No. 1, and CWS-20-10 (table 16). The water-supply wells with the least tritium are those away from the artificial-recharge facilities and toward the center of the valley. The highest values of tritium in monitoring wells generally occur in the shallowest wells of CCOC-5, WLLO-5, STPK-5, and MGCY-5 (table 14). In addition, tritium was also found in the deep and intermediate wells of CCOC-2 through -4, WLLO-2 and -3, MGCY-2, STPK -2 through -4, and GUAD-3 (table 14). These elevated tritium concentrations, combined with older carbon-14 age dates (see next paragraph), may reflect downward wellbore flow in nearby water-supply wells. Similarly, the presence of tritium near the bottom of 12th St. No. 10 suggests that recent water is being pumped from the deeper screened intervals of this water-supply well (table 16). The tritium distribution at depth in this water-supply well is different from that at the nearby monitoring-well site (CCOC), suggesting that downward wellbore flow may contribute recent water to the deeper aquifers in clusters of wells such as the 12th St well field.

Carbon-14 (^{14}C) is a naturally occurring radioactive isotope of carbon that has a half-life of about 5,730 years. Carbon-14 data are expressed as percent modern carbon (pmc) by comparing carbon-14 activities with the specific activity of National Bureau of Standards oxalic acid: 12.88 disintegrations per minute per gram of carbon in the year 1950 equals 100 percent modern carbon. In addition to the naturally occurring carbon-14, carbon-14 also was produced during the atmospheric testing of nuclear weapons. As a result, carbon-14 activities can exceed 100 percent modern carbon. Carbon-14 is a tracer of the movement and relative age of water on time scales ranging from several hundred to more than 30,000 years before present. Because carbon-14 is not part of the water molecule, carbon-14 activities are affected by chemical reactions between dissolved constituents and aquifer material. As a result, carbon-14 data must be corrected using chemical, mineralogical, and carbon-13 data to evaluate chemical reactions that occur within an aquifer and to estimate the actual age of a water sample. Davis and Bentley (1982) estimated that errors in uncorrected carbon-14 ages may be as much as 100 percent.

The carbon-14 ages in this study were adjusted on the basis of the percentage of carbon-14 for ground-water considered to represent relatively recent recharge. The carbon-14 content of the upper screen sample from well 12th St No. 10 at a depth of 300 ft bls was used as an assumed initial ground water; carbon-14 content was 93.5 pmc and tritium was present. This sample represents a relatively recently recharged ground water. The percent of modern carbon-14 is increased by the resulting ratio of carbon-14 values to the 93.5 percent for the initial water of recent aquifer recharge. The values for uncorrected pmc at the multiple-well monitoring sites ranged from 0.78 for ELNR-3 to more than 100 pmc for several of the shallowest monitoring wells and MGCY-2 (table 14). This results in uncorrected and initial-water corrected ages for depth-specific ground-water samples from monitoring wells that range from 0 to 39,900 years before present (ybp) (table 14). On the basis of carbon-14 ages of more than 10,000 ybp, the deeper monitoring wells such as at CCOC-1, WLLO-1, and ELNR-1 through -3 indicate anomalous mixtures that may represent ground water recharged from ancient times when the climate was colder (Izbicki, 1996) and do not represent recent (less than 50 ypb) recharge.

The oldest ground-water ages generally occur in the deepest monitoring wells at each site and in the complete set of wells at the ELNR site. Except for the ELNR, MGCY, and GUAD sites, the shallower monitoring wells typically contain ground water that is less than 2,000 ybp (table 14). The uncorrected percent modern carbon for water-supply wells ranged from 35.7 for Gish No. 2 to more than 100 for Three Mile No. 5 (table 16). These results yield uncorrected ages for composite water-supply well samples that range from 0 to 8,500 ybp. Ages for an initial-water corrected groundwater pmc range from 0 to 8,000 ybp for water-supply wells, with the oldest ground water (greater than 5,000 ybp) occurring in wells toward the center of the basin (SC-5-2 and Gish No. 2) (table 16).

Carbon-13 is a stable isotope of carbon. Carbon-13 data are expressed as ratios in delta notation as per mil differences relative to the ratio of carbon-13 to the more common isotope carbon-12 in standard Peedee Belemnite (PDB) (Gonfiantini, 1978). The delta-carbon-13 values for the multiple-well monitoring sites ranged from −5.68 per mil (MGCY-1) to −32.36 per mil (ELNR-2) (table 14). The delta-carbon-13 values for the water-supply wells ranged from −13.26 per mil for well Bascom No. 4 to −15.63 per mil near the bottom (730 ft bls) of 12th St. No. 10. The age dates from the bottom of 12th St. No. 10 also indicate that recent water is pumped from the deeper screened intervals.

Hydrologic Data

Hydrologic data from the monitoring-well sites include water-level measurements and estimates of hydraulic conductivity. Measurements from the multiple-well monitoring sites provide information on water levels and aquifer properties of the deep aquifer system. The water levels, the water-level differences between aquifers, and the relation to the offshore equivalent freshwater heads in San Francisco Bay are all aspects of pressure within the aquifer system that help assess the potential for land subsidence, seawater intrusion, and intraborehole flow in the upper and lower aquifer systems. Estimates of hydraulic conductivity from slug tests of monitoring wells and their relation to aquifer tests of the deep-aquifer system water-supply wells provide some comparison of hydraulic transmission properties of the deep-aquifer system.

Ground-Water Levels

Periodic ground-water-level measurements at the multiple-well monitoring sites (fig. 16) were initiated in the Santa Clara Valley by SCVWD (Mark Merritt, Santa Clara Valley Water District, unpub. data, 2003). Water levels for wells CCOC-1 through -4 ranged from 57 ft above sea level to 25 ft below sea level (fig. 16*A*). Seasonal fluctuations of greater than 60 ft are superimposed on a multi-year decline for these several dry years (2000–03). Water-level differences of about 5 to 10 ft persist between CCOC-1 through -3 and CCOC-4 and are superimposed on the seasonal water-level fluctuations. The water levels from the shallowest monitoring well, CCOC-5, indicate smaller seasonal water-level fluctuations that lag slightly in time behind the fluctuations of the deeper monitoring wells. Water levels at the WLLO site (fig. 16*B*) adjacent to Los Gatos Creek, follow a similar pattern. The water levels at the MGCY site (fig. 16*C*), which is located at the artificial-recharge ponds upstream from WLLO and adjacent to Los Gatos Creek, show a much different pattern of water levels, seasonal fluctuations, and water-level differences. Although the water levels in the shallowest well at MGCY may reflect artificial-recharge events, there appears to be little or no relation between the water-level changes in the shallowest well and those in the deeper wells (fig. 16*C*). The water levels at STPK (fig. 16*D*) show seasonal water-level fluctuations similar to those at other sites, except for the shallowest well. The water levels for STPK-5 (fig. 16*D*) indicate an even larger lag behind the water-level change than measured at the CCOC and WLLO sites (figs. 16*A*,*B*,*D*).

Hydraulic Properties of Aquifers

Hydraulic conductivity estimates (table 17) for the multiple-aquifer systems at three of the multiple-well monitoring sites (CCOC, WLLO, and MGCY) were obtained using pressure-pulse “slug” tests and ranged between 0.1 and 583 ft/d. This test is very useful in small-diameter wells that have a small screened interval. Unlike longer term tests, the results are based on very small changes in water level measured over very short periods and, therefore, represent the hydraulic response from only a small volume of aquifer material adjacent to the well screen.

Estimates of hydraulic conductivity from time and water-level data were performed using two methods. The Cooper-Bredehoeft-Papadopulus (Cooper and others, 1967) method was used for overdamped responses and the Van Der Kamp (1976) method was used for underdamped responses. Both methods calculate values for the transmissivity based on an estimated storativity. Values for the specific storage of 1×10^{-5} ft^{-1} and 1×10^{-6} ft^{-1} were selected to bracket the estimated specific storage of the aquifers. These values were selected on the basis of the work of Hanson and Nishikawa (1996). The equivalent storage coefficients then were used to calculate two values for the transmissivity (table 17).

Several assumptions are made by both methods. The Cooper-Bredehoeft-Papadopulus method assumes that the aquifer is confined, homogeneous, isotropic, and of uniform thickness, and that the flow is horizontal and radially symmetric. The Van Der Kamp (1976) method assumes that the aquifer is homogeneous, the flow is horizontal and radially symmetric, the variation of the water level about the steady state is much smaller in magnitude than the height of the water column, and frictional forces within the casing are negligible. For both methods it is assumed that the aquifer thickness is equal to the length of the screened interval of the monitoring well and that the response is representative of the entire screened interval.

The Cooper-Bredehoeft-Papadopulus method was employed using Aqtesolv 2.5 (Duffield, 1999) computer software. Aqtesolv uses a nonlinear least-squares parameter estimation procedure to calculate a match curve without giving a match point. All points in the measured response curve were weighted equally. The accuracy of the fit between the match curve and the measured response curve is best characterized by the residual standard error (Std. Error).

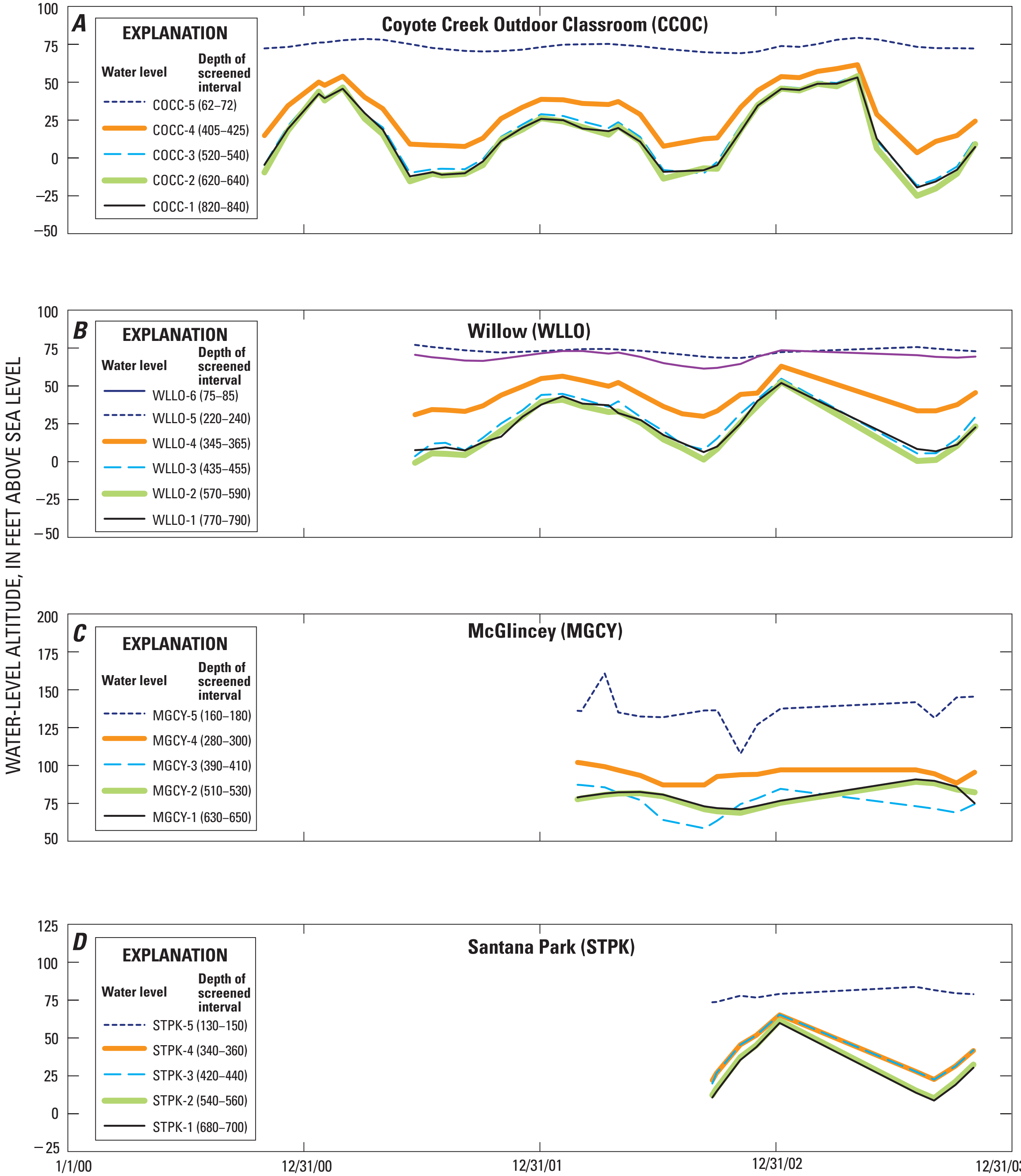

Figure 16. Ground-water levels for selected multiple-well monitoring sites, Santa Clara County, California.

The Van Der Kamp method uses an approximation described as an exponentially damped cyclic fluctuation wherein the two match points are the damping constant and the frequency of oscillation (Halford and Kuniansky, 2002). Two graphs are used to estimate the match points of absolute displacement versus time and another of displacement versus time. On each graph a line is hand fitted to estimate the match points. The geometric mean of the results for the CCOC, WLLO, and MGCY sites are presented in table 17.

Accessing Data

Users of the data presented in this report are encouraged to access information through the USGS National Water Information System web page (NWIS Web) located at http://waterdata.usgs.gov/nwis/.

NWIS Web serves as an interface to a database network of site information and real-time, ground-water, surface-water, and water-quality data collected from locations throughout the 50 states and elsewhere. Data are updated from the database network on a regularly scheduled basis.

Data are retrieved by category and geographic area, and the retrieval can be selectively refined by specific location or parameter field. NWIS Web can output water-level and water-quality graphs, site maps, data tables (in HTML and ASCII format) and develop site-selection lists.

Updates to data presented in this report after publication will be made to the U.S. Geological Survey's NWIS. Additional geophysical logs, sample-collection notes, and other information not contained in NWIS are kept on file at the USGS office in San Diego, California. Formal requests for specific data should be directed to the U.S. Geological Survey, California District Office, Hydrologic Data Center located in Sacramento, California.

Summary and Conclusions

Between 1999 and 2003, 38 ground-water monitoring wells were constructed at 8 multiple-well monitoring sites in Santa Clara County, California, in a cooperative study between the U.S. Geological Survey and the Santa Clara Valley Water District. Lithologic, geologic, geophysical, geomechanical, hydrologic, and geochemical data were collected from a combination of drill cuttings and (or) cores from the boreholes at each site. In addition, geophysical, water-chemistry, and hydrologic data were collected from the monitoring-wells and selected water-supply wells. These data will be used to update and improve the three-dimensional geohydrologic framework of the basin and to address several issues of water-supply, water-chemistry, sequence stratigraphy, geology, and geological hazards.

Geophysical logs yielded additional information about the distribution, and properties of ground water, and the nature of ground-water flow in aquifers. Logs indicate that all eight multiple-well sites consisted of about four to six different aquifer units separated by relatively fine-grained units. Analysis of geophysical logs indicated that most coarse-grained aquifers were shallower than 860 ft deep in the central and south-central part of the basin and shallower than 650 ft deep in the southwestern part of the basin. Coarse-grained units encountered at new monitoring sites varied in thickness from 10 to 25 ft (EVGR) in the southeastern areas of the valley and between 50 and 200 ft (CCOC, WLLO, MGCY, STPK, and STGA) in the south-central and southwestern areas of the valley. Coarse-grained units in the central valley ranged in thickness from 25 to 50 ft (GUAD). Deviations from temperature-gradient logs indicated that the majority of horizontal ground-water flow was above 775 ft (WLLO) in the south-central valley and above 510 ft (EVGR) in the southeastern valley. In the southwestern part of the valley the deepest aquifers were above 725 ft (MGCY) and closely matched disturbed temperature-gradient logs.

Analysis of more than 1,150 ft of core included bulk physical properties of primary-wave acoustic velocity, density, and magnetic susceptibility. Primary-wave velocity values were normally distributed with a mean of 5,515 ft/s and ranged from 4,700 to 6,100 ft/s. Average core density was bimodal in its distribution for average value per core between 2.19 and 2.32 g/cm^2 with an average of 2.16 g/cm^2 for all core data. About 24 percent of all core sampled had an average bulk density greater than 2.27; these cores were mostly from the EVGR and MGCY sites in the southern unconfined areas of the valley. Average per core magnetic susceptibilities ranged from 0 to 246, and most cores ranged between 9 and 40 with an average of 22.

Water-chemistry data indicate that the ground water in the alluvial aquifers is generally of good quality that is low in total dissolved solids and chloride. Isotopic data indicate that artificial recharge is occurring throughout the shallower parts of the aquifer system and that recent recharge (less than 50 years old) occurs throughout most of the basin but may not be present toward the center of the basin at GUAD below the extensive fine-grained confining units. The percentage of artificial recharge ranges from 0 to 61 percent for water-supply wells. Ground-water ages indicate a wide range in ages: the age of most shallow ground water at the multiple-well monitoring sites is less than 2,000 ybp and the age of deeper ground water is as much as 39,900 ybp.

Preliminary water-level data from the multiple-well monitoring sites indicate seasonal water-level fluctuations as great as 60 ft and water-level differences between aquifers as great as 10 ft. The water-level hydrographs indicate different water-level changes and relations between aquifers in different parts of the basin. However, most of these hydrographs indicate the potential for downward water-level gradients, with lower water levels in the deeper monitoring wells.

Estimates of hydraulic and geomechanical properties were made from tests of whole-core samples and tests at selected monitoring wells. Slug tests from monitoring wells indicate horizontal hydraulic conductivities that range from 0.1 to 583 ft/d. Laboratory tests of selected whole cores indicate vertical hydraulic conductivities for the finer grained sands, silts, and clays that range from 8×10^{-4} to 0.3 ft/d and effective porosities that range from 0.21 to 0.4. Consolidation tests of finer grained whole-core samples resulted in geometric mean inelastic and elastic specific storage values of 1.5×10^{-4} ft^{-1} and 1.2×10^{-5} ft^{-1}, respectively.

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Tables

Table 1. Summary of multiple-well monitoring sites, Santa Clara County, California

[ft bls, feet below land surface]

Common name	State well No.	Site identification No.	Drilling start date	Drilling end date	Total drilled depth (ft bls)
Coyote Creek Outdoor Classroom (CCOC)	007S001E09L004–8	372012121521001–5	09/15/00	10/21/00	1,006
Willow (WLLO)	007S001E19B002–7	371858121541201–6	03/23/01	04/18/01	850
McGlincey (MGCY)	007S001W35L012–16	371636121563401–5	08/04/01	08/31/01	873
Santana Park (STPK)	007S001W14P001–5	371904121563601–5	02/21/02	03/21/02	1,000
Guadalupe (GUAD)	006S001W26Q001–4	372241121561201–4	08/22/02	09/29/02	1,372
Eleanor Park (ELNR)	005S003W36P002–5	372701122083401–4	02/04/03	02/26/03	932
Saratoga (STGA)	007S001W29C003–6	371802121595001–4	03/03/03	03/17/03	1,000
Evergreen (EVGR)	007S002E19C005–9	371858121475001–5	03/31/03	04/19/03	1,030

Table 2. Summary of well completions for multiple-well monitoring sites, Santa Clara County, California

[depth in feet below land surface; see table 1 for definitions of local well names]

Local well name	State well No.	Depth to bottom of well	Depth to top of perforations	Depth to bottom of perforations	Depth to top of sand pack	Depth to bottom of sand pack
CCOC-1	007S001E09L004M	1,000	820	840	790	850
CCOC-2	007S001E09L005M	640	620	640	599	655
CCOC-3	007S001E09L006M	540	520	540	478	556
CCOC-4	007S001E09L007M	425	405	425	360	425
CCOC-5	007S001E09L008M	72	62	72	60	80
WLLO-1	007S001E19B003M	850	770	790	740	800
WLLO-2	007S001E19B007M	590	570	590	550	610
WLLO-3	007S001E19B004M	455	435	455	415	475
WLLO-4	007S001E19B005M	365	345	365	315	375
WLLO-5	007S001E19B006M	240	220	240	200	260
WLLO-6	007S001E19B002M	85	75	85	60	100
MGCY-1	007S001W35L012M	850	630	650	588	655
MGCY-2	007S001W35L013M	530	510	530	458	535
MGCY-3	007S001W35L014M	410	390	410	352	415
MGCY-4	007S001W35L015M	300	280	300	263	320
MGCY-5	007S001W35L016M	180	160	180	155	208
STPK-1	007S001W14P001M	980	680	700	653	720
STPK-2	007S001W14P002M	560	540	560	522	603
STPK-3	007S001W14P003M	440	420	440	395	468
STPK-4	007S001W14P004M	360	340	360	315	375
STPK-5	007S001W14P005M	150	130	150	107	178
GUAD-1	006S001W26Q001M	1,360	810	830	792	860
GUAD-2	006S001W26Q002M	600	580	600	522	606
GUAD-3	006S001W26Q003M	460	440	460	386	460
GUAD-4	006S001W26Q004M	330	310	330	310	370
ELNR-1	005S003W36P002M	930	830	850	793	880
ELNR-2	005S003W36P003M	740	720	740	700	763
ELNR-3	005S003W36P004M	560	540	560	508	570
ELNR-4	005S003W36P005M	200	180	200	145	210
STGA-1	007S001W29C003M	1,000	630	650	615	723
STGA-2	007S001W29C004M	550	530	550	500	585
STGA-3	007S001W29C005M	380	360	380	343	412
STGA-4	007S001W29C006M	270	250	270	205	305
EVGR-1	007S002E19C005M	1,030	740	760	700	774
EVGR-2	007S002E19C006M	630	610	630	560	683
EVGR-3	007S002E19C007M	390	370	390	333	400
EVGR-4	007S002E19C008M	290	270	290	248	310
EVGR-5	007S002E19C009M	150	130	150	120	175

Table 3. Lithologic shaker logs for Coyote Creek Outdoor Classroom (CCOC) (7S/1E-9L4-8) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 93 ft.; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, August–September 2000; total depth drilled 1,006 ft.; screened intervals: 62–72; 405–425; 520–540; 620–640; 820–840 ft; ft, foot]

Depth (ft)		Description
From	To	
0	141	Sandy gravel, granular to small pebble-sized gravel with very fine to fine sand; moderately sorted; subrounded to rounded; olive gray (5Y 5/2)
141	151	Silty sandy gravel, granule to large pebble-sized gravel with very fine sand and some minor silt; very poorly sorted; subangular to subrounded; olive (5Y 5/3)
151	161	Sandy gravel, granule to large pebble-sized gravel with very coarse sand; very poorly sorted; angular to rounded; very dark grayish brown (2.5Y 3/2)
161	171	Silty sandy gravel, granule to large pebble-sized gravel with very fine to fine sand and some minor silt; very poorly sorted; subangular to subrounded; olive brown (2.5Y 4/3)
171	181	Silty gravelly sand, fine to very fine sand with some granule to small pebble-sized gravel and silt; moderately sorted; subangular to subrounded; dark olive gray (5Y 3/2)
181	191	Sandy silt, silt with minor very fine sand; well sorted; subangular to subrounded; olive gray (5Y 5/2)
191	211	Clayey silty sandy gravel, granule to small pebble-sized gravel with coarse to very coarse sand, silt and clay; moderately sorted; angular to subangular; olive gray (5Y 4/2)
211	221	Slightly gravelly silty clay, clay with silt and minor granule to small pebble-sized gravel; moderately to well sorted; subangular to subrounded; dark gray (5Y 4/1)
221	231	Silty clay; clay with some silt; well sorted; subangular to subrounded; dark gray (5Y 4/1)
231	291	Silty sandy gravel, granule to large pebble-sized gravel with very fine to very coarse sand and some silt; very poorly sorted; subangular to subrounded; dark olive gray (5Y 3/2)
291	311	Sandy gravel, granule to large pebble-sized gravel with very coarse sand and silt; very poorly sorted; subangular to subrounded; pale olive (5Y 6/3)
311	331	Clayey silty gravel, granule to medium pebble-sized gravel with silt and clay; poorly sorted; angular to subrounded; olive gray (5Y 5/2)
331	341	Slightly gravelly silty clay, clay with silt, granular; moderately sorted; subrounded; dark gray (5Y 4/1) to pale olive (5Y 5/2)
341	361	Gravelly silty sand, coarse to very coarse sand with granule to large pebble-sized gravel and some minor silt; poorly sorted; angular to subrounded; olive gray (5Y 5/2)
361	371	Gravelly silty sand, coarse to very coarse sand with granule to large pebble-sized gravel and some minor silt; poorly sorted; angular to subrounded; olive gray (5Y 4/2)
371	381	Sandy gravel, granule to large pebble-sized gravel with coarse to very coarse sand; moderately sorted; subangular to rounded; dark greenish gray (10Y 4/1)
381	391	Silty sandy gravel, granule to large pebble-sized gravel with coarse to very coarse sand and minor silt; moderately sorted; subangular to rounded; olive gray (5Y 4/2)
391	401	Silty gravelly sand, coarse to very coarse sand with granule to large pebble-sized gravel and some silt; moderately sorted; subangular to rounded; olive gray (5Y 4/2)
401	410	Clayey silty sandy gravel, granule to large pebble-sized gravel with coarse to very coarse sand and minor silt and clay; very poorly sorted; subangular to well rounded; light yellowish brown (2.5Y 6/4)
410	420	Sandy gravel, granule to large pebble-sized gravel and minor coarse to very coarse sand; well sorted; subangular to subrounded; mainly dark gray (5Y 4/1)
420	430	Silty gravelly sand, very coarse sand with granule to medium pebble-sized gravel and minor silt; moderately sorted; subangular to subrounded; olive (5Y 5/3)
430	440	Slightly sandy clayey silt, silt with some clay and minor very fine to very coarse sand; well sorted; subangular to subrounded; olive gray (5Y 5/2)
440	450	Slightly gravelly clayey silt, silt with clay and granule to large pebble-sized gravel; moderately sorted; subangular to rounded; olive gray (5Y 5/2)

Table 3. Lithologic shaker logs for Coyote Creek Outdoor Classroom (CCOC) (7S/1E-9L4–8) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
450	511	Silty sandy gravel, granule to medium pebble-sized gravel with coarse to very coarse sand and some minor silt; moderately sorted; subangular to subrounded; dark gray (5Y 4/1)
511	521	Clayey silty sandy gravel, granule to large pebble-sized gravel with very fine to very coarse sand, silt and clay; poorly sorted; angular to subangular; dark gray (5Y 4/1)
521	531	Slightly silty sandy gravel, granule to medium pebble-sized gravel; moderately sorted; subangular to rounded; olive gray (5Y 5/2)
531	541	Silty sandy gravel; granule to large pebble-sized gravel with coarse to very coarse sand and silt; poorly sorted; angular to subrounded; greenish gray (10Y 5/1)
541	551	Clayey silty sandy gravel, granule to large pebble-sized gravel with some very fine to fine sand, silt and minor clay; poorly sorted; angular to subrounded; dark greenish gray (5GY 3/1)
551	601	Silty sandy gravel, granule to medium pebble-sized gravel with very fine to fine sand and some silt; moderately sorted; angular to subangular; light olive brown (2.5Y 5/3)
601	611	Gravelly silty clay, clay with silt and minor granule to small pebble-sized gravel; moderately sorted; subangular to well rounded; olive brown (2.5Y 4/3)
611	621	Gravelly sandy clayey silt, silt with clay, very fine to fine sand and some granule to small pebble-sized gravel; moderately sorted; subangular to rounded; olive brown (2.5Y 4/3)
621	631	Silty sandy gravel, granule to large pebble-sized gravel with some coarse to very coarse sand and silt; well sorted; subangular to subrounded; light olive brown (2.5Y 5/3)
631	651	Silty sandy gravel, granule to medium pebble-sized gravel with coarse to very coarse sand and silt; well sorted; subangular to subrounded; light olive brown (2.5Y 5/3)
651	661	Gravelly silty sand, coarse to very coarse sand with silt and granule to large pebble-sized gravel; moderately sorted; subangular to rounded; grayish brown (2.5Y 5/2)
661	671	Silty sandy gravel, granule to medium-sized gravel with some medium to very coarse sand and minor silt; poorly sorted; subangular to rounded; grayish brown (2.5Y 5/2)
671	691	Clayey silty sandy gravel, granule to large pebble-sized gravel with very fine to very coarse sand, silt and clay; very poorly sorted; angular to subrounded; dark greenish gray (10Y 4/1)
691	701	Gravelly silty sand, very fine to very coarse sand with silt and some granule to medium pebble-sized gravel; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
701	711	Sandy gravel, granule to medium pebble-sized gravel with very coarse sand; moderately sorted; angular to well rounded; grayish brown (2.5Y 5/2)
711	751	Sandy silty clay, clay with silt and some very fine to very coarse sand; moderately sorted; angular to subrounded; light olive brown (2.5Y 5/3)
751	761	Silty sandy gravel, granule to small pebble-sized gravel with coarse to very coarse sand and silt; well sorted; angular to subrounded; grayish brown (2.5Y 5/2)
761	771	Slightly gravelly sandy silty clay, clay with silt, coarse to very coarse sand and minor granule to medium pebble-sized gravel; moderately sorted; angular to subrounded; dark gray (5Y 4/1)
771	791	Clayey silty sandy gravel, granule to medium pebble-sized gravel with very coarse sand, silt and clay; moderately sorted; subrounded to rounded; dark gray (5Y 4/1)
791	801	Silty sandy gravel, granule to medium pebble sized gravel with coarse to very coarse sand and silt; well sorted; subangular to rounded; light olive brown (2.5Y 5/4)
801	811	Silty sandy gravel, granule to medium pebble-sized gravel with fine to very coarse sand and minor silt; poorly sorted; angular to subrounded; light yellowish brown (2.5Y 6/4)
811	841	Silty sandy gravel, granule to large pebble-sized gravel with coarse to very coarse sand and minor silt; moderately sorted; angular to subrounded; light yellowish brown (2.5Y 6/3)
841	851	Slightly silty sandy gravel, granule to medium pebble-sized gravel with coarse to very coarse sand and minor silt; poorly sorted; angular to well rounded; light olive brown (2.5Y5/3)
851	861	Slightly gravelly sandy silty clay, clay with silt, medium to very coarse sand and minor granule to small pebble-sized gravel; poorly sorted; subangular to subrounded; gray (5Y 5/1)
861	871	Sandy silty clay, clay with silt and fine to very coarse sand; moderately sorted; subangular to subrounded; dark gray (5Y 4/1)

Table 3. Lithologic shaker logs for Coyote Creek Outdoor Classroom (CCOC) (7S/1E-9L4–8) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
871	881	Slightly gravelly sandy silty clay, clay with silt, medium to very coarse sand and minor granule to large pebble sized gravel; poorly sorted; subrounded to well rounded; dark gray (5Y 4/1) to very dark gray (5Y 3/1)
881	911	Silty sandy gravel, granule to medium pebble-sized gravel with medium to very coarse sand and some silt; moderately sorted; subangular to subrounded; olive gray (5Y 5/2)
911	921	Slightly gravelly sandy clayey silt, silt with some clay, coarse to very coarse sand and granule to medium pebble-sized gravel; poorly sorted; angular to subrounded; olive gray (5Y 5/2)
921	931	Slightly gravelly sandy clayey silt, silt with clay, coarse to very coarse sand and granule to medium pebble-sized gravel; poorly sorted; angular to rounded; dark greenish gray (10Y 3/1)
931	941	Sandy silty clay, clay with silt and minor coarse to very coarse sand; well sorted; subrounded to rounded; dark greenish gray (10Y 4/1)
941	951	Gravelly sand, coarse to very coarse, and granule to medium pebble-sized gravel; well sorted; angular to subangular; olive gray (5Y 5/2)
951	961	Sandy silty clay, clay with some silt and coarse to very coarse sand; moderately sorted; angular to subrounded; dark gray (5Y 4/1)
961	981	Slightly gravelly sandy silty clay, clay with silt, fine to very coarse sand and granule to medium pebble-sized gravel; poorly sorted; angular to subrounded; dark gray (5Y 4/1)
981	991	Slightly gravelly sandy silty clay, clay with silt, fine to very coarse sand and granule to small pebble-sized gravel; poorly sorted; angular to rounded; dark greenish gray (10Y 4/1)
991	1,006	**CORE**: Peat above gravel

Table 4. Lithologic shaker and core logs for Willow (WLLO) (7S/1E-19B2–7) multiple-well monitoring site, Santa Clara County California

[Altitude of land surface, approximately 95 ft. Depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, April 2001; total depth drilled 850 ft.; screened intervals 75–85; 220–240; 345–365; 435–455; 570–590; 770–790 ft; ft, foot]

Depth (ft)		Description
From	To	
0	5	Silty sand, very fine to very coarse sand with silty; well sorted; angular to subrounded; dark olive gray (5Y 3/2)
5	15	Sandy silt, silt with very fine to coarse sand; well sorted; subangular to subrounded; olive brown (2.5Y 4/3)
20	25	Silty sand, very fine to very coarse sand with silt; well sorted; subangular to subrounded; olive brown (2.5Y 4/3)
25	30	Silty sand, very fine to very coarse sand with silt; well sorted; angular to subrounded; brown (10YR 4/3)
30	35	Sandy clayey silt, silt with clay and very fine to fine sand; very well sorted; angular to subrounded; olive brown (2.5Y 4/3)
35	40	Slightly gravelly sandy silt, silt with very fine to coarse sand and minor granule to pebble-sized gravel; moderately sorted; angular to subrounded; olive brown (2.5Y 4/3)
	45	**CORE**: Gravelly sand, very fine to very coarse sand and granule to pebble-sized gravel; moderately sorted; angular to subrounded; olive (5Y 5/3)
	50	**CORE**: Gravelly sand, very fine to very coarse sand and granule to pebble-sized gravel; poorly sorted; angular to subrounded; brown (10YR 4/3)
	55	**CORE**: Silty sand, very fine to medium sand and silt; very well sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
	60	**CORE**: Gravelly sand, very fine to medium sand and pebble-sized gravel; poorly sorted; angular to subrounded; olive (2.5Y 5/4)
	65	**CORE**: Sandy gravel, pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; light olive brown (2.5 5/3)
65	70	Gravelly sand, medium to very coarse sand with granule to pebble-sized gravel; well sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
70	75	Sandy gravel granule to pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; dark grayish brown (2.5Y 4/3)
75	80	Gravelly sand, coarse to very coarse sand with granule to pebble-sized gravel; moderately sorted; angular to well-rounded; very dark gray (2.5Y 3/1)
80	85	Gravelly sand, medium to very coarse sand with granule to pebble-sized gravel; well sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
	85	**CORE**: Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/3)
	88	**CORE**: Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/3)
	88	**CORE**: Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/3)
	90	**CORE**: Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; very poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
	95	**CORE**: Gravel, pebble-sized gravel; very well sorted; angular to rounded; dark greenish gray
	100	**CORE**: Gravel, pebble-sized gravel; very well sorted; angular to rounded; dark greenish gray
100	110	Slightly gravelly sandy silt, silt with very fine to medium sand and minor pebble-sized gravel; poorly sorted; subrounded to rounded; olive brown (2.5Y 4/3)
	115	**CORE**: Sand, very fine to very coarse sand; well sorted; subangular to subrounded; dark greenish black (2.5Y 4/3)
115	120	Slightly gravelly silty sand, very fine to very coarse sand with silt and minor granule to pebble-sized gravel; poorly sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
120	130	Slightly gravelly silty sand; very fine to very coarse sand with silt and minor granule to pebble-sized gravel; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)

Table 4. Lithologic shaker and core logs for Willow (WLLO) (7S/1E-19B2–7) multiple-well monitoring site, Santa Clara County California—Continued

Depth (ft)		Description
From	To	
130	140	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; poorly sorted; subangular to subrounded; yellowish brown (10YR 5/4)
140	150	Sandy gravel, granule to pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to well-rounded; very dark grayish brown (2.5Y 3/2)
150	160	Sandy gravel, granule to pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to well-rounded; very dark grayish brown (2.5Y 3/2)
160	170	Clayey silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand, silt, and some clay; very poorly sorted; angular to well-rounded; light olive brown (2.5Y 5/3)
170	180	Clayey silty sandy gravel; granule to pebble-sized gravel with very fine to very coarse sand, silt, and clay; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/4) dark olive gray (5Y 3/2)
180	200	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to subrounded; dark grayish brown (2.5Y 4/2)
200	210	Slightly sandy gravel, granule to pebble-sized gravel with minor coarse to9 very coarse sand; well sorted; angular to rounded; dark yellowish brown (10YR 4/4)
210	220	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
220	230	Gravelly silty sand, very fine to very coarse sand with silt and granule-sized gravel; poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
230	240	Sandy gravel, granule to pebble-sized gravel with medium to very coarse sand; moderately sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
240	250	Gravel, pebble-sized gravel; very well sorted; subangular to rounded; dark grayish brown (2.5Y 4/2)
250	260	Gravelly silty sand, very fine to very coarse sand with silt and granule to pebble-sized gravel; poorly sorted; angular to well-rounded; light olive brown (2.5Y 5/4)
260	280	Gravelly silty sand, very fine to very coarse sand with silt and granule to pebble-sized gravel; poorly sorted; subangular to rounded; light olive brown (2.5Y 5/4)
280	290	Gravelly silty sand, very fine to very coarse sand with silt and granule to pebble-sized gravel; poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
	300	**CORE**: Silty sand, very fine to medium-sized sand with some silt; very well sorted; angular to subrounded; olive brown (2.5Y 4/3)
	305	**CORE**: Sandy silty clay, clay with silt and very fine to fine sand; well sorted; subangular to subrounded; olive gray (5Y 4/2)
	310	**CORE**: Silty sand, very fine to medium sand and silt; well sorted; subangular to subrounded; olive gray (5Y 4/2)
	315	**CORE**: Sandy silty clay, clay with silt and very fine to coarse sand; moderately sorted; subangular to rounded; olive gray (2.5Y 4/3)
315	320	Gravelly silty sand, very fine to very coarse sand with silt and granule-sized gravel; poorly sorted; subangular to subrounded; olive gray (5Y 4/2)
320	330	Gravelly sand, very fine to very coarse sand with granule to pebble sized gravel; poorly sorted; angular to rounded; olive (5Y 5/3)
330	340	Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; poorly sorted; subangular to well rounded; olive (5Y 4/3)
340	350	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to well-rounded; light olive brown (2.5Y 5/3)
350	360	Sandy gravel, granule to pebble-sized gravel with fine very coarse sand; poorly sorted; angular to rounded; dark olive gray (5Y 3/2)
360	370	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/3)
370	380	Gravel, pebble-sized gravel; well sorted; subangular to subrounded; light yellowish brown (2.5Y 5/3)

Table 4. Lithologic shaker and core logs for Willow (WLLO) (7S/1E-19B2–7) multiple-well monitoring site, Santa Clara County California—Continued

Depth (ft)		Description
From	To	
380	390	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/3) to dark olive brown (2.5Y 3/3)
390	400	Gravelly silty sand, very fine to very coarse sand with silt and granule to pebble-sized gravel; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/3)
400	410	Gravelly silty sand, very fine to very coarse sand with silt and granule to pebble-sized gravel; poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
	414	**CORE**: Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
414	420	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and some silt; poorly sorted; angular to rounded; light olive brown (2.5Y 5/3)
420	430	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to rounded; light olive brown (2.5Y 5/3)
430	440	Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; moderately sorted; angular to rounded; olive brown (2.5Y 4/3); accessory: red chert
440	450	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and some silt; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
450	460	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to rounded; very dark grayish brown (2.5Y 3/2)
460	470	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to rounded; very dark grayish brown (2.5Y 3/2)
470	480	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to rounded; light olive brown (2.5Y 5/4)
480	490	Sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to rounded; light olive brown (2.5Y 5/4)
	493	**CORE**: Sandy silty clay, clay with some silt and some very fine to very coarse sand; poorly sorted; subangular to subrounded; dark grayish brown (10YR 4/2)
493	500	Gravel, pebble-sized gravel; well sorted; subrounded; dark greenish gray (10YR 3/1)
500	510	Sandy gravel, granule to pebble-sized gravel with fine to very coarse sand; moderately sorted; angular to subrounded; olive brown (2.5Y 4/8)
510	520	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; brown (10YR 4/3)
520	522.5	Silty sandy gravel, granule to pebble-sized gravel with fine to very coarse sand and silt; very poorly sorted; angular to rounded; brown (10YR 4/3)
522.5	530	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
530	540	Slightly sandy gravel, granule to pebble-sized gravel with minor very coarse sand; poorly sorted; angular to subrounded; greenish gray (5GY 5/1); accessory: red chert
540	550	Slightly sandy gravel, granule to pebble-sized gravel with minor very coarse sand; poorly sorted; angular to subrounded; greenish gray (5GY 5/1);); accessory: red chert
550	560	Sandy gravel, granule to pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
560	570	Sandy gravel, granule to pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
570	580	Gravel, pebble-sized gravel; well sorted; angular to subangular; dark greenish gray (10GY 4/1); accessory: chert
580	590	Gravel, pebble-sized gravel; well sorted; angular to rounded; greenish gray (5GY 5/1)
	592.5	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark grayish brown (2.5Y 4/2)
	595.5	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; olive brown (2.5Y 4/3)

Table 4. Lithologic shaker and core logs for Willow (WLLO) (7S/1E-19B2–7) multiple-well monitoring site, Santa Clara County California—Continued

Depth (ft)		Description
From	To	
	598	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/2)
	600	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
600	610	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
610	620	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/3)
	623	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 5/4)
623	630	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/3)
630	640	Gravel, pebble-sized gravel; well sorted; angular to subrounded; dark olive gray (5Y 3/2)
640	650	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/3); accessory: red chert
650	660	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/3); accessory: red chert
660	670	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; olive brown (2.5Y 4/3); accessory: red chert
	673	**CORE:** Silty clay, clay with silt; very well sorted; angular to subrounded; light olive brown (2.5Y 5/3)
	678	**CORE**: Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subangular; light olive brown (2.5Y 5/3)
678	680	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and minor silt; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/3)
680	690	Silty sandy gravel, granule to pebble-sized gravel with very fine to very coarse sand and minor silt; very poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
690	700	Silty sandy gravel, granule to pebble-sized gravel and very fine to very coarse sand and silt; very poorly sorted; angular to rounded; dark grayish brown (2.5Y 4/2)
	708	**CORE**: Sandy silt, silt with very fine sand; very well sorted; angular to subrounded; light olive brown (2.5Y 5/3)
708	720	Silty sandy gravel, granule to pebble-sized gravel and very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 4/3)
720	730	Silty sandy gravel; granule to pebble sized gravel and very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/3)
	738	**CORE**: Sandy silty clay; clay with silt and very fine sand; very well sorted; angular to subrounded; brown (10YR 4/3)
	741	**CORE**: Sandy silty clay; clay with silt and very fine sand; very well sorted; angular to subrounded; olive brown (2,5Y 4/3)
	746	**CORE**: Silty sand; very fine to medium sand with silt; well sorted; angular to subrounded; olive brown (2.5Y 4/3)
	750	**CORE**: Sandy silty clay; clay with silt and very fine to medium silt; well sorted; angular to subrounded; brown (10YR 4/3)
	755	**CORE**: Gravelly silty sand; very fine to very coarse sand with silt and granule to pebble sized gravel; poorly sorted; angular to subrounded; brown (10YR 4/3)
	760	**CORE**: Clayey silty sand; very fine to fine sand with silt and clay; very well sorted; angular to rounded; brown (10YR 4/3)
760	770	Silty sand; very fine to very coarse sand with silt; moderately sorted; angular to rounded; dark grayish brown (10YR 4/2)

Table 4. Lithologic shaker and core logs for Willow (WLLO) (7S/1E-19B2–7) multiple-well monitoring site, Santa Clara County California—Continued

Depth (ft)		Description
From	To	
770	780	Gravelly silty sand; very fine to very coarse sand with silt and granule sized gravel; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3); accessory: Serpentenite
	785	**CORE**: Clayey silty sand; very fine to fine sand with silt and some clay; very well sorted; angular to subrounded; brown (10YR 4/3)
785	790	Silty sandy gravel; granule to pebble sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark grayish brown (2.5Y 4/2)
790	800	Slightly silty sandy gravel; granule to pebble sized gravel with minor very fine to very coarse sand and minor silt; poorly sorted; angular to subrounded; olive gray (5Y 4/2)
800	810	Silty sandy gravel; granule to pebble sized gravel with very fine to very coarse sand and silt; poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
810	820	Sandy silty clay; clay with silt and very fine to very coarse sand; poorly sorted; angular to subrounded; olive gray (5Y 4/2)
820	830	Sandy silt; silty with very fine to very coarse sand; poorly sorted; angular to subrounded; olive gray (5Y 4/2); accessory: red chert
	831	**CORE**: Gravel; granule to pebble sized gravel; well sorted; angular to subangular; greenish-gray (10GY 6/1); Serpentenite with iron stained microfractures
	840.5	**CORE:** Sandy gravel; granule to pebble sized gravel with fine to very coarse sand; well sorted; angular to subangular; light greenish gray (5GY 7/1); Serpentenite with iron stained microfractures
	841	**CORE**: Sandy gravel; granule to pebble sized gravel with fine to very coarse sand; well sorted; angular to subangular; light greenish gray (5GY 7/1); Serpentenite with iron stained microfractures
	841.5	**CORE**: Sandy gravel; granule to pebble sized gravel with fine to very coarse sand; well sorted; angular to subangular; light greenish gray (5GY 7/1); Serpentenite with iron stained microfractures

Table 5. Lithologic shaker and core logs for McGlincey (MGCY) (7S/1W-35L12–16) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 213 ft; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, April 2001; total depth drilled 873 ft; screened intervals 160–180; 280–300; 90–410; 510–530; 630–650 ft; ft, foot]

Depth (ft)		Description
From	To	
0	9	Sandy gravel; granule- to medium pebble-sized gravel with medium to very coarse sand; moderately sorted; subangular to rounded; very dark grayish brown (2.5Y 3/2)
9	14	Sandy gravel; granule- to medium pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; very dark grayish brown (2.5Y 3/2)
14	19	Sandy gravel; granule- to small pebble-sized gravel with medium to very coarse sand; moderately sorted; angular to rounded; dark olive brown (2.5Y 3/3)
19	21	Slightly gravelly sand; medium to very coarse sand with minor granule-sized gravel; well sorted; very angular to subangular; olive gray (5Y 4/2)
21	24	Sandy gravel; granule- to medium pebble-sized gravel with medium to very coarse sand; poorly sorted; subangular to rounded; olive gray (5Y 4/2)
24	29	Gravelly sand; medium to very coarse sand with granule-sized gravel; well sorted; subangular to rounded; olive brown (2.5Y 4/3)
	34	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; olive (5Y 4/4)
	39	**CORE**: Silty sandy gravel; granule- to very large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to rounded; olive (5Y 4/4)
	44	**CORE**: Sandy gravel; granule- to small pebble-sized gravel with coarse to very coarse sand; well sorted; angular to rounded; very dark gray (5Y 3/1)
	46.5	**CORE**: Sandy gravel; granule- to medium pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to rounded; very dark gray (10YR 3/1)
	49	**CORE**: Sandy gravel; granule- to medium pebble-sized gravel with medium to very coarse sand; poorly sorted; angular to subrounded; very dark gray (10YR 3/1)
	54	**CORE**: Silty gravel; granule- to large pebble-sized gravel with some silt; well sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	59	**CORE**: Silty sandy gravel; granule- to very large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
	64	**CORE**: Silty sandy gravel; granule- to very large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
	69	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; dark yellowish brown (10YR 4/4)
69	89	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
89	109	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
109	129	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
	131.5	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	134	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	136.5	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; very dark grayish brown (10YR 3/2
	139	**CORE**: Silty sandy gravel; granule-to medium pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to rounded; olive brown (2.5Y 4/4)
	141.5	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; olive brown (2.5Y 4/4)

Table 5. Lithologic shaker and core logs for McGlincey (MGCY) (7S/1W-35L12–16) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
	149	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 3/6)
	151.5	**CORE**: Silty sand; very fine to fine sand with silt; well sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
	154	**CORE**: Silty sand; very fine to medium sand with silt; well sorted; angular to rounded; olive brown (2.5Y 4/4)
	159	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; brown (10YR 4/3)
	164	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
	169	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; light olive brown (2.5Y 5/4);
169	179	Gravelly sand; very fine to very coarse sand with granule- to small pebble-sized gravel; moderately sorted; angular to subrounded; light olive brown (2.5Y 5/4)
179	189	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to subrounded; light olive brown (2.5Y 5/4)
189	209	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; moderately sorted; angular to subrounded; light olive brown (2.5Y 5/4)
209	219	Sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; light olive brown (2.5Y 5/4)
219	229	Gravelly sand; fine to very coarse sand with granule- to medium pebble-sized gravel; moderately sorted; angular to subrounded; light olive brown (2.5Y 5/4)
	234	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
	239	**CORE**: Silty sandy gravel; granule- to very large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subangular; dark yellowish brown (10YR 4/4); graywacke
	241	**CORE**: Gravel; very large pebble-sized gravel; only one piece; subangular; olive brown (2.5Y 4/3); graywacke
	249	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subangular; light olive brown (2.5Y 5/6); sandstone
	251.5	**CORE**: Slightly gravelly silty sand; mostly very fine to medium sand with silt and minor coarse to very coarse sand and small to medium pebble-sized gravel; moderately sorted; subangular to rounded; dark yellowish brown (10YR 4/6)
251.5	259	Gravelly silty sand; very fine to very coarse sand with silt and some granule-sized gravel; moderately sorted; subangular to rounded; light olive brown (2.5Y 5/6)
259	270	Gravelly silty sand; very fine to very coarse sand with silt and some granule- to small pebble-sized gravel; moderately sorted; subangular to rounded; light olive brown (2.5Y 5/6)
270	280	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; very angular to subrounded; olive brown (2.5Y 4/3)
280	290	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; very angular to subrounded; olive brown (2.5Y 4/3)
290	300	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; very angular to rounded; olive brown (2.5Y 4/3)
300	310	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; very angular to subrounded; olive brown (2.5Y 4/3)
	314	**CORE**: Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
	317.5	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/4); gravel is quartz wacke
	320	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; olive brown (2.5Y 4/4); gravel is graywacke

Table 5. Lithologic shaker and core logs for McGlincey (MGCY) (7S/1W-35L12–16) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft) From	Depth (ft) To	Description
	322.5	**CORE**: Sandy silt; silt with very fine to very coarse sand; well sorted; light olive brown (2.5Y 5/6); white and lime green lithic clast of unknown origin
	325	**CORE**: Sandy silt; silt with very fine to medium sand; well sorted; brown (7.5YR 5/4)
	329	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/4); gravel is wacke
	331	**CORE**: Sandy clayey silt; silt with clay and very fine to medium sand; well sorted; light olive brown (2.5Y 5/6)
	334	**CORE**: Sandy clayey silt; silt with clay and very fine to medium sand; well sorted; light olive brown (2.5Y 5/6)
	339	**CORE**: Sandy clayey silt; silt with clay and very fine to medium sand; well sorted; light olive brown (2.5Y 5/6)
	341.5	**CORE**: Silty sand; very fine to medium sand and silt; well sorted; subangular to rounded; light olive brown (2.5Y 5/6)
341.5	349	Sandy gravel; granule- to small pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
349	359	Sandy gravel; granule- to small pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
359	369	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
369	379	Sandy gravel; granule- to small pebble-sized gravel with very fine to coarse sand; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3)
379	389	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to rounded; olive brown (2.5Y 4/3)
389	399	Sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
399	410	Sandy gravel; granule- to large pebble-sized gravel with medium to very coarse sand; poorly sorted; subangular to subrounded; dark yellowish brown (10YR 4/4)
	412	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; olive brown (2.5Y 4/4)
	414	**CORE**: Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
	419	**CORE**: Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/4); accessory: red chert
	421.5	**CORE**: Slightly gravelly silty sand; very fine to coarse sand with silt and some minor granule- to small pebble-sized gravel; poorly sorted; angular to subrounded; light olive brown (2.5Y 5/4)
	424	**CORE**: Sandy clayey silt; silt with clay and very fine to coarse sand; well sorted; dark yellowish brown (10YR 4/4)
	429	**CORE**: Sandy clayey silt; silt with clay and very fine to medium sand; well sorted; dark yellowish brown (10YR 4/4)
	434	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; light olive brown (2.5Y 5/4)
	436.5	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
	439	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; dark yellowish brown (10YR 4/4); gravel is graywacke
439	449	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; olive brown (2.5Y 4/4)
449	459	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; olive brown (2.5Y 4/4)

Table 5. Lithologic shaker and core logs for McGlincey (MGCY) (7S/1W-35L12–16) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft) From	Depth (ft) To	Description
459	469	Gravelly silt; silt with granule- to small pebble-sized gravel; very poorly sorted; olive brown (2.5Y 4/4)
469	479	Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to subrounded; brown (10YR 4/3)
479	489	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/4)
	491.5	**CORE**: Slightly gravelly silty sand; very fine to very coarse sand with silt and minor granule-sized gravel; moderately sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	494	**CORE**: Slightly gravelly silty sand; very fine to very coarse sand with silt and minor granule-sized gravel; moderately sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	499	**CORE**: Slightly gravelly silty sand; very fine to very coarse sand with silt and minor granule-sized gravel; moderately sorted; angular to rounded; dark yellowish brown (10YR 4/4)
	504	**CORE**: Slightly gravelly silty sand; very fine to very coarse sand with silt and minor granule- to small pebble-sized gravel; moderately sorted; angular to subrounded; dark yellowish brown (10YR 4/4)
	509	**CORE**: Sandy silt; silt with very fine to medium sand; well sorted; dark yellowish brown (10YR 4/4)
	514	**CORE**: Silty sandy gravel; granule- to small and very large pebble-sized gravel with some very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; yellowish brown (10YR 5/4); gravel is graywacke
	519	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to subrounded; brown (10YR 4/3)
	529	**CORE**: Slightly sandy gravel; granule- to medium pebble-sized gravel with minor fine to very coarse sand; very well sorted; angular to rounded; dark olive brown (2.5Y 3/3)
529	539	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to rounded; dark olive brown (2.5Y 3/3)
539	549	Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; brown (10YR 4/3)
549	559	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; brown (10YR 4/3)
559	569	Silty sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; angular to rounded; brown (10YR 4/3)
569	579	Slightly gravelly sandy clayey silt; silt with clay and some very fine to medium sand and granule- to small pebble-sized gravel; poorly sorted; brown (10YR 4/3)
	581.5	**CORE**: Silty sand; very fine to very coarse sand with silt; moderately sorted; subangular to subrounded; dark greenish gray (10Y 4/1)
	584	**CORE**: Sandy silt; silt with very fine to medium sand; well sorted; dark greenish gray (10Y 4/1)
	589	**CORE**: Sandy silty clay; clay with silt and some very fine to medium sand; well sorted; olive gray (5Y 4/2)
	594	**CORE**: Sandy silty clay; clay with silt and some very fine to medium sand; moderately sorted; olive gray (5Y 4/2)
	599	**CORE**: Sandy clayey silt; silt with some clay and very fine to fine sand; well sorted; dark greenish gray (5GY 4/1)
	604	**CORE**: Slightly clayey sandy silt; silt with very fine to medium sand and minor clay; well sorted; dark greenish gray (5GY 4/1)
	609	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; dark greenish gray (10Y 4/1)
	614	**CORE**: Silty sand; very fine to coarse sand with silt; well sorted; subangular to subrounded; dark greenish gray (10Y 3/1)
	619	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; dark greenish gray (10Y 4/1); accessory: packstone
	624	**CORE**: Silty sandy gravel; granule- to large pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; dark greenish gray (10Y 4/1); accessory: red chert
	629	**CORE**: Silty sand; very fine to fine sand with silt; very well sorted; subangular to subrounded; dark greenish gray (10Y 4/1)
	634	**CORE**: Silty sand; very fine to fine sand with silt; very well sorted; subangular to subrounded; dark greenish gray (10Y 4/1)

Table 5. Lithologic shaker and core logs for McGlincey (MGCY) (7S/1W-35L12–16) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft) From	Depth (ft) To	Description
	639	**CORE**: Slightly sandy gravel; granule- to medium pebble-sized gravel with minor very fine to very coarse sand; well sorted; angular to subrounded; dark greenish gray (10Y3/1); accessory: red chert
639	649	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to subrounded; dark greenish gray (10Y3/1)
649	659	Slightly sandy gravel; granule- to medium pebble-sized gravel with minor very fine to very coarse sand; well sorted; angular to rounded; dark greenish gray (10Y 3/1); accessory: red chert
659	669	Sandy gravel; granule- to small pebble-sized gravel with very fine to very coarse sand; poorly sorted; angular to rounded; dark greenish gray (10Y 3/1); accessory: red chert
669	679	Slightly gravelly sand; mainly very fine to medium sand with some coarse to very coarse sand and minor granule-sized gravel; well sorted; angular to rounded; olive (5Y 4/3)
679	689	Silty sandy gravel; granule- to small pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; dark grayish brown (2.5Y 4/2)
689	699	Silty sandy gravel; granule- to small pebble-sized gravel with very fine to very coarse sand and silt; very poorly sorted; subangular to rounded; dark grayish brown (2.5Y 4/2)
	704	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; olive gray (5Y 4/2)
	709	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; dark greenish gray (10Y 4/1)
	714	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; dark greenish gray (10Y 4/1)
	719	**CORE**: Sandy clayey silt; silt with clay and very fine sand; very well sorted; dark greenish gray (10Y 4/1)
	724	**CORE**: Sandy clayey silt; silt with clay and very fine sand; very well sorted; dark greenish gray (10Y 4/1)
	729	**CORE**: Gravel; small to large pebble-sized gravel; very well sorted; angular to subrounded; dark greenish gray (5GY 4/1); metamorphosed serpentenite
729	739	Slightly gravelly sandy silt; silt with very fine to very coarse sand and granule- to small pebble-sized gravel; very poorly sorted; dark greenish gray (10Y 4/1)
739	749	Slightly sandy silty gravel; granule- to medium pebble-sized gravel with silt and minor very fine to fine sand; moderately sorted; subangular to rounded; dark grayish brown (2.5Y 4/2)
749	759	Sandy silty clay; clay with silt and very fine to very coarse sand; very poorly sorted; olive gray (5Y 4/2)
759	769	Sandy gravel; granule- to medium pebble-sized gravel with fine to very coarse sand; poorly sorted; angular to subrounded; dark grayish brown (2.5Y 4/2)
	774	**CORE**: Gravelly sand; very fine to coarse sand with some granule- to medium pebble-sized gravel; well sorted; angular to subrounded; greenish gray (10Y 5/1); accessory: red chert
	779	**CORE**: Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to rounded; dark greenish gray (10Y 4/1); accessory: red chert
779	784	Sandy gravel; granule- to medium pebble-sized gravel with very fine to very coarse sand; very poorly sorted; angular to rounded; dark greenish gray (10Y 4/1)
	789	**CORE**: Silty sand; very fine to medium sand with silt; well sorted; subangular to subrounded; olive (5Y 5/4)
	794	**CORE**: Clayey silty sand; very fine to fine sand with silt and some clay; well sorted; subangular to subrounded; olive (5Y 5/3)
794	809	Slightly gravelly sandy silty clay; clay with silt and very fine to very coarse sand and minor granule-sized gravel; very poorly sorted; olive gray (5Y 4/2)
809	819	Silty clay; clay with silt; very well sorted; dark olive gray (5Y 3/2)
819	829	Silty clay; clay with silt; very well sorted; dark olive gray (5Y 3/2)
	831.5	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; black (5Y 2.5/1)
831.5	839	Sandy silt; silt with very fine to fine sand; very well sorted; very dark gray (5Y 3/1)
839	849	Sandy silt; silt with very fine to fine sand; very well sorted; very dark gray (5Y 3/1)
	852.5	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; very dark gray (5Y 3/1); accessory: fibrous serpentinite
	869	**CORE**: Sandy silt; silt with very fine to fine sand; very well sorted; very dark gray (5Y 3/1); accessory: fibrous serpentinite

Table 6. Lithologic shaker logs for Santana Park (STPK) (7S/1W-14P1–5) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 143 ft; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, April 2001; total depth drilled 1,000 ft; screened intervals 130–150; 340–360; 420–440; 540–560; 680–700 ft; ft, foot; <, less than; mm, millimeter]

Depth (ft)		Description
From	To	
0	10	Silty clay; clay and silt; well sorted; dark olive brown (2.5Y 3/3)
10	20	Gravelly silty clay; clay and silt with granules and pebbles; moderately sorted; pebbles are <8 mm in diameter; dark olive brown (2.5Y 3/3)
20	30	Gravelly silty clay; clay and silt with granules and pebbles; moderately sorted; pebbles are <8 mm in diameter; olive brown (2.5Y 4/3)
30	40	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; very dark grayish brown (2.5Y 3/2)
40	50	Sandy gravel; granules and pebbles with coarse and very coarse sand; moderately sorted; subangular; pebbles are <8 mm in diameter; very dark grayish brown (2.5Y 3/2)
50	60	Sandy gravel; granules and pebbles with coarse and very coarse sand; moderately sorted; subangular to subrounded; pebbles are <8 mm in diameter; very dark grayish brown (2.5Y 3/2)
60	70	Sandy gravel; granules and pebbles with very coarse sand; moderately sorted; subangular; pebbles are <12 mm in diameter; very dark grayish brown (2.5Y 3/2)
70	80	Clayey gravel; pebbles with some clay; well sorted; subrounded; pebbles are <25 mm in diameter; olive gray (5Y 5/2)
80	90	Clayey gravel; pebbles with some clay; well sorted; subrounded; pebbles are <15 mm in diameter; olive gray (5Y 5/2)
90	100	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; subangular; pebbles are <12 mm in diameter; very dark grayish brown (2.5Y 3/2)
100	110	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; subangular; pebbles are <12 mm in diameter; very dark grayish brown (2.5Y 3/2)
110	120	Gravel; granules and pebbles; well sorted; subrounded; pebbles are <20 mm in diameter; olive brown (2.5Y 4/3)
120	130	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <15 mm in diameter; very dark grayish brown (2.5Y 3/2)
130	140	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <15 mm in diameter; very dark grayish brown (2.5Y 3/2)
140	150	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; subrounded; pebbles are <15 mm in diameter; very dark grayish brown (2.5Y 3/2)
150	160	Sandy gravel; granules and pebbles with some coarse to very coarse sand; moderately sorted; subrounded; pebbles are <20 mm in diameter; very dark grayish brown (2.5Y 3/2)
160	170	Sandy gravel; granules and pebbles with some coarse to very coarse sand; moderately sorted; subrounded; pebbles are <25 mm in diameter; very dark grayish brown (2.5Y 3/2)
170	180	Sandy gravel; granules and pebbles with some coarse to very coarse sand; moderately sorted; subrounded; pebbles are <25 mm in diameter; very dark grayish brown (2.5Y 3/2)
180	190	Gravel; pebbles and granules; well sorted; subrounded to rounded; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/4)
190	209	Gravel; pebbles and granules; well sorted; subrounded; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/4)
209	214	Silty gravel; granules and pebbles with silt; moderately sorted; subrounded; pebbles are <10 mm in diameter; pale yellow (2.5Y 7/4)
214	224	No sample collected
224	229	Silty clayey gravel; granules and pebbles with silt and clay; moderately sorted; subrounded; pebbles are <8 mm in diameter; pale yellow (2.5Y 7/4)
229	234	Sandy silt; silt to very fine sand; well sorted; pale yellow (2.5Y 7/4)
234	239	Sandy silt; silt to very fine sand; well sorted; pale yellow (2.5Y 7/4)
239	244	Sandy silt; silt to very fine sand; well sorted; pale yellow (2.5Y 7/4)
244	249	Sandy silt; silt to very fine sand; well sorted; pale yellow (2.5Y 7/4)
249	254	Silty sand; silt to medium sand; moderately sorted; subrounded; pale yellow (2.5Y 7/4)

Table 6. Lithologic shaker logs for Santana Park (STPK) (7S/1W-14P1–5) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
254	259	Gravelly silty sand; fine to very coarse sand with silt and granules to pebbles; poorly sorted; subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
259	269	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; subangular; pebbles are <20 mm in diameter; olive brown (2.5Y 4/3)
269	279	Gravelly silty sand; coarse to very coarse sand with silt and granules; moderately sorted; subrounded; light yellowish brown (2.5Y 6/4)
279	289	Silty sandy gravel; pebbles and granules with silt and very coarse sand; moderately sorted; subrounded; pebbles are <20 mm in diameter; light yellowish brown (2.5Y 6/4)
289	299	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/3)
299	309	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
309	319	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
319	324	No sample collected
324	329	Gravelly silty sand; very fine to very coarse sand with silt and granules to pebbles; very poorly sorted; subangular; pebbles are <30 mm in diameter; light olive brown (2.5Y 5/4)
329	334	Silty sandy gravel; granules and pebbles with silt to medium sand; poorly sorted; subrounded; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/4)
334	349	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular to subrounded; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
349	359	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
359	369	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
369	379	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; angular to subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
379	384	Gravel; granules and pebbles; well sorted; subangular to subrounded; pebbles are <25 mm in diameter; light olive brown (2.5Y 5/3)
384	389	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular; pebbles are <30 mm in diameter; light olive brown (2.5Y 5/3)
389	399	Gravelly silty sand; very fine to very coarse sand with silt and granules and pebbles; very poorly sorted; angular to subangular; pebbles are <8 mm in diameter; light yellowish brown (2.5Y 6/4)
399	409	Sandy gravel; granules and pebbles with some coarse to very coarse sand; moderately sorted; angular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
409	419	Gravelly sand; coarse sand to pebbles; moderately sorted; angular to subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
419	429	Gravel; pebbles and granules; well sorted; angular to subangular; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/3)
429	439	Gravelly sand; coarse to very coarse sand with granules and pebbles; moderately sorted; angular to subangular; pebbles are <10 mm in diameter; yellowish brown (10YR 5/4)
439	449	Gravel; pebbles and granules; well sorted; subangular to subrounded; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
449	454	No sample collected
454	464	Silty sand; very fine to fine sand with silt; moderately sorted; subangular; yellowish brown (10YR 5/4)
464	469	Gravelly sand; fine to very coarse sand with granules; moderately sorted; angular to subangular; light olive brown (2.5Y 5/4)
469	479	Sandy gravel; granules and pebbles with very coarse sand; moderately sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)

Table 6. Lithologic shaker logs for Santana Park (STPK) (7S/1W-14P1–5) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
479	489	Silty gravel; granules and pebbles with some silt; moderately sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
489	499	Silty sandy gravel; granules and pebbles with coarse to very coarse sand and silt; moderately sorted; subangular; pebbles are <15 mm in diameter; light yellowish brown (2.5Y 6/4)
499	509	Silty sandy gravel; granules and pebbles with coarse to very coarse sand and silt; moderately sorted; angular; pebbles are <10 mm in diameter; light yellowish brown (2.5Y 6/4)
509	519	Sandy silt; silt with fine to very coarse sand; moderately sorted; light yellowish brown (2.5Y 6/4)
519	529	Gravelly silty sand; very fine to very coarse sand with granules to pebbles and silt; very poorly sorted; angular; pebbles are <8 mm in diameter; light yellowish brown (2.5Y 6/4)
529	539	Gravelly sand; medium to very coarse sand with granules and pebbles; moderately sorted; angular to subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
539	549	Sandy gravel; pebbles and granules with very coarse sand; moderately sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
549	559	Sandy gravel; pebbles and granules with very coarse sand; moderately sorted; subangular; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/3)
559	569	Silty sandy gravel; granules and pebbles with very coarse sand and silt; moderately sorted; subrounded; pebbles are <8 mm in diameter; light yellowish brown (2.5Y 6/4)
569	579	Sandy silt; silt with some very coarse sand; well sorted; light yellowish brown (2.5Y 6/4)
579	584	Sandy silt; silt with some very coarse sand; well sorted; light yellowish brown (2.5Y 6/4)
584	589	Sandy gravel; pebbles and granules with medium to very coarse sand; moderately sorted; subangular; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/3)
589	594	Silty sandy gravel; granules and pebbles with silt and very fine to very coarse sand; very poorly sorted; subangular; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/3)
594	604	Gravelly silty sand; coarse sand to pebbles with silt; moderately sorted; subangular; pebbles are <8 mm in diameter; light yellowish brown (2.5Y 6/4)
604	609	Gravelly silty sand; coarse sand to pebbles with silt; moderately sorted; angular to subangular; pebbles are <8 mm in diameter; light yellowish brown (2.5Y 6/4)
609	619	Gravelly silty sand; medium sand to pebbles with silt; poorly sorted; subangular; pebbles are <15 mm in diameter; yellowish brown (10YR 5/4)
619	624	Gravelly silty sand; medium sand to pebbles with silt; poorly sorted; subangular; pebbles are <15 mm in diameter; light yellowish brown (2.5Y 6/4)
624	629	No sample collected
629	639	Gravelly sand; coarse sand to pebbles; moderately sorted; angular to subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
639	649	Gravelly sand; coarse sand to pebbles; moderately sorted; angular to subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
649	659	Gravelly silty sand; coarse sand to pebbles with silt; moderately sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
659	669	Sandy silt; silt and very fine sand; well sorted; light yellowish brown (2.5Y 6/4)
669	679	Silty sandy gravel; granules and pebbles with very coarse sand and silt; moderately sorted; subangular; pebbles are <25 mm in diameter; light olive brown (2.5Y 5/3)
679	684	Silty sandy gravel; granules and pebbles with medium to very coarse sand and silt; poorly sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
684	689	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; angular to subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
689	699	Gravelly sand; fine sand to pebbles; poorly sorted; angular to subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
699	709	Gravelly silty sand; coarse sand to pebbles with silt; moderately sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
709	714	No sample collected
714	719	Slightly gravelly sandy silt; silt with coarse sand to granules; moderately sorted; light yellowish brown (2.5Y 6/4)

Table 6. Lithologic shaker logs for Santana Park (STPK) (7S/1W-14P1–5) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
719	726.5	Sandy silt; silt and very fine sand; well sorted; light yellowish brown (2.5Y 6/4)
726.5	729	No sample collected
729	739	Gravelly sand; coarse sand to granules; moderately sorted; subangular; light olive brown (2.5Y 5/3)
739	749	Gravelly silty sand; medium sand to pebbles with silt; poorly sorted; angular to subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
749	759	Gravelly silty sand; medium sand to granules with silt; moderately sorted; subangular; light olive brown (2.5Y 5/3)
759	764	No sample collected
764	769	Silty sandy gravel; granules and pebbles with medium to very coarse sand and silt; poorly sorted; pebbles are <25 mm in diameter; light olive brown (2.5Y 5/3)
769	774	Sandy silt; silt with very fine to medium sand; moderately sorted; light yellowish brown (2.5Y 6/4)
774	779	Sandy silt; silt with very fine sand; well sorted; light yellowish brown (2.5Y 6/4)
779	789	Sandy clay; clay with coarse to very coarse sand; moderately sorted; brown (10YR 4/3)
789	799	Clayey sand; coarse to very coarse sand with some clay; moderately sorted; subrounded; olive brown (2.5Y 4/3)
799	804	Sandy silt; silt and very fine sand; well sorted; yellowish brown (10YR 5/4)
804	809	Gravelly silty sand; medium sand to pebbles with silt; poorly sorted; angular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
809	819	Silty sand; coarse to very coarse sand with silt; moderately sorted; angular; light olive brown (2.5Y 5/4)
819	831.5	No sample collected
831.5	837.5	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subrounded; pebbles are <25 mm in diameter; light olive brown (2.5Y 5/3)
837.5	849	Gravelly clayey sand; coarse sand to granules with clay; moderately sorted; subangular; olive brown (2.5Y 4/3)
849	859	Sandy clay; clay with medium to very coarse sand; moderately sorted; light olive brown (2.5Y 5/4)
859	869	Sandy clay; clay with medium to very coarse sand; moderately sorted; olive brown (2.5Y 4/4)
869	874	Sandy silt; silt and very fine sand; well sorted; light yellowish brown (2.5Y 6/4)
874	878	Clayey silt; silt and clay; well sorted; light olive brown (2.5Y 5/3)
878	889	Silty sand; coarse to very coarse sand with silt; moderately sorted; subrounded; light olive brown (2.5Y 5/3)
889	899	Sandy clay; clay with coarse to very coarse sand; moderately sorted; olive brown (2.5Y 4/3)
899	909	Clayey sand; coarse to very coarse sand with clay; moderately sorted; subrounded; olive brown (2.5Y 4/3)
909	919	Gravelly silty sand; fine sand to granules with silt; moderately sorted; subangular; light olive brown (2.5Y 5/3)
919	924	Clayey silt; silt and clay; well sorted; yellowish brown (10YR 5/4)
924	929	Sandy silt; silt and very fine sand; well sorted; light olive brown (2.5Y 5/3)
929	939	Silty sand; coarse to very coarse sand with silt; moderately sorted; angular to subangular; light olive brown (2.5Y 5/3)
939	949	Silty sand; coarse to very coarse sand with silt; moderately sorted; angular to subangular; light olive brown (2.5Y 5/3)
949	959	Gravelly silty sand; medium sand to granules with silt; moderately sorted; subangular; light olive brown (2.5Y 5/3)
959	969	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
969	979	Gravelly sand; coarse sand to granules; moderately sorted; angular to subangular; light olive brown (2.5Y 5/3)
979	989	Gravelly sand; coarse sand to granules; moderately sorted; angular to subangular; light olive brown (2.5Y 5/3)
989	996.5	Silty sandy gravel; granules and pebbles with medium to very coarse sand and silt; poorly sorted; subangular; pebbles are <20 mm in diameter; light olive brown (2.5Y 5/3)
996.5	1,000	Silt; silt; very well sorted; light yellowish brown (2.5Y 6/4)

Table 7. Lithologic core logs for Guadalupe (GUAD) (6S/1W-26Q1–4) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 33 ft; depth is in feet below land surface; drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, August–September 2002; total depth drilled 1,370 ft; screened intervals—310–330; 440–460; 580–600; 810–830 ft; ft, foot; bls, below land surface; cm, centimeter; v, very; *, total length of core recovered may be greater than 100 percent]

Core ID (site-core #-section)	Top of core interval (ft bls)	Bottom of core interval (ft bls)	Total core-interval length (ft)	Total length of recovery (cm)	Total length of core recovered (in percent)*	Description
GUAD-1C-1	9.0	14.0	5.0	143.0	94	Clay
GUAD-2C-1	14.0	19.0	5.0	112.5	74	V. coarse, gravelly
GUAD-3C-1	19.0	24.0	5.0	73.0	48	Gravel
GUAD-4C-1	24.0	29.0	5.0	128.0	84	Medium sand
GUAD-5C-1	29.0	34.0	5.0	136.0	89	Clayey silt
GUAD-6C-1	34.0	39.0	5.0	110.0	72	Clay
GUAD-7C-1	39.0	44.0	5.0	90.5	59	Clay
GUAD-8C-1	44.0	49.0	5.0	92.0	60	Silty sand
GUAD-9C-1	49.0	54.0	5.0	23.5	15	Sandy clay
GUAD-10C-1	54.0	59.0	5.0	.0	0	No recovery
GUAD-11C-1	59.0	64.0	5.0	.0	0	No recovery
GUAD-12C-1	64.0	69.0	5.0	8.0	5	Sandy gravel
GUAD-13C-1	69.0	74.0	5.0	66.0	43	Sandy clay with some gravel
GUAD-14C-1	74.0	79.0	5.0	83.5	55	Clayey sandy gravel
GUAD-15C-1	79.0	84.0	5.0	24.0	16	Loose sand (soupy)
GUAD-16C-1	84.0	89.0	5.0	87.5	57	Clay
GUAD-17C-2	89.0	89.5	.5	16.0	100	Section 2: clay
GUAD-17C-1	89.5	94.0	4.5	125.0	92	Clay
GUAD-18C-1	89.0	94.0	5.0	125.0	82	Clay
GUAD-19C-1	99.0	104.0	5.0	.0	0	No recovery
GUAD-20C-1	104.0	109.0	5.0	104.5	69	Clay
GUAD-21C-1	109.0	114.0	5.0	160.0	105	Clay
GUAD-22C-1	114.0	119.0	5.0	157.0	103	Clay
GUAD-23C-1	119.0	124.0	5.0	62.5	41	Clay
GUAD-24C-1	124.0	129.0	5.0	49.0	32	Sand
GUAD-25C-1	129.0	134.0	5.0	113.5	74	Gravelly silty sand
GUAD-26C-1	134.0	139.0	5.0	103.5	68	Sandy clay
GUAD-27C-1	139.0	144.0	5.0	91.5	60	Clay
GUAD-28C-1	144.0	149.0	5.0	116.0	76	Clay
GUAD-29C-1	149.0	154.0	5.0	.0	0	No recovery
GUAD-30C-1	154.0	159.0	5.0	164.0	108	Clay
GUAD-31C-1	159.0	164.0	5.0	135.0	89	Mottled blue clay
GUAD-32C-1	164.0	169.0	5.0	135.0	89	Medium grain moderately sorted sand
GUAD-33C-1	169.0	173.1	4.1	125.0	100	Silty clay
GUAD-33C-2	173.1	174.0	.9	25.0	91	V. fine silty sand
GUAD-34C-1	174.0	179.0	5.0	481.0	316	Well sorted v. fine sand
GUAD-35C-1	179.0	184.0	5.0	158.0	104	Clay
GUAD-36C-1	184.0	189.0	5.0	134.0	88	Silty sand
GUAD-37C-1	189.0	194.0	5.0	40.0	26	Blue clay
GUAD-38C-1	194.0	199.0	5.0	.0	0	No recovery
GUAD-39C-1	199.0	204.0	5.0	103.0	68	Coarse silty sand
GUAD-40C-1	204.0	209.0	5.0	95.0	62	Clay
GUAD-41C-1	209.0	214.0	5.0	38.0	25	Fine silty sand

Table 7. Lithologic core logs for Guadalupe (GUAD) (6S/1W-26Q1–4) multiple-well monitoring site, Santa Clara County, California—Continued

Core ID (site-core #-section)	Top of core interval (ft bls)	Bottom of core interval (ft bls)	Total core-interval length (ft)	Total length of recovery (cm)	Total length of core recovered (in percent)*	Description
GUAD-42C-1	214.0	219.0	5.0	97.0	64	V. fine silty sand
GUAD-43C-1	219.0	224.0	5.0	66.0	43	Clayey sand with wood
GUAD-44C-1	224.0	229.0	5.0	119.0	78	Gravel
GUAD-45C-1	229.0	234.0	5.0	.0	0	No recovery
GUAD-46C-1	234.0	236.2	2.5	66.0	100	Silty sand to silt
GUAD-46C-2	236.2	239.0	2.5	120.0	139	Gravelly coarse sand
GUAD-47C-1	239.0	244.0	5.0	42.0	28	Gravelly sand
GUAD-48C-1	244.0	249.0	5.0	26.0	17	No entry
GUAD-49C-1	249.0	254.0	5.0	99.5	65	Clayey silt
GUAD-50C-1	254.0	259.0	5.0	143.5	94	Fine sand-silt
GUAD-51C-1	259.0	264.0	5.0	97.0	64	Fine to coarse
GUAD-52C-1	264.0	269.0	5.0	.0	0	Shaker: coarse sand-small pebbles
GUAD-53C-1	269.0	274.0	5.0	117.5	77	Clay
GUAD-54C-1	274.0	279.0	5.0	160.0	105	Clay
GUAD-55C-1	279.0	284.0	5.0	81.5	53	Clay
GUAD-56C-1	284.0	289.0	5.0	155.5	102	Clay
GUAD-57C-1	289.0	294.0	5.0	88.5	58	V. fine silty sand
GUAD-58C-1	294.0	299.0	5.0	.0	0	No recovery
GUAD-59C-1	299.0	304.0	5.0	123.5	81	Silt
GUAD-60C-1	304.0	309.0	5.0	111.5	73	Silty clay
GUAD-61C-1	309.0	314.0	5.0	89.5	59	Silt (14 cm liner added to shoe)
GUAD-62C-1	314.0	319.0	5.0	108.5	71	Gravelly clay
GUAD-63C-1	319.0	324.0	5.0	.0	0	Gravel on shaker
GUAD-64C-1	324.0	329.0	5.0	163.0	107	Clay (liner reconstructed)
GUAD-65C-1	329.0	334.0	5.0	107.0	70	Clay
GUAD-66C-1	334.0	339.0	5.0	149.5	98	Silt-vf sand
GUAD-67C-1	339.0	344.0	5.0	83.5	55	Gravelly clay
GUAD-68C-1	344.0	349.0	5.0	72.0	2	Clayey silty gravel
GUAD-69C-1	349.0	354.0	5.0	.0	0	No recovery
GUAD-70C-1	354.0	359.0	5.0	161.0	106	Clay
GUAD-71C-1	359.0	364.0	5.0	96.0	63	Silt to gravel
GUAD-72C-1	364.0	369.0	5.0	45.0	30	Silt to gravel
GUAD-73C-1	369.0	374.0	5.0	63.0	41	Sandy silty clay
GUAD-74C-1	374.0	376.9	2.9	88.0	100	No liner in barrel
GUAD-74C-2	376.9	379.0	2.1	80.0	124	Clay
GUAD-75C-1	379.0	384.0	5.0	107.0	70	Silt to fine
GUAD-76C-1	384.0	389.0	5.0	64.5	42	Silt to fine sand
GUAD-77C-1	389.0	394.0	5.0	161.0	106	Silty clay
GUAD-78C-1	394.0	399.0	5.0	8.0	5	No entry
GUAD-79C-1	399.0	404.0	5.0	152.0	100	Silty very fine–fine sand
GUAD-80C-1	404.0	409.0	5.0	75.5	50	Clayey gravel
GUAD-81C-1	409.0	414.0	5.0	75.5	50	No entry
GUAD-82C-1	414.0	419.0	5.0	120.5	79	Blue clay
GUAD-83C-1	419.0	424.0	5.0	75.5	50	Med gr. sand, light brown

Table 7. Lithologic core logs for Guadalupe (GUAD) (6S/1W-26Q1–4) multiple-well monitoring site, Santa Clara County, California—Continued

Core ID (site-core #-section)	Top of core interval (ft bls)	Bottom of core interval (ft bls)	Total core-interval length (ft)	Total length of recovery (cm)	Total length of core recovered (in percent)*	Description
GUAD-84C-1	424.0	429.0	5.0	.0	0	No recovery
GUAD-85C-1	429.0	434.0	5.0	140.0	92	Bluish gray clayey silt (not clay)
GUAD-86C-1	434.0	439.0	5.0	.0	0	No recovery
GUAD-87C-1	439.0	444.0	5.0	25.5	17	No recovery
GUAD-88C-1	444.0	449.0	5.0	136.0	89	Orange-brown clay
GUAD-89C-1	449.0	454.0	5.0	69.0	45	Med-coarse sand with gravel
GUAD-90C-1	454.0	459.0	5.0	62.5	41	Coarse sand and gravel
GUAD-91C-1	459.0	464.0	5.0	.0	0	No recovery shaker: coarse sand
GUAD-92C-1	464.0	469.0	5.0	75.0	49	Gray-brown clay
GUAD-93C-1	469.0	474.0	5.0	156.5	103	Blue clay w/ fine sand
GUAD-94C-1	474.0	479.0	5.0	94.0	62	No entry
GUAD-95C-1	479.0	484.0	5.0	151.0	99	Silty clay
GUAD-96C-1	484.0	489.0	5.0	159.0	104	V. fine sandy silt
GUAD-97C-1	489.0	494.0	5.0	154.0	101	Med sand
GUAD-98C-1	494.0	499.0	5.0	156.5	103	Blue clay
GUAD-99C-1	499.0	504.0	5.0	146.0	96	Blue clay
GUAD-100C-1	504.0	509.0	5.0	45.0	30	Fine to med sand
GUAD-101C-1	509.0	509.8	.8	25.0	100	
GUAD-101C-2	509.8	514.0	4.2	20.0	16	Green clay
GUAD-102C-1	514.0	519.0	5.0	129.0	85	Mottled blue green clay
GUAD-103C-1	519.0	524.0	5.0	153.0	100	Mottled blue clay
GUAD-104C-1	524.0	529.0	5.0	123.0	81	Grayish brown clay
GUAD-105C-1	529.0	534.0	5.0	89.0	58	Blue clay
GUAD-106C-1	534.0	539.0	5.0	101.0	66	V. fine sand
GUAD-107C-1	539.0	544.0	5.0	89.0	58	Yellow gray clay
GUAD-108C-1	544.0	549.0	5.0	61.0	40	Brown gravelly clay
GUAD-109C-1	549.0	554.0	5.0	95.0	62	Brown gravelly sand
GUAD-110C-1	554.0	559.0	5.0	85.0	56	Brown gravelly clay
GUAD-111C-1	559.0	564.0	5.0	92.0	60	No entry
GUAD-112C-1	564.0	569.0	5.0	68.5	75	Green-gray clay
GUAD-113C-1	569.0	574.0	5.0	39.0	26	Light green hard clay – serpentinite
GUAD-114C-1	574.0	579.0	5.0	131.0	86	Green-gray clay
GUAD-115C-1	579.0	584.0	5.0	41.5	27	Dark green-brown sandy clay and tuff clasts
GUAD-116C-1	584.0	589.0	5.0	125.0	82	Fine–medium sand with clay, sparsegravel
GUAD-117C-1	589.0	594.0	5.0	83.0	54	Sandy gravel
GUAD-118C-1	594.0	599.0	5.0	.0	0	No recovery
GUAD-119C-1	599.0	604.0	5.0	92.5	61	Dark gray sandy clay
GUAD-120C-1	604.0	609.0	5.0	.0	0	No recovery
GUAD-121C-1	609.0	614.0	5.0	158.5	104	Dark green gray clay
GUAD-122C-1	614.0	619.0	5.0	148.5	97	Green clay
GUAD-123C-1	619.0	624.0	5.0	134.0	88	Silt
GUAD-124C-1	624.0	629.0	5.0	159.0	104	Green clay with white clasts
GUAD-125C-1	629.0	634.0	5.0	134.0	88	V. fine silty sand
GUAD-126C-1	634.0	639.0	5.0	152.0	100	Clay
GUAD-127C-1	639.0	644.0	5.0	142.5	94	Greenish clay

Table 7. Lithologic core logs for Guadalupe (GUAD) (6S/1W-26Q1–4) multiple-well monitoring site, Santa Clara County, California—Continued

Core ID (site-core #-section)	Top of core interval (ft bls)	Bottom of core interval (ft bls)	Total core-interval length (ft)	Total length of recovery (cm)	Total length of core recovered (in percent)*	Description
GUAD-128C-1	644.0	649.0	5.0	114.0	75	Brown clay
GUAD-129C-1	649.0	654.0	5.0	159.0	104	Brown gravelly clay
GUAD-130C-1	654.0	659.0	5.0	81.5	53	Brown gravelly sand
GUAD-131C-1	659.0	664.0	5.0	127.5	84	Gravelly clay
GUAD-132C-1	664.0	669.0	5.0	95.0	62	Gravelly sand
GUAD-133C-1	669.0	674.0	5.0	39.5	26	Coarse gravelly sand
GUAD-134C-1	674.0	679.0	5.0	129.0	85	Greenish clay
GUAD-135C-1	679.0	684.0	5.0	122.0	80	Silty clay
GUAD-136C-1	684.0	689.0	5.0	113.0	74	Clayey silt
GUAD-137C-1	689.0	694.0	5.0	160.0	105	Gray clayey silt
GUAD-138C-1	694.0	699.0	5.0	137.0	90	Gray silty sand
GUAD-139C-1	699.0	704.0	5.0	150.0	98	Gray clay
GUAD-140C-1	704.0	709.0	5.0	105.0	69	Brown clay
GUAD-141C-1	709.0	714.0	5.0	61.0	40	Coarse sand to granules
GUAD-142C-1	714.0	719.0	5.0	120.5	79	Silty clay
GUAD-143C-1	719.0	722.0	3.0	57.0	62	Clay
GUAD-144C-1	722.0	724.0	2.0	62.5	103	Silty clay
GUAD-145C-1	724.0	729.0	5.0	71.0	47	No shoe sample
GUAD-146C-1	729.0	734.0	5.0	30.5	20	No shoe sample
GUAD-147C-1	734.0	739.0	5.0	30.0	20	Sandy granules
GUAD-148C-1	739.0	741.5	2.5	50.0	66	Clay
GUAD-149C-1	741.5	744.0	2.5	79.5	52	Clayey silt
GUAD-150C-1	744.0	749.0	5.0	148.5	97	No entry
GUAD-151C-1	749.0	754.0	5.0	149.0	98	Gravelly clay
GUAD-152C-1	754.0	759.0	5.0	159.0	104	Silty clay
GUAD-153C-1	759.0	764.0	5.0	108.0	71	Silty clay
GUAD-154C-1	764.0	769.0	5.0	.0	0	No recovery
GUAD-155C-1	769.0	774.0	5.0	160.5	105	Dark brown clayey silt
GUAD-156C-1	774.0	779.0	5.0	28.5	19	No entry
GUAD-157C-1	779.0	784.0	5.0	136.5	90	No entry
GUAD-158C-1	784.0	789.0	5.0	.0	0	No recovery
GUAD-159C-1	789.0	794.0	5.0	159.5	105	Silt
GUAD-160C-2	794.0	797.6	3.6	110.0	100	
GUAD-160C-1	797.6	799.0	1.4	29.5	70	Silt [core hanging below shoe]
GUAD-161C-1	799.0	804.0	5.0	128.5	84	Gravelly clay
GUAD-162C-1	804.0	809.0	5.0	99.0	65	No shoe sample
GUAD-163C-1	809.0	814.0	5.0	92.0	60	Medium sand and granules
GUAD-164C-1	814.0	819.0	5.0	58.5	38	Medium to coarse sand and granules
GUAD-165C-1	819.0	824.0	5.0	74.0	49	Brown clay
GUAD-166C-1	824.0	829.0	5.0	118.0	77	Gray silty clay
GUAD-167C-1	829.0	834.0	5.0	23.0	15	Gray-green pebbly silt
GUAD-168C-1	834.0	839.0	5.0	97.2	64	Gray clay
GUAD-169C-1	839.0	844.0	5.0	109.5	72	Gray silty clay
GUAD-170C-1	844.0	849.0	5.0	137.5	90	Dark gray clay

Table 7. Lithologic core logs for Guadalupe (GUAD) (6S/1W-26Q1–4) multiple-well monitoring site, Santa Clara County, California—Continued

Core ID (site-core #-section)	Top of core interval (ft bls)	Bottom of core interval (ft bls)	Total core-interval length (ft)	Total length of recovery (cm)	Total length of core recovered (in percent)*	Description
GUAD-171C-1	849.0	854.0	5.0	115.0	75	Gray clay
GUAD-172C-1	854.0	859.0	5.0	56.5	37	Gray clay
GUAD-173C-1	859.0	864.0	5.0	158.0	104	Hard gray clay
GUAD-174C-1	864.0	869.0	5.0	28.5	19	Dense-hard gray clay
GUAD-175C-1	869.0	874.0	5.0	138.5	91	Dense stiff gray clay
GUAD-176C-1	874.0	879.0	5.0	143.5	94	Brown clay
GUAD-177C-1	879.0	884.0	5.0	102.0	67	No entry
GUAD-178C-1	884.0	889.0	5.0	107.5	71	Brown silty sand
GUAD-179C-1	889.0	894.0	5.0	154.0	101	Brown-gray interbedded sands
GUAD-180C-1	894.0	899.0	5.0	155.5	102	Gray sand
GUAD-181C-1	899.0	904.0	5.0	107.5	71	Gray sand
GUAD-182C-1	904.0	909.0	5.0	121.0	79	Dark gray silty sand
GUAD-183C-1	909.0	914.0	5.0	158.5	104	Dark gray sand with pebbles, wood fragments
GUAD-184C-1	914.0	919.0	5.0	153.5	101	Gray med sandy clay
GUAD-185C-1	919.0	924.0	5.0	64.5	42	Gray sand
GUAD-186C-1	924.0	929.0	5.0	137.0	90	Gray sandy clay
GUAD-187C-1	929.0	934.0	5.0	157.5	103	Med gray sand
GUAD-188C-1	934.0	939.0	5.0	94.0	62	Gray-green silty sand | grayish-white carbonite with fossils
GUAD-189C-1	939.0	941.5	2.5	8.0	11	Blue-gray marl
GUAD-190C-1	941.5	944.0	2.5	.0	0	No recovery
GUAD-191C-1	944.0	945.0	1.0	5.0	17	Brown clay
GUAD-192C-1	949.0	954.0	5.0	160.0	106	Fine-med brown sand
GUAD-193C-1	954.0	959.0	5.0	128.0	85	Dark gray ductile clay, medium sand bottom liner
GUAD-194C-1	959.0	964.0	5.0	130.0	86	Dark grayish green sandy clay
GUAD-195C-1	964.0	969.0	5.0	125.0	83	Dark gray sandy clay
GUAD-196C-1	969.0	974.0	5.0	160.0	106	Dark greenish gray clay
GUAD-197C-1	974.0	979.0	5.0	118.0	78	Sandy silty clay with chert pebbles
GUAD-198C-1	979.0	984.0	5.0	158.0	104	Dark gray clay
GUAD-199C-1	984.0	989.0	5.0	103.0	68	Gray sandy clay
GUAD-200C-1	989.0	994.0	5.0	66.0	44	Brown clay
GUAD-201C-1	994.0	999.0	5.0	85.0	56	Brown clay
GUAD-202C-1	999.0	1,004.0	5.0	15.0	10	Hard greenish clay

Table 8. Lithologic shaker logs for Eleanor Park (ELNR) (5S/3W-36P2–5) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 23 ft; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, April 2001; total depth drilled 932 ft; screened intervals 180–200; 540–560; 720–740; 830–850 ft; ft, feet; <, less than; mm, millimeter]

Depth (ft)		Description
From	To	
0	10	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; black (10YR2/1)
10	20	No sample collected
20	30	Gravelly sand; coarse sand to granules; moderately sorted; subrounded to rounded; olive brown (2.5Y 4/3)
30	40	No sample collected
40	50	No sample collected
50	60	No sample collected
60	70	Silty clay; clay and silt; well sorted; dark grayish brown (2.5Y 4/2)
70	80	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <15 mm in diameter; olive gray (5Y 4/2)
80	90	Silty clay; clay and silt; well sorted; olive gray (5Y 4/2)
90	100	Silty clay; clay and silt; well sorted; olive gray (5Y 4/2)
100	110	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subangular; olive gray (5Y 4/2)
110	120	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
120	130	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
130	140	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <15 mm in diameter; olive gray (5Y 4/2)
140	150	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
150	160	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <15 mm in diameter; shell fragments; dark greenish gray (10Y 4/1)
160	170	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <15 mm in diameter; dark olive brown (2.5Y 3/3)
170	180	Gravelly silty sand; coarse sand to pebbles with occasional silt; moderately sorted; subrounded; pebbles are <10 mm in diameter; dark olive brown (2.5Y 3/3)
180	190	Slightly gravelly silty clay; clay and silt with granules and pebbles; moderately sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
190	200	Slightly gravelly silty clay; clay and silt with granules and pebbles; moderately sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
200	210	Sandy silty clay; clay and silt with coarse to very coarse sand; moderately sorted; olive gray (5Y 5/2)
210	220	Slightly gravelly sandy clayey silt; silt and clay with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
220	230	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive (5Y 5/3)
230	240	Sand; medium sand to very coarse sand; moderately sorted; subrounded; olive (5Y 4/3)
240	250	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; olive (5Y 4/3)
250	260	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
260	270	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
270	280	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
280	290	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
290	300	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)

Table 8. Lithologic shaker logs for Eleanor Park (ELNR) (5S/3W-36P2–5) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft)		Description
From	To	
300	310	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subrounded; olive gray (5Y 4/2)
310	320	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subrounded; olive gray (5Y 4/2)
320	330	Gravelly silty clayey sand; coarse sand to pebbles with clay and silt; poorly sorted; subrounded; pebbles are <25 mm in diameter; olive gray (5Y 4/2)
330	340	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
340	350	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
350	360	Silty clay; clay and silt; well sorted; olive gray (5Y 4/2)
360	370	Sandy clayey silt; silt and clay with fine to coarse sand; moderately sorted; olive (5Y 4/3)
370	380	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subrounded; olive (5Y 4/3)
380	390	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subrounded; olive (5Y 4/3)
390	400	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive (5Y 4/3)
400	410	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive (5Y 4/3)
410	420	Silty clay; clay and silt; well sorted; olive (5Y 4/3)
420	430	No sample collected
430	440	No sample collected
440	450	Sandy silty clay; clay and silt with fine to coarse sand; moderately sorted; olive (5Y 4/3)
450	460	Sandy silty clay; clay and silt with fine to coarse sand; moderately sorted; olive (5Y 4/3)
460	470	Sandy silty clay; clay and silt with fine to very coarse sand; poorly
470	480	Sandy silty clay; clay and silt with fine to very coarse sand; poorly sorted; olive (5Y 4/3)
480	490	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
490	500	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
500	510	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
510	520	Silty clayey sand; fine to coarse sand with silt and clay; moderately sorted; subangular to subrounded; olive gray (5Y 4/2)
520	530	Silty clayey sand; fine to very coarse sand with silt and clay; poorly sorted; subangular to subrounded; olive (5Y 4/3)
530	540	Sandy silty clay; clay and silt with fine to very coarse sand; poorly sorted; olive (5Y 4/3)
540	550	Gravelly sand; coarse sand to pebbles; moderately sorted; subrounded; pebbles are <10 mm in diameter; dark olive gray (5Y 3/2)
550	560	Gravelly sand; coarse sand to pebbles; moderately sorted; subrounded; pebbles are <10 mm in diameter; dark olive gray (5Y 3/2)
560	570	Gravelly silty clayey sand; fine sand to granules with silt and clay; poorly sorted; subangular; olive (5Y 4/3)
570	580	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; olive (5Y 4/3)
580	590	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; dark olive gray (5Y 3/2)
590	600	Gravelly sand; coarse sand to granules; moderately sorted; subrounded; dark olive gray (5Y 3/2)
600	610	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/3)
610	620	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; olive brown (2.5Y 4/3)
620	630	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive brown (2.5Y 4/3)
630	640	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive brown (2.5Y 4/3)

Table 8. Lithologic shaker logs for Eleanor Park (ELNR) (5S/3W-36P2–5) multiple-well monitoring site, Santa Clara County, California—Continued

Depth (ft) From	Depth (ft) To	Description
640	650	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive brown (2.5Y 4/3)
650	660	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/3)
660	670	Gravelly silty sand; fine sand to granules with silt; poorly sorted; subangular; brown (10YR 4/3)
670	680	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/6)
680	690	No sample collected
690	700	Silty clayey sand; medium to very coarse sand with occasional silt and clay; moderately sorted; subrounded; olive brown (2.5Y 4/3)
700	710	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive brown (2.5Y 4/4)
710	720	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive brown (2.5Y 4/4)
720	730	Gravelly sand; medium sand to granules; moderately sorted; subrounded; brown (10YR 4/3)
730	740	Gravelly sand; medium sand to granules; moderately sorted; subrounded; brown (10YR 4/3)
740	750	Gravelly sand; medium sand to granules; moderately sorted; subrounded; dark brown (10YR 3/3)
750	760	Gravelly silty sand; medium sand to granules with silt; moderately sorted; subrounded; dark brown (10YR 3/3)
760	770	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; brown (10YR 4/3)
770	780	Gravelly sand; medium sand to pebbles; poorly sorted; subangular; pebbles are <10 mm in diameter; brown (10YR 4/3)
780	790	Sand; fine to coarse sand; moderately sorted; subangular to subrounded; brown (10YR 4/3)
790	800	Gravelly sand; medium sand to pebbles; poorly sorted; subrounded; pebbles are <10 mm in diameter; brown (10YR 4/3)
800	810	Gravelly sand; medium sand to granules; moderately sorted; subrounded; brown (10YR 4/3)
810	820	Gravelly sand; medium sand to pebbles; poorly sorted; subangular to subrounded; pebbles are <10 mm in diameter; brown (10YR 4/3)
820	830	Gravelly sand; medium sand to pebbles; poorly sorted; subrounded; pebbles are <10 mm in diameter; brown (10YR 4/3)
830	840	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <10 mm in diameter; brown (10YR 4/3)
840	850	Gravelly sand; medium sand to pebbles; poorly sorted; subangular to subrounded; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
850	860	Gravelly sand; medium sand to pebbles; poorly sorted; subrounded; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
860	870	Gravelly sand; medium sand to pebbles; poorly sorted; subrounded; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
870	880	Gravelly sand; medium sand to pebbles; poorly sorted; subangular to subrounded; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
880	890	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; dark greenish gray (10Y 3/1)
890	900	Gravelly sand; medium sand to pebbles; poorly sorted; subrounded to very angular; pebbles are <10 mm in diameter; dark olive gray (5Y 3/2)
900	910	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; dark greenish gray (10Y 3/1)
910	920	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded to rounded; dark greenish gray (10Y 4/1)
920	930	Slightly gravelly sandy clayey silt; silt and clay with coarse sand to granules; moderately sorted; dark greenish gray (10Y 3/1)

Table 9. Lithologic shaker logs for Saratoga (STGA) (7S/1W-29C3–6) multiple-well monitoring site, Santa Clara County, California

[Altitude of land surface, approximately 225 ft; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary; total depth drilled 1,000 ft; screened intervals 250–270; 360–380; 530–550; 630–650 ft; ft, foot; <, less than; mm, millimeter]

Depth (ft)		Description
From	To	
0	10	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; very dark grayish brown (2.5Y 3/2)
10	20	Gravelly silty clayey sand; medium sand to pebbles with clay and silt; poorly sorted; subrounded; pebbles are <20 mm in diameter; very dark grayish brown (2.5Y 3/2)
20	30	Slightly gravelly sandy silty clay; clay and silt with occasional medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; dark yellowish brown (10YR 4/4)
30	40	Clayey silty sandy gravel; granules and pebbles with medium to very coarse sand and clay and silt; poorly sorted; subrounded; pebbles are <10 mm in diameter; very dark grayish brown (2.5Y 3/2)
40	50	Gravel; granules and pebbles; well sorted; subrounded to subangular; pebbles are <20 mm in diameter; very dark grayish brown (2.5Y 3/2)
50	60	Silty clayey sandy gravel; granules and pebbles with occasional silt and clay with medium to very coarse sand; poorly sorted; subangular; pebbles are <25 mm in diameter; very dark grayish brown (2.5Y 3/2)
60	70	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium to very coarse sand; poorly sorted; subrounded; pebbles are <20 mm in diameter; dark yellowish brown (2.5Y 3/2)
70	80	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium to very coarse sand; poorly sorted; subrounded; pebbles are <15 mm in diameter; very dark grayish brown (2.5Y 3/2)
80	90	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium sand to very coarse sand; poorly sorted; subrounded; pebbles are <15 mm in diameter; very dark grayish brown (2.5Y 3/2)
90	100	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; dark yellowish brown (10YR 4/4)
100	110	Slightly gravelly sandy silty clay: clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; dark yellowish brown (10YR 4/4)
110	120	Slightly gravelly sandy silty clay; clay and silt with occasional medium sand to pebbles; poorly sorted; pebbles are <8 mm in diameter; dark yellowish brown (10YR 4/4)
120	130	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <8 mm in diameter; dark yellowish brown (10YR 4/4)
130	140	Sandy gravel; granules and pebbles with medium to very coarse sand; moderately sorted; subrounded; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/6)
140	150	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium to very coarse sand; poorly sorted; subrounded; pebbles are <15 mm in diameter; dark yellowish brown (10YR 4/4)
150	160	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium to very coarse sand; poorly sorted; subrounded; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
160	170	Sandy gravel; granules and pebbles with medium to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <10 mm in diameter; olive brown (2.5Y 4/3)
170	180	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
180	190	Silty clayey sandy gravel; granules and pebbles with silt and clay and medium to very coarse sand; poorly sorted; subrounded; pebbles are <10 mm in diameter; olive brown (2.5Y 4/3)
190	200	Gravelly silty clayey sand; medium sand to pebbles with occasional silt and clay; poorly sorted; subrounded; pebbles are <10 mm in diameter; olive brown (2.5Y 4/3)
200	210	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
210	220	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
220	230	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)

Table 9. Lithologic shaker logs for Saratoga (STGA) (7S/1W-29C3–6) multiple-well monitoring site, Santa Clara County, California —Continued

Depth (ft)		Description
From	To	
230	240	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
240	250	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
250	260	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
260	270	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
270	280	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
280	290	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
290	300	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; dark yellowish brown (10YR 4/4)
300	310	Sandy silty clay; clay and silt with coarse to very coarse sand; moderately sorted; yellowish brown (10YR 5/4)
310	320	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
320	330	Gravelly silty clayey sand; medium sand to granules with occasional clay and silt; poorly sorted; subangular to subrounded; olive brown (2.5Y 4/4)
330	340	Gravelly silty clayey sand; medium sand to granules with occasional clay and silt; poorly sorted; subangular to subrounded; olive brown (2.5Y 4/4)
340	350	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <15 mm in diameter; light olive brown (2.5Y 5/4)
350	360	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
360	370	Gravelly sand; fine sand to granules; moderately sorted; subangular to subrounded; olive brown (2.5Y 4/4)
370	380	Gravelly sand; fine sand to pebbles; poorly sorted; subangular to subrounded; pebbles are <10 mm in diameter; olive brown (2.5Y 4/4)
380	390	Gravelly silty sand; medium sand to pebbles with occasional silt; poorly sorted; subangular to subrounded; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
390	400	Gravelly sand; medium sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
400	410	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
410	420	Gravelly silty clayey sand; medium sand to pebbles with occasional clay and silt; poorly sorted; subangular; pebbles are <10 mm in diameter; mm in diameter; light olive brown (2.5Y 5/4)
420	430	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subangular; light olive brown (2.5Y 5/4)
430	440	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light yellowish brown (2.5Y 6/4)
440	450	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
460	460	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
460	470	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subangular; light olive brown (2.5Y 5/4)
470	480	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)

Table 9. Lithologic shaker logs for Saratoga (STGA) (7S/1W-29C3–6) multiple-well monitoring site, Santa Clara County, California —Continued

Depth (ft)		Description
From	To	
480	490	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; olive brown (2.5Y 4/4)
490	500	Gravelly sand; medium sand to pebbles; moderately sorted; subrounded to subangular; pebbles are <10 mm in diameter; olive brown (2.5Y 4/4)
500	510	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
510	520	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
520	530	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
530	540	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
540	550	Gravelly silty clayey sand; fine sand to granules with occasional silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
550	560	Silty clayey sand; fine to very coarse sand with silt and clay; poorly sorted; subrounded; light olive brown (2.5Y 5/4)
560	570	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
570	580	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subrounded; olive brown (2.5Y 4/4)
580	590	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/3)
590	600	Slightly gravelly sandy silty clay; clay and silt with occasional medium sand to granules; poorly sorted; olive brown (2.5Y 4/4)
600	610	Gravelly sand; medium sand to pebbles; moderately sorted; subangular to subrounded; pebbles are <10 mm in diameter; olive (5Y 4/3)
610	620	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
620	630	Slightly gravelly sandy clayey silt; silt and clay with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
630	640	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <15 mm in diameter; olive (5Y 5/3)
640	650	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <15 mm in diameter; olive (5Y 5/3)
650	660	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular to subrounded; pebbles are <15 mm in diameter; olive (5Y 5/3)
660	670	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/4)
670	680	Slightly gravelly sandy silty clay; clay and silt with medium sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
680	690	Gravelly sand; coarse sand to granules; moderately sorted; subrounded; olive (5Y 5/3)
690	700	Slightly gravelly sandy silty clay; clay and silt with medium sand to granules; poorly sorted; light olive brown (2.5Y 5/4)
700	710	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/4)
710	720	Gravelly silty clayey sand; medium sand to granules with silt and clay; poorly sorted; subangular; olive (5Y 5/3)
720	730	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular to subrounded; olive brown (2.5Y 4/3)
730	740	Gravelly silty clayey sand; coarse sand to granules with clay and silt; moderately sorted; subangular to subrounded; olive brown (2.5Y 4/3)
740	750	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/4)
750	760	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/4)

Table 9. Lithologic shaker logs for Saratoga (STGA) (7S/1W-29C3–6) multiple-well monitoring site, Santa Clara County, California —Continued

Depth (ft)		Description
From	To	
760	770	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive (5Y 5/3)
770	780	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <10 mm in diameter; olive (5Y 5/3)
780	790	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; olive (5Y 5/3)
790	800	Sandy gravel; pebbles and granules with coarse to very coarse sand; moderately sorted; subangular to subrounded; pebbles are <12 mm in diameter; olive (5Y 4/3)
800	810	Gravelly sand; coarse sand to granules; moderately sorted; angular to subangular; olive (5Y 4/3)
810	820	Gravelly sand; coarse sand to pebbles; moderately sorted; angular to subangular; pebbles are <12 mm in diameter; olive (5Y 4/3)
820	830	Gravelly clayey sand; coarse sand to granules with clay; moderately sorted; subangular; olive gray (5Y 4/2)
830	840	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive (5Y 4/3)
840	850	Gravelly sand; coarse sand to granules; moderately sorted; subangular; dark olive gray (5Y 3/2)
850	860	Slightly gravelly sandy clay; clay with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
860	870	Gravelly clayey silty sand; coarse sand to granules with silt and clay; moderately sorted; subangular; olive (5Y 5/3)
870	880	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive (5Y 4/3)
880	890	Gravelly sand; coarse sand to granules; moderately sorted; subangular; dark olive gray (5Y 3/2)
890	900	Gravelly sand; coarse sand to granules; moderately sorted; subangular; dark olive gray (5Y 3/2)
900	910	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <10 mm in diameter; dark olive gray (5Y 3/2)
910	920	Gravelly clayey sand; coarse sand to pebbles with clay; moderately sorted; subrounded; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
920	930	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
930	940	Gravelly sand; coarse sand to granules; moderately sorted; subangular; olive gray (5Y 4/2)
940	950	Gravelly silty clayey sand (gmS); coarse sand to granules with clay and silt; moderately sorted; subrounded; olive gray (5Y 4/2)
950	960	Slightly gravelly sandy silty clay; clay and silt with coarse sand to pebbles; poorly sorted; pebbles are <10 mm in diameter; olive gray (5Y 4/2)
960	970	Gravelly sand; coarse sand to granules; moderately sorted; subangular; dark olive gray (5Y 3/2)
970	980	Gravelly clayey silty sand; coarse sand to granules with clay and silt; moderately sorted; subangular; olive gray (5Y 4/2)
980	990	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)
990	1,000	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; olive gray (5Y 4/2)

Table 10. Lithologic shaker logs for Evergreen (EVGR) (7S/2E-19C5–9) multiple-well monitoring site, Santa Clara, California

[Altitude of land surface, approximately 183 ft; depth is in feet below land surface; soil and rock color notation from Munsell Color (1994); drilled by U.S. Geological Survey Western Region Research Drilling Unit, using mud-rotary, April 2001; total depth drilled 1,030 ft; screened intervals 130–150; 270–290; 370–390; 610–630; 740–760 ft; ft, foot; <, less than; mm, millimeter]

Depth (ft)		Description
From	To	
60	70	Gravelly silty clayey sand; coarse sand to pebbles with silt and clay; poorly sorted; subrounded; pebbles are <10 mm in diameter; dark yellowish brown (10YR 4/4)
70	80	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; dark yellowish brown (10YR 4/4)
80	90	Gravelly silty clayey sand; coarse sand to pebbles with silt and clay; poorly sorted; subrounded; pebbles are <10 mm in diameter; dark yellowish brown (10YR 4/4)
90	100	Silty clayey sandy gravel; granules and pebbles with coarse to very coarse sand and silt and clay; poorly sorted; subrounded; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/6)
100	110	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/6)
110	120	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/6)
120	130	Slightly gravelly sandy silty clay; clay and silt with coarse sand to granules; moderately sorted; light olive brown (2.5Y 5/6)
130	140	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/6)
140	150	Gravelly silty clayey sand; coarse sand to pebbles with silt and clay; poorly sorted; subangular to subrounded; pebbles are <12 mm in diameter; light olive brown (2.5Y 5/4)
150	160	Gravelly silty clayey sand; coarse sand to pebbles with occasional silt and clay; poorly sorted; subrounded; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/4)
160	170	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
170	180	Gravelly silty clayey sand; coarse sand to pebbles with silt and clay; poorly sorted; subrounded; pebbles are <12 mm in diameter; light olive brown (2.5Y 5/4)
180	210	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
210	220	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
220	230	Sandy gravel; granules and pebbles with coarse to very coarse sand; moderately sorted; subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)
230	240	Clayey silty sandy gravel; granules and pebbles with coarse to very coarse sand and clay and silt; poorly sorted; subrounded; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/4)
240	270	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
270	280	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
280	290	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
290	330	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
330	340	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
340	350	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
350	360	Gravelly silty clayey sand; coarse sand to pebbles with occasional silt and clay; poorly sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/4)

Table 10. Lithologic shaker logs for Evergreen (EVGR) (7S/2E-19C5–9) multiple-well monitoring site, Santa Clara, California—Continued

Depth (ft)		Description
From	To	
360	370	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; subangular; light olive brown (2.5Y 5/4)
370	380	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; subangular; light olive brown (2.5Y 5/4)
380	390	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
390	420	Gravelly silty clayey sand; coarse sand to pebbles with occasional silt and clay; poorly sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/4)
420	430	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
430	440	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
440	450	Gravelly sand; coarse sand to granules; moderately sorted; subrounded; olive brown (2.5Y 4/4)
450	480	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
480	490	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
490	500	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
500	510	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
510	520	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
520	530	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; light olive brown (2.5Y 5/3)
530	540	Gravelly sand; coarse sand to granules; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
540	560	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular to subrounded; light olive brown (2.5Y 5/4)
560	570	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; subrounded; light olive brown (2.5Y 5/4)
570	600	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; subrounded; light olive brown (2.5Y 5/4)
600	610	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; subrounded; light olive brown (2.5Y 5/4)
610	620	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
620	630	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
630	640	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
640	670	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
670	680	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
680	690	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
690	700	Gravelly sand; coarse sand to pebbles; moderately sorted; subrounded; pebbles are <8 mm in diameter; olive brown (2.5Y 4/4)

Table 10. Lithologic shaker logs for Evergreen (EVGR) (7S/2E-19C5–9) multiple-well monitoring site, Santa Clara, California—Continued

Depth (ft)		Description
From	To	
700	710	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; olive brown (2.5Y 4/3)
710	720	Gravelly silty clayey sand; coarse sand to pebbles with occasional silt and clay; poorly sorted; subangular; pebbles are <8 mm in diameter; olive brown (2.5Y 4/3)
720	730	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; olive brown (2.5Y 4/3)
730	740	Gravelly sand; coarse sand to pebbles; moderately sorted; subangular; pebbles are <8 mm in diameter; olive brown (2.5Y 4/3)
740	750	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
750	760	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; olive brown (2.5Y 4/3)
760	770	Gravelly sand; coarse sand to pebbles; moderately sorted; subrounded; olive brown (2.5Y 4/3)
770	800	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
800	810	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
810	820	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; olive brown (2.5Y 4/4)
820	830	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; olive brown (2.5Y 4/4)
830	840	Gravelly silty clayey sand; coarse sand to pebbles with occasional silt and clay; poorly sorted; subrounded; pebbles are <15 mm in diameter; olive brown (2.5Y 4/4)
840	850	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
850	860	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
860	870	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
870	880	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
880	890	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
890	900	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
900	910	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
910	920	Gravelly silty clayey sand; coarse sand to granules with silt and clay; moderately sorted; subrounded; olive brown (2.5Y 4/4)
920	930	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subrounded; light olive brown (2.5Y 5/4)
930	940	Sandy gravel; pebbles and granules with coarse to very coarse sand; moderately sorted; subrounded; pebbles are <15 mm in diameter; olive brown (2.5Y 4/4)
940	950	Gravelly silty clayey sand; coarse sand to granules with occasional silt and clay; moderately sorted; subangular; light olive brown (2.5Y 5/4)
950	960	Gravelly silty clayey sand; coarse sand to pebbles with silt and clay; poorly sorted; subangular; pebbles are <10 mm in diameter; light olive brown (2.5Y 5/4)

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California

[km/sec, kilometers per second; ft, foot; ft/sec, foot per second; bls, below land surface; g/cm^3, grams per cubic centimeter; (H), core contains relatively greater velocity or density; (L), core contains relatively lower velocity or density; —, no data]

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
CCOC-1C-1	0.0	1.8	1.8	—	—	1.82	16
CCOC-2C-1	11.0	14.3	3.3	—	—	2.02	6
CCOC-4C-1	20.9	24.2	3.3	1.7016	5,475.7	2.11 (H)	15
CCOC-5C-1	26.0	29.9	3.9	1.5926	5,125.0	2.03	14
CCOC-6C-1	31.0	32.8	1.8	1.5585	5,015.3	1.95	13
CCOC-7C-1	36.0	38.1	2.1	1.5635	5,031.3	2.00	8
CCOC-8C-1	41.0	43.5	2.5	1.6133	5,191.6	2.00	0
CCOC-9C-1	56.0	59.3	3.3	1.6839	5,418.8	2.12 (H)	11
CCOC-11C-1	63.5	64.3	.8	—	—	1.74 (L)(H)	5
CCOC-12C-1	66.0	67.4	1.4	1.468	4,724.0 (L)	2.30 (H)	20
CCOC-13C-1	68.1	69.5	1.4	1.5128	4,868.2	2.10 (H)	27
CCOC-15C-1	75.6	78.1	2.5	—	—	2.04 (H)	12
CCOC-15C-2	73.1	75.7	2.6	1.623	5,222.8	2.08	16
CCOC-16C-1	78.5	80.6	2.1	—	—	1.94	9
CCOC-17C-1	80.8	83.5	2.7	—	—	2.05 (H)	16
CCOC-18C-1	85.5	88.2	2.7	1.6937	5,450.3	2.13 (H)	14
CCOC-19C-1	91.0	95.2	4.2	1.6841	5,419.4	2.14 (H)	16
CCOC-20C-1	96.0	100.5	4.5	1.6974	5,462.2	2.09	13
CCOC-21C-1	101.0	105.5	4.5	1.6156	5,199.0	1.99	11
CCOC-22C-1	106.0	108.6	2.7	1.6651	5,358.3	2.08	9
CCOC-23C-1	111.0	115.7	4.7	1.5698	5,051.6	1.95	15
CCOC-24C-1	115.9	120.4	4.5	1.6422	5,284.6	2.02	18
CCOC-25C-1	121.0	123.1	2.1	1.7025	5,478.6	2.19 (H)	19
CCOC-26C-1	125.8	128.5	2.6	1.6935	5,449.7	2.10 (H)	14
CCOC-27C-1	128.5	131.0	2.5	1.7114	5,507.3	2.14	14
CCOC-28C-1	130.4	134.4	4.1	1.6627	5,350.6	2.06	10
CCOC-29C-1	231.0	234.1	3.1	1.7558	5,650.2	2.13	0
CCOC-30C-1	236.0	238.7	2.7	1.7055	5,488.3	2.11	7
CCOC-31C-1	241.0	244.3	3.3	1.6651	5,358.3	2.31 (H)	24
CCOC-32C-1	245.4	247.8	2.4	1.7116	5,507.9	2.27 (H)	23
CCOC-33C-1	251.0	254.1	3.1	1.7466	5,620.6	2.36 (H)	16
CCOC-34C-1	256.0	260.1	4.1	1.7434	5,610.3	2.14 (H)	24
CCOC-35C-1	261.0	264.4	3.4	1.7509	5,634.4	2.18 (H)	21
CCOC-36C-1	265.9	266.5	0.5	—	—	2.24 (H)	14
CCOC-37C-1	271.0	271.7	0.7	—	—	2.36 (H)	11
CCOC-38C-1	275.4	277.1	1.6	—	—	2.27 (H)	44
CCOC-39C-1	471.0	471.9	0.9	1.7294	5,565.2	2.17	14
CCOC-40C-1	476.0	480.9	4.9	1.7658	5,682.3	2.19 (H)	9
CCOC-45C-1	498.5	499.3	0.8	—	—	2.39 (H)	20
CCOC-46C-1	550.7	553.1	2.4	1.7765	5,716.8	2.16	10

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
CCOC-47C-1	553.4	554.9	1.4	1.762	5,670.1	2.24 (H)	20
CCOC-48C-1	558.1	560.0	1.9	1.7904	5,761.5	2.27 (H)	28
CCOC-49C-1	561.0	565.5	4.5	1.7754	5,713.2	2.17	33
CCOC-50C-1	566.0	570.3	4.3	1.7831	5,738.0	2.18 (H)	22
CCOC-51C-1	571.0	574.8	3.8	1.7599	5,663.4	2.23 (H)	27
CCOC-52C-1	575.9	578.6	2.7	1.7897	5,759.3	2.25 (H)	19
CCOC-53C-1	581.0	581.9	.9	—	—	2.50 (H)	55
CCOC-54C-1	585.9	588.4	2.5	1.8182	5,851.0	2.23 (H)	34
CCOC-55C-1	588.5	590.0	1.5	1.8019	5,798.5	2.29 (H)	32
CCOC-56C-1	636.0	637.3	1.3	—	—	2.20 (H)	11
CCOC-57C-1	638.5	639.7	1.2	—	—	2.20 (H)	23
CCOC-58C-1	640.8	643.0	2.2	—	—	2.38 (H)	46
CCOC-59C-1	643.3	644.5	1.1	1.7341	5,580.3	2.21 (H)	29
CCOC-60C-1	670.8	675.9	5.1	1.771	5,699.1	2.21 (L)(H)	43
CCOC-61C-1	676.0	679.4	3.4	1.7457	5,617.7	2.15 (H)	36
CCOC-62C-1	716.0	718.2	2.2	1.6162	5,200.9	2.39 (H)	26
CCOC-63C-1	721.0	722.6	1.6	—	—	2.36 (H)	57
CCOC-64C-1	726.0	726.9	.9	1.7791	5,725.1	2.34 (H)	30
CCOC-65C-1	731.0	734.6	3.6	1.7514	5,636.0	2.18	21
CCOC-66C-1	736.0	738.8	2.8	1.7685	5,691.0	2.19	27
CCOC-67C-1	781.0	785.4	4.4	1.7581	5,657.6	2.21 (H)	47
CCOC-68C-1	816.0	818.4	2.4	1.6883	5,432.9	2.15 (H)	47
CCOC-69C-1	821.0	822.3	1.3	1.6825	5,414.3	2.14	34
CCOC-70C-1	826.0	826.5	.5	—	—	2.25 (H)	11
CCOC-71C-1	881.0	882.9	1.9	1.7981	5,786.3	2.21 (H)	33
CCOC-72C-1	886.0	890.8	4.8	1.7193	5,532.7	2.05 (H)	27
CCOC-73C-1	891.0	893.7	2.7	1.801	5,795.6	2.21 (H)	39
CCOC-74C-1	896.0	897.3	1.3	1.7667	5,685.2	2.13	5
CCOC-75C-1	961.0	962.8	1.8	1.7595	5,662.1	2.23 (H)	27
CCOC-76C-1	966.0	969.0	3.0	—	—	2.35 (L)(H)	39
CCOC-77C-1	996.0	998.3	2.3	1.7455	5,617.0	2.45 (H)	27
CCOC-78C-1	1001.0	1002.4	1.4	1.7996	5,791.1	2.17	10
CCOC-79C-1	1006.0	1009.2	3.2	1.6484	5,304.6	2.28 (H)	18
WLLO1-1C-1	39.6	44.6	4.9	1.6	5,148.8	1.97 (H)	3
WLLO1-2C-1	45.0	47.8	2.8	1.5963	5,136.9	2.14 (L)(H)	6
WLLO1-3C-1	49.7	54.6	5.0	1.6673	5,365.4	2.09 (H)	6
WLLO1-4C-1	55.0	59.1	4.1	1.6954	5,455.8	2.10 (H)	5
WLLO1-5C-1	60.0	62.2	2.2	—	—	2.35 (H)	16
WLLO1-10C-1	85.0	86.9	1.9	—	—	2.40 (H)	21
WLLO1-11C-1	87.8	88.5	.7	—	—	2.35 (H)	9
WLLO1-14C-1	109.7	114.3	4.7	1.6351	5,261.8	2.05 (H)	9
WLLO1-15C-1	294.8	299.1	4.3	1.6495	5,308.1	2.08	8
WLLO1-16C-1	300.0	302.9	2.9	1.6983	5,465.1	2.11	9
WLLO1-17C-1	305.0	310.0	5.0	1.6854	5,423.6	2.11	21
WLLO1-18C-1	310.0	315.0	5.0	1.7147	5,517.9	2.14 (H)	23

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
WLLO1-19C-1	410.0	412.9	2.9	1.7464	5,619.9	2.19 (H)	25
WLLO1-20C-1	490.0	490.8	.8	—	—	2.16 (H)	26
WLLO1-21C-1	494.8	495.4	.6	1.4169	4,559.6	2.10 (H)	11
WLLO1-24C-1	592.5	593.9	1.4	—	—	2.27 (H)	28
WLLO1-25C-1	310.0	315.0	5.0	—	—	2.44 (H)	29
WLLO1-26C-1	598.0	599.7	1.7	—	—	2.44 (H)	28
WLLO1-27C-1	620.0	623.1	3.1	—	—	2.39 (H)	38
WLLO1-28C-1	670.0	673.0	3.0	1.6938	5,450.6	2.13	28
WLLO1-29C-1	673.0	675.2	2.2	1.6496	5,308.4	2.15 (H)	28
WLLO1-30C-1	705.0	710.0	5.0	1.6904	5,439.7	2.09	15
WLLO1-31C-1	735.0	736.2	1.2	1.8435	5,932.4	2.15	54
WLLO1-32C-1	738.0	740.5	2.5	1.7209	5,537.9	2.11	40
WLLO1-33C-1	741.0	746.0	5.0	1.6943	5,452.3	2.09	33
WLLO1-34C-1	746.0	749.0	3.0	1.6687	5,369.9	1.79	229
WLLO1-36C-1	755.0	759.4	4.4	1.7108	5,505.4	2.08	64
WLLO1-37C-1	780.0	784.0	4.0	1.7078	5,495.7	1.88	232
WLLO2-1C-1	30.0	32.8	2.8	1.6474	5,301.3	2.02	0
WLLO2-2C-1	34.8	39.2	4.4	1.6325	5,253.4	1.99	9
WLLO2-3C-1	40.0	43.1	3.1	1.6257	5,231.5	1.99	4
WLLO2-4C-1	45.0	45.9	.9	1.6316	5,250.5	2.28	5
WLLO2-5C-1	50.0	54.9	4.9	1.674	5,386.9	2.07	8
WLLO2-6C-1	55.0	59.4	4.4	1.6795	5,404.6	2.10	5
WLLO2-7C	82.2	83.5	1.3	1.3845	4,455.3 (L)	2.23	13
MGCY-1C-1	13.8	14.6	.9	—	—	2.27 (H)	17
MGCY-3C-1	28.0	29.5	1.5	1.3314	4,284.4 (L)	2.18 (H)	20
MGCY-4C-1	33.6	36.1	2.5	1.5499	4,987.6	2.33 (H)	45
MGCY-9C-1	54.0	55.1	1.1	—	—	2.40 (H)	19
MGCY-10C-1	58.8	60.1	1.2	—	—	2.44 (H)	246
MGCY-11C-1	64.0	65.3	1.3	—	—	2.37 (H)	24
MGCY-13C-1	129.0	130.7	1.7	—	—	2.36 (H)	25
MGCY-15C-1	134.0	135.3	1.3	—	—	2.24 (H)	10
MGCY-16C-1	136.5	138.2	1.7	—	—	2.33 (H)	25
MGCY-17C-1	139.0	141.4	2.4	—	—	2.31 (H)	25
MGCY-14C-1	130.5	134.9	4.4	—	—	2.17 (H)	22
MGCY-20C-1	146.4	148.3	1.9	—	—	2.33 (H)	17
MGCY-21C-1	148.8	149.7	.8	1.674	5,386.9	2.22 (H)	11
MGCY-22C-1	151.3	153.7	2.4	1.6406	5,279.5	2.00	21
MGCY-23C-1	154.0	156.4	2.4	1.6518	5,315.5	2.05 (H)	24
MGCY-24C-1	159.0	161.5	2.5	—	—	2.42 (H)	20
MGCY-25C-1	164.0	166.4	2.4	—	—	2.37 (H)	28
MGCY-26C-1	229.9	232.8	2.9	—	—	2.30 (H)	38
MGCY-27C-1	234.0	237.0	3.0	—	—	2.35 (H)	32
MGCY-29C-1	244.0	245.1	1.1	—	—	2.34 (H)	13

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
MGCY-30C-1	249.0	253.9	4.9	1.7445	5,613.8	2.17 (H)	13
MGCY-31C-1	309.0	311.2	2.2	—	—	2.39 (H)	2
MGCY-32C-1	314.0	316.1	2.1	—	—	2.40 (H)	30
MGCY-33C-1	317.5	320.8	3.3	—	—	2.40 (H)	22
MGCY-34C-1	320.0	322.6	2.6	1.788	5,753.8	2.26 (H)	23
MGCY-35C-1	322.5	325.1	2.6	—	—	2.33 (H)	21
MGCY-36C-1	325.0	326.7	1.7	—	—	2.34 (H)	22
MGCY-37C-1	329.0	332.8	3.8	—	—	2.33 (H)	31
MGCY-38C-1	331.5	334.0	2.5	1.7631	5,673.7	2.13	18
MGCY-39C-1	334.0	335.1	1.1	1.7388	5,595.5	2.06	16
MGCY-40C-1	339.0	342.7	3.7	1.6289	5,241.8	2.09	17
MGCY-41C-1	410.0	411.1	1.1	—	—	2.32 (H)	11
MGCY-42C-1	411.8	414.0	2.2	—	—	2.39 (H)	19
MGCY-43C-1	414.0	416.3	2.3	—	—	2.37 (H)	13
MGCY-44C-1	419.0	424.1	5.1	1.7348	5,582.6	2.17 (H)	11
MGCY-45C-1	421.5	424.1	2.6	1.7796	5,726.8	2.16	14
MGCY-46C-1	424.0	426.5	2.5	1.7549	5,647.3	2.17 (H)	19
MGCY-47C-1	429.0	432.9	3.9	1.6867	5,427.8	2.21 (H)	29
MGCY-48C-1	434.0	438.9	4.9	—	—	2.35 (H)	30
MGCY-49AC-1	436.5	438.3	1.8	—	—	2.42 (H)	38
MGCY-49BC-1	489.0	490.8	1.8	1.6496	5,308.4	2.08 (H)	37
MGCY-50C-1	491.2	494.0	2.8	1.7545	5,646.0	2.26 (H)	27
MGCY-51C-1	494.0	498.2	4.2	1.79	5,760.2	2.17 (H)	31
MGCY-52C-1	499.0	503.4	4.4	1.7543	5,645.3	2.13	31
MGCY-54C-1	509.0	512.8	3.8	—	—	2.37	37
MGCY-55C-1	514.0	518.0	4.0	—	—	2.40	43
MGCY-56C-1	579.0	581.4	2.4	1.7161	5,522.4	2.14	33
MGCY-57C-1	581.5	582.1	0.6	—	—	1.95	28
MGCY-57C-2	582.1	584.9	2.8	1.7532	5,641.8	2.14	38
MGCY-58C-1	584.0	588.4	4.4	1.8034	5,803.3	2.22 (H)	39
MGCY-59C-1	589.0	590.5	1.5	1.5149	4,874.9	1.74	26
MGCY-60C-1	594.0	596.5	2.5	1.7055	5,488.3	2.13	43
MGCY-61C-1	599.0	604.0	5.0	1.8038	5,804.6	2.20 (H)	57
MGCY-62C-1	604.0	609.2	5.2	1.7462	5,619.3	2.11	43
MGCY-63C-1	609.0	613.7	4.7	1.7069	5,492.8	2.21 (H)	56
MGCY-64C-1	614.0	619.2	5.2	1.5257	4,909.7	2.20 (H)	41
MGCY-65C-1	619.0	622.7	3.7	1.8185	5,851.9	2.30 (H)	36
MGCY-66C-1	624.0	628.8	4.8	1.7633	5,674.3	2.21 (H)	44
MGCY-68C-1	699.0	703.5	4.5	1.7937	5,772.1	2.19	60
MGCY-69C-1	704.0	708.7	4.7	1.7886	5,755.7	2.19 (H)	59
MGCY-70C-1	709.0	713.8	4.8	1.8035	5,803.7	2.18	49
MGCY-71C-1	714.0	718.4	4.4	1.7576	5,656.0	2.15	41
MGCY-72C-1	719.0	723.3	4.3	1.7926	5,768.6	2.20 (H)	21
MGCY-73C-1	724.0	727.1	3.1	1.8009	5,795.3	2.26 (H)	25
MGCY-74C-1	768.7	771.1	2.4	1.8153	5,841.6	2.38 (H)	36

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
MGCY-75C-1	774.0	778.0	4.0	1.8007	5,794.7	2.33 (H)	40
MGCY-76C-1	779.0	782.4	3.4	—	—	2.36 (H)	57
MGCY-77C-1	781.9	790.2	8.3	—	—	2.32 (H)	49
MGCY-78C-1	789.0	793.9	4.9	1.8286	5,884.4	2.16	5
MGCY-79C-1	829.0	830.3	1.3	1.8001	5,792.7	2.15	3
MGCY-80C-1	849.0	857.7	8.7	—	—	2.01	2
MGCY-81C-1	866.5	882.6	16.1	—	—	2.04	4
MGCY-81C-2	866.5	866.5	.0	—	—	1.98	3
STPK-1C-1	30.0	33.6	3.6	—	—	2.05	9
STPK-2C-1	34.0	38.8	4.8	—	—	2.01	9
STPK-3C-1	39.0	41.3	2.3	—	—	1.95	12
STPK-4C-1	43.8	48.6	4.8	—	—	1.98	14
STPK-5C-1	49.0	51.0	2.0	—	—	2.13	16
STPK-6C-1	54.0	56.6	2.6	—	—	2.42	21
STPK-8C-1	134.0	135.0	1.0	—	—	2.27	14
STPK-11C-1	184.0	187.5	3.5	1.7373	5,590.6	2.24	17
STPK-13C-1	224.0	226.5	2.5	1.6551	5,326.1	2.09	10
STPK-15C-1	229.0	232.8	3.8	1.7393	5,597.1	2.15	13
STPK-16C-1	234.0	238.3	4.3	1.6563	5,330.0	2.04	9
STPK-17C-1	239.0	243.7	4.7	1.6791	5,403.3	2.09	10
STPK-18C-1	244.0	246.7	2.7	1.6233	5,223.8	1.99	6
STPK-19C-1	249.0	252.6	3.6	1.7019	5,476.7	2.20	16
STPK-20C-1	254.0	257.7	3.7	1.7265	5,555.9	2.15	13
STPK-21C-1	324.0	328.1	4.1	1.7599	5,663.4	2.22	23
STPK-22C-1	329.0	330.3	1.3	—	—	2.43	26
STPK-23C	379.0	380.3	1.3	—	—	2.35	26
STPK-25C-1	384.0	385.1	1.1	—	—	2.39	38
STPK-27C-1	399.0	400.6	1.6	—	—	2.46	41
STPK-28C-1	404.0	404.9	.9	—	—	2.37	32
STPK-29C-1	454.0	457.9	3.9	1.701	5,473.8	2.15	8
STPK-30C-1	459.0	460.3	1.3	1.8	5,792.4	2.23	8
STPK-31C-1	464.0	466.7	2.7	1.7531	5,641.5	2.35	15
STPK-32C-1	469.0	472.2	3.2	—	—	2.33	20
STPK-33C-1	474.0	476.4	2.4	—	—	2.38	20
STPK-34C-1	479.0	481.8	2.8	1.7232	5,545.3	2.27	18
STPK-35C-1	484.0	486.3	2.3	—	—	2.41	28
STPK-36C-1	569.0	570.6	1.6	1.6822	5,413.3	2.16	17
STPK-36C-2	569.0	571.6	2.6	1.6906	5,440.4	2.09	12
STPK-37C-1	574.0	575.4	1.4	1.6872	5,429.4	2.18	15
STPK-37C-2	574.0	575.3	1.3	1.7925	5,768.3	2.23	16
STPK-38C-1	579.0	582.2	3.2	1.7553	5,648.6	2.23	16
STPK-39C-1	584.0	585.4	1.4	1.7838	5,740.3	2.29	19
STPK-40C-1	589.0	591.7	2.7	1.6057	5,167.1	2.33	21

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
STPK-41C-1	609.0	612.5	3.5	1.7663	5,684.0	2.19	17
STPK-42C-1	614.0	615.4	1.4	1.7718	5,701.7	2.30	23
STPK-43C-1	619.0	621.4	2.4	—	—	2.38	29
STPK-44C-1	624.0	626.4	2.4	—	—	2.35	26
STPK-45C-1	659.0	662.8	3.8	1.7804	5,729.3	2.17	15
STPK-46C-1	664.0	667.7	3.7	1.7523	5,638.9	2.16	15
STPK-47C-1	669.0	670.7	1.7	1.7703	5,696.8	2.26	29
STPK-48C-1	674.0	676.7	2.7	—	—	2.36	28
STPK-49C-1	679.0	681.1	2.1	—	—	2.26	33
STPK-50C-1	709.0	712.6	3.6	1.691	5,441.6	2.18	17
STPK-51C-1	714.0	717.9	3.9	1.8149	5,840.3	2.33	34
STPK-52C-1	719.0	723.3	4.3	1.744	5,612.2	2.19	37
STPK-53C-1	724.0	724.7	.7	1.8263	5,877.0	2.28	34
STPK-54C-1	759.0	762.9	3.9	—	—	2.34	21
STPK-56C-1	769.0	772.6	3.6	1.7873	5,751.5	2.25	13
STPK-57C-1	774.0	779.0	5.0	1.7921	5,767.0	2.21	19
STPK-58C-1	799.0	802.6	3.6	1.7663	5,684.0	2.16	27
STPK-59C-1	804.0	807.4	3.4	1.839	5,917.9	2.22	39
STPK-60C-1	829.0	830.9	1.9	—	—	2.29	26
STPK-61C-1	831.5	833.5	2.0	—	—	2.44	38
STPK-63C-1	869.0	870.3	1.3	1.7289	5,563.6	2.15	26
STPK-63C-2	869.0	872.0	3.0	1.714	5,515.7	2.16	25
STPK-64C-1	874.0	877.0	3.0	1.7785	5,723.2	2.18	22
STPK-65C-1	919.0	923.3	4.3	1.7844	5,742.2	2.31	41
STPK-66C-1	924.0	925.8	1.8	1.6876	5,430.7	2.16	27
STPK-67C-1	989.0	990.2	1.2	1.7968	5,782.1	2.23	20
STPK-68C-1	994.0	996.0	2.0	1.6547	5,324.8	2.31	31
GUAD-1C-1	9.0	13.7	4.7	1.6213	5,217.3	2.10	4
GUAD-2C-1	14.0	17.7	3.7	1.6619	5,348.0	2.14 (H)	5
GUAD-3C-1	19.0	21.4	2.4	1.6622	5,349.0	2.28 (H)	10
GUAD-4C-1	24.0	28.1	4.1	1.6222	5,220.2	2.05 (H)	15
GUAD-5C-1	29.0	33.2	4.2	1.6527	5,318.4	2.10	19
GUAD-6C-1	34.0	37.6	3.6	1.6445	5,292.0	2.06	26
GUAD-7C-1	39.0	42.0	3.0	1.5959	5,135.6	1.99	16
GUAD-8C-1	44.0	47.0	3.0	1.6312	5,249.2	2.05	17
GUAD-13C-1	69.0	70.8	1.8	1.6374	5,269.2	2.31 (H)	16
GUAD-14C-1	74.0	76.7	2.7	1.594	5,129.5	2.05 (H)	11
GUAD-16C-1	84.0	86.9	2.9	1.6859	5,425.2	2.15	22
GUAD-17C-1	89.5	93.4	3.9	1.6411	5,281.1	2.08	17
GUAD-18C-1	94.0	97.8	3.8	1.6493	5,307.4	2.10	12
GUAD-20C-1	104.0	107.4	3.4	1.7254	5,552.3	2.18 (H)	17
GUAD-21C-1	109.0	113.2	4.2	1.6342	5,258.9	2.01	15
GUAD-22C-1	114.0	119.2	5.2	1.6666	5,363.1	2.04	14
GUAD-23C-1	119.0	121.6	2.6	1.5811	5,088.0	1.91	11
GUAD-24C-1	124.0	125.6	1.6	1.7026	5,479.0	2.06	12

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
GUAD-25C-1	129.0	132.4	3.4	1.5962	5,136.6	2.25 (L)(H)	0
GUAD-26C-1	134.0	137.1	3.1	1.6642	5,355.4	2.11 (H)	70
GUAD-27C-1	139.0	141.7	2.7	1.662	5,348.3	2.05	64
GUAD-28C-1	144.0	147.5	3.5	1.6987	5,466.4	2.05	57
GUAD-30C-1	154.0	158.0	4.0	1.6068	5,170.7	1.93	57
GUAD-31C-1	159.0	163.4	4.4	1.6866	5,427.5	2.09	8
GUAD-32C-1	164.0	168.3	4.3	1.6853	5,423.3	2.08	19
GUAD-33C-1	169.0	173.1	4.1	1.6419	5,283.6	1.93 (L)	11
GUAD-34C-1	174.0	177.7	3.7	1.6465	5,298.4	2.02	9
GUAD-35C-1	179.0	183.5	4.5	1.5932	5,126.9	1.93	7
GUAD-36C-1	184.0	188.3	4.3	1.6685	5,369.2	2.11 (H)	6
GUAD-37C-1	189.0	190.1	1.1	1.5094	4,857.2	1.66	4
GUAD-39C-1	199.0	202.0	3.0	—	—	2.32 (H)	11
GUAD-40C-1	204.0	206.9	2.9	1.701	5,473.8	2.18 (H)	9
GUAD-42C-1	214.0	216.5	2.5	1.7316	5,572.3	2.13	4
GUAD-43C-1	219.0	220.5	1.5	1.7427	5,608.0	2.14	3
GUAD-44C-1	224.0	227.7	3.7	1.6954	5,455.8	2.07 (H)	6
GUAD-46AC-1	234.0	236.1	2.1	1.7438	5,611.5	2.13	8
GUAD-46BC-1	234.0	237.6	3.6	1.5445	4,970.2	2.08 (H)	23
GUAD-47C-1	239.0	240.1	1.1	—	—	2.37 (H)	23
GUAD-48C-1	244.0	244.9	.9	—	—	2.15 (H)	12
GUAD-49C-1	249.0	251.9	2.9	1.6934	5,449.4	2.08	18
GUAD-50C-1	254.0	258.4	4.4	1.6319	5,251.5	2.03	19
GUAD-51C-1	259.0	261.9	2.9	1.7187	5,530.8	2.16 (H)	23
GUAD-53C-1	269.0	272.5	3.5	1.6759	5,393.0	2.08	24
GUAD-54C-1	274.0	278.8	4.8	1.6208	5,215.7	1.98	13
GUAD-55C-1	279.0	281.4	2.4	1.6637	5,353.8	2.04	12
GUAD-56C-1	284.0	288.9	4.9	1.6471	5,300.4	2.02	12
GUAD-57C-1	289.0	291.5	2.5	1.7639	5,676.2	2.12	11
GUAD-59C-1	299.0	302.8	3.8	1.7241	5,548.2	2.10	7
GUAD-60C-1	304.0	305.9	1.9	1.6725	5,382.1	2.04	8
GUAD-61C-1	309.0	311.2	2.2	1.7465	5,620.2	2.21 (H)	7
GUAD-62C-1	314.0	315.4	1.4	1.7094	5,500.8	2.09	6
GUAD-64C-1	324.0	329.0	5.0	1.6615	5,346.7	2.01	9
GUAD-65C-1	329.0	332.2	3.2	1.7032	5,480.9	2.05	2
GUAD-66C-1	334.0	338.6	4.6	1.7404	5,600.6	2.13	6
GUAD-67C-1	339.0	341.7	2.7	1.752	5,637.9	2.26 (H)	8
GUAD-68C-1	344.0	346.4	2.4	—	—	2.38 (H)	23
GUAD-70C-1	354.0	358.5	4.5	1.7058	5,489.3	2.09	8
GUAD-71C-1	359.0	361.9	2.9	1.7458	5,618.0	2.11	0
GUAD-72C-1	364.0	365.2	1.2	—	—	2.38 (H)	19
GUAD-73C-1	369.0	370.8	1.8	1.7532	5,641.8	2.12	3
GUAD-74C-2	376.9	379.1	2.2	—	—	2.06	9

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
GUAD-75C-1	379.0	382.2	3.2	1.7413	5,603.5	2.09	16
GUAD-76C-1	384.0	385.9	1.9	1.7251	5,551.4	2.06	17
GUAD-77C-1	389.0	394.0	5.0	1.6585	5,337.1	2.05	18
GUAD-79C-1	399.0	403.7	4.7	1.6883	5,432.9	2.12 (H)	4
GUAD-80C-1	404.0	406.5	2.5	—	—	2.23 (H)	11
GUAD-81C-1	409.0	411.2	2.2	—	—	2.32 (H)	25
GUAD-82C-1	414.0	417.8	3.8	1.7238	5,547.2	2.14	21
GUAD-83C-1	419.0	420.7	1.7	1.6596	5,340.6	2.04	9
GUAD-85C-1	429.0	433.2	4.2	1.7154	5,520.2	2.09	15
GUAD-88C-1	444.0	448.1	4.1	1.7156	5,520.8	2.16 (H)	3
GUAD-89C-1	449.0	450.4	1.4	1.7533	5,642.1	2.16	5
GUAD-90C-1	454.0	455.7	1.7	—	—	2.32 (H)	12
GUAD-92C-1	464.0	466.1	2.1	—	—	2.44 (H)	13
GUAD-93C-1	469.0	473.8	4.8	1.797	5,782.7	2.19 (H)	0
GUAD-94C-1	474.0	476.5	2.5	1.7369	5,589.3	2.14	10
GUAD-95C-1	479.0	483.7	4.7	1.7667	5,685.2	2.15 (H)	8
GUAD-96C-1	484.0	488.9	4.9	1.7105	5,504.4	2.14	11
GUAD-97C-1	489.0	494.0	5.0	1.7123	5,510.2	2.14	10
GUAD-98C-1	494.0	498.9	4.9	1.6885	5,433.6	2.08	13
GUAD-99C-1	499.0	503.5	4.5	1.75	5,631.5	2.15	18
GUAD-101C-1	509.0	509.8	0.8	1.6986	5,466.1	2.07	19
GUAD-102C-1	514.0	517.9	3.9	1.7938	5,772.4	2.15	20
GUAD-103C-1	519.0	523.7	4.7	1.6467	5,299.1	2.02	13
GUAD-104C-1	524.0	527.7	3.7	1.7627	5,672.4	2.13 (H)	19
GUAD-105C-1	529.0	531.6	2.6	1.6551	5,326.1	2.05	18
GUAD-106C-1	534.0	537.1	3.1	1.7329	5,576.5	2.11 (H)	26
GUAD-107C-1	539.0	541.2	2.2	1.6897	5,437.5	2.09	20
GUAD-108C-1	544.0	545.7	1.7	1.7646	5,678.5	2.19	17
GUAD-109C-1	549.0	551.9	2.9	—	—	2.26 (H)	21
GUAD-110C-1	554.0	556.5	2.5	1.7863	5,748.3	2.18	19
GUAD-111C-1	559.0	562.0	3.0	1.7215	5,539.8	2.13 (H)	7
GUAD-112C-1	564.0	565.8	1.8	1.7437	5,611.2	2.11	6
GUAD-114C-1	574.0	578.0	4.0	1.8198	5,856.1	2.19	3
GUAD-115C-1	579.0	580.0	1.0	—	—	2.10	6
GUAD-116C-1	584.0	587.8	3.8	1.7874	5,751.9	2.16	11
GUAD-117C-1	589.0	591.7	2.7	—	—	2.29 (H)	17
GUAD-119C-1	599.0	601.0	2.0	1.708	5,496.3	2.10	12
GUAD-121C-1	609.0	613.9	4.9	1.677	5,396.6	2.04	14
GUAD-122C-1	614.0	618.5	4.5	—	—	2.13	20
GUAD-123C-1	619.0	623.1	4.1	1.7468	5,621.2	2.08	19
GUAD-124C-1	624.0	628.9	4.9	1.7126	5,511.1	2.01 (H)	0
GUAD-125C-1	629.0	632.8	3.8	1.7008	5,473.2	2.11	10
GUAD-126C-1	634.0	638.8	4.8	1.7497	5,630.5	2.17 (H)	0
GUAD-127C-1	639.0	643.1	4.1	1.6765	5,395.0	2.12	6
GUAD-128C-1	644.0	647.7	3.5	1.805	5,808.5	2.17 (H)	8

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
GUAD-129C-1	648.8	653.6	4.8	1.712	5,509.2	2.10 (H)	10
GUAD-130C-1	654.0	656.3	2.3	—	—	2.38 (H)	22
GUAD-131C-1	659.0	662.9	3.9	1.7384	5,594.2	2.16	16
GUAD-132C-1	664.0	667.0	3.0	—	—	2.32 (H)	12
GUAD-133C-1	669.0	670.3	1.3	—	—	2.32 (H)	24
GUAD-134C-1	674.0	677.8	3.8	1.7666	5,684.9	2.17 (H)	20
GUAD-135C-1	679.0	682.6	3.6	1.7476	5,623.8	2.21 (H)	28
GUAD-136C-1	684.0	687.4	3.4	1.706	5,489.9	2.10	22
GUAD-137C-1	689.0	693.9	4.9	1.7763	5,716.1	2.14 (H)	22
GUAD-138C-1	694.0	698.1	4.1	1.6971	5,461.3	2.11	20
GUAD-139C-1	699.0	703.6	4.6	1.7847	5,743.2	2.19 (H)	20
GUAD-140C-1	704.0	707.1	3.1	1.7345	5,581.6	2.12 (H)	10
GUAD-141C-1	709.0	710.9	1.9	1.7035	5,481.9	2.20 (H)	10
GUAD-142C-1	714.0	717.8	3.8	1.7021	5,477.4	2.08	0
GUAD-143C-1	719.0	720.5	1.5	1.7034	5,481.5	2.07	4
GUAD-144C-1	722.0	723.8	1.8	1.663	5,351.5	2.10 (H)	7
GUAD-145C-1	724.0	726.3	2.3	1.8097	5,823.6	2.28 (H)	25
GUAD-148C-1	739.0	740.2	1.2	1.708	5,496.3	2.09	2
GUAD-149C-1	741.5	743.6	2.1	1.7502	5,632.1	2.09	0
GUAD-150C-1	744.0	748.4	4.4	1.7056	5,488.6	2.04	8
GUAD-151C-1	749.0	753.8	4.8	1.5334	4,934.5	1.47	0
GUAD-152C-1	754.0	758.8	4.8	1.6881	5,432.3	2.08	20
GUAD-153C-1	759.0	762.3	3.3	1.7659	5,682.7	2.19 (H)	27
GUAD-155C-1	769.0	774.0	5.0	1.7411	5,602.9	2.14	0
GUAD-157C-1	779.0	783.1	4.1	1.8003	5,793.4	2.20 (H)	0
GUAD-159C-1	789.0	793.9	4.9	1.7669	5,685.9	2.11	28
GUAD-160C-2	794.0	797.6	3.6	1.7384	5,594.2	2.11	9
GUAD-161C-1	799.0	802.9	3.9	1.8333	5,899.6	2.20	0
GUAD-162C-1	804.0	807.2	3.2	1.7328	5,576.2	2.31 (H)	0
GUAD-163C-1	809.0	811.8	2.8	—	—	2.41 (H)	15
GUAD-164C-1	814.0	815.6	1.6	—	—	2.42 (H)	13
GUAD-165C-1	819.0	821.1	2.1	—	—	2.42 (H)	17
GUAD-166C-1	824.0	826.9	2.9	1.7254	5,552.3	2.13	0
GUAD-167C-1	829.0	830.1	1.1	1.7346	5,581.9	2.08	6
GUAD-168C-1	834.0	836.9	2.9	1.7648	5,679.1	2.36 (H)	0
GUAD-169C-1	839.0	842.3	3.3	1.8011	5,795.9	2.19 (H)	38
GUAD-170C-1	844.0	848.2	4.2	1.686	5,425.5	2.09	40
GUAD-171C-1	849.0	852.4	3.4	1.7239	5,547.5	2.05	0
GUAD-172C-1	854.0	855.5	1.5	1.7694	5,693.9	2.13	0
GUAD-173C-1	859.0	863.9	4.9	1.8037	5,804.3	2.14 (H)	0
GUAD-175C-1	869.0	873.2	4.2	1.8001	5,792.7	2.17 (H)	20
GUAD-176C-1	874.0	878.4	4.4	1.7022	5,477.7	2.11 (H)	0
GUAD-177C-1	879.0	882.3	3.3	1.7352	5,583.9	2.17	13

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
GUAD-178C-1	884.0	887.2	3.2	1.798	5,786.0	2.18 (H)	15
GUAD-179C-1	889.0	893.8	4.8	1.5601	5,020.4	1.55	0
GUAD-180C-1	894.0	898.9	4.9	1.7998	5,791.8	2.19 (H)	37
GUAD-181C-1	899.0	902.1	3.1	1.6963	5,458.7	2.10	25
GUAD-182C-1	904.0	907.7	3.7	1.7211	5,538.5	2.14 (H)	34
GUAD-183C-1	909.0	913.9	4.9	1.6603	5,342.8	2.08 (H)	25
GUAD-184C-1	914.0	918.8	4.8	1.7366	5,588.4	2.16 (H)	42
GUAD-185C-1	919.0	920.6	1.6	1.6742	5,387.6	2.10	22
GUAD-186C-1	924.0	928.2	4.2	1.7351	5,583.6	2.09	0
GUAD-187C-1	929.0	933.9	4.9	1.5978	5,141.7	2.00	30
GUAD-188C-1	934.0	936.8	2.8	1.7617	5,669.2	2.11 (H)	27
GUAD-192C-1	949.0	954.0	5.0	1.6714	5,378.6	2.01 (H)	31
GUAD-193C-1	954.0	958.0	4.0	1.715	5,518.9	2.15	54
GUAD-194C-1	959.0	963.0	4.0	1.809	5,821.4	2.19 (H)	53
GUAD-195C-1	964.0	968.1	4.1	1.6992	5,468.0	2.09	40
GUAD-196C-1	969.0	973.9	4.9	1.6489	5,306.2	2.06 (H)	39
GUAD-197C-1	974.0	977.5	3.5	1.7135	5,514.0	2.14	60
GUAD-198C-1	979.0	983.9	4.9	1.6408	5,280.1	1.76	0
GUAD-199C-1	984.0	987.3	3.3	1.7176	5,527.2	2.11	20
GUAD-200C-1	989.0	990.8	1.8	1.7284	5,562.0	2.12	15
GUAD-201C-1	994.0	996.5	2.5	1.6567	5,331.3	2.02 (H)	10
EVGR-1C-1	0.5	3.5	3.0	—	—	2.21 (H)	28
EVGR-2C-1	4.5	7.2	2.7	—	—	2.12	29
EVGR-3C-1	9.5	12.6	3.1	—	—	2.23 (H)	36
EVGR-4C-1	14.5	18.8	4.3	—	—	2.29 (H)	22
EVGR-5C-1	19.5	23.7	4.2	—	—	2.28 (H)	17
EVGR-6C-1	24.5	27.8	3.3	—	—	2.33 (H)	14
EVGR-7C-1	29.5	32.9	3.4	—	—	2.25 (H)	20
EVGR-8C-1	34.5	36.9	2.4	1.7058	5,489.3	2.25 (H)	16
EVGR-9C-1	39.5	43.9	4.4	1.7255	5,552.7	2.30 (H)	12
EVGR-10C-2	44.5	46.7	2.2	1.654	5,322.6	2.16 (H)	24
EVGR-10C-1	47.7	49.3	1.6	1.7474	5,623.1	2.19 (H)	21
EVGR-11C-1	49.5	54.2	4.7	1.681	5,409.5	2.22 (H)	19
EVGR-13C-1	59.5	64.4	4.9	1.65	5,309.7	2.08 (H)	18
EVGR-14C-1	179.5	184.2	4.7	1.7829	5,737.4	2.21 (H)	23
EVGR-15C-1	184.5	189.0	4.5	1.6745	5,388.5	2.31 (H)	33
EVGR-16C-1	189.5	192.0	2.5	1.809	5,821.4	2.25 (H)	22
EVGR-17C-1	194.5	199.2	4.7	1.7475	5,623.5	2.18 (H)	35
EVGR-18C-1	239.5	244.4	4.9	1.7783	5,722.6	2.19 (H)	19
EVGR-19C-1	244.5	247.2	2.7	1.7689	5,692.3	2.18	22
EVGR-20C-1	249.5	251.4	1.9	1.8065	5,813.3	2.14	12
EVGR-21C-1	254.5	257.6	3.1	1.7655	5,681.4	2.19	8
EVGR-22C-1	294.5	299.0	4.5	1.7305	5,568.7	2.18 (H)	16
EVGR-23C-1	299.5	304.4	4.9	1.7471	5,622.2	2.13 (H)	19
EVGR-24C-1	304.5	309.1	4.6	1.7705	5,697.5	2.19 (H)	15

Table 11. Summary of multi-sensor logging data for cores collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core ID (Site-core #-section)	Depth to top of core (ft bls)	Depth to bottom of core (ft bls)	Total core length (ft)	Primary velocity (km/sec)	Average core velocity (ft/sec)	Average core density (g/cm^3)	Average core magnetic susceptibility (unitless)
EVGR-25C-1	309.5	314.1	4.6	1.734	5,580.0	2.23 (H)	19
EVGR-26C-1	394.5	398.0	3.5	—	—	2.33 (H)	44
EVGR-27C-1	399.5	404.1	4.6	1.7692	5,693.3	2.26 (H)	21
EVGR-28C-1	404.5	406.7	2.2	—	—	2.20 (H)	30
EVGR-29C-1	407.0	409.0	2.0	1.7488	5,627.6	2.17	20
EVGR-30C-1	409.5	414.0	4.5	1.8055	5,810.1	2.24 (H)	18
EVGR-31C-1	449.5	454.0	4.5	1.7359	5,586.1	2.31 (H)	22
EVGR-32C-1	454.5	458.2	3.7	1.8127	5,833.3	2.30 (H)	24
EVGR-34C-1	464.5	469.3	4.8	1.7559	5,650.5	2.20 (H)	26
EVGR-35C-1	539.5	543.2	3.7	1.8321	5,895.7	2.33 (H)	32
EVGR-36C-1	544.5	549.1	4.6	1.8409	5,924.0	2.25 (H)	26
EVGR-37C-1	574.5	578.4	3.9	1.8248	5,872.2	2.25 (H)	33
EVGR-38C-1	579.5	582.1	2.6	1.7639	5,676.2	2.18	30
EVGR-39C-1	582.0	586.8	4.8	1.7543	5,645.3	2.16 (H)	13
EVGR-40C-1	587.0	591.9	4.9	1.8096	5,823.3	2.21 (H)	14
EVGR-41C-2	592.0	596.8	4.8	1.7692	5,693.3	2.25 (H)	33
EVGR-42C-1	644.5	648.0	3.5	1.8352	5,905.7	2.27 (H)	28
EVGR-43C-1	649.5	653.9	4.4	1.882	6,056.3	2.34 (H)	30
EVGR-44C-1	654.5	659.4	4.9	—	—	2.38 (H)	22
EVGR-45C-1	769.5	772.2	2.7	1.8231	5,866.7	2.24 (H)	20
EVGR-46C-1	774.5	777.9	3.4	1.8298	5,888.3	2.31 (H)	15
EVGR-47C-1	779.5	780.7	1.2	1.7987	5,788.2	2.37 (H)	24
EVGR-48C-1	784.5	789.5	5.0	—	—	2.22 (H)	12
EVGR-49C-1	900.5	904.1	3.6	1.8309	5,891.8	2.20 (H)	15
EVGR-50C-1	905.5	907.9	2.4	1.7819	5,734.2	2.32 (H)	14
EVGR-52C-1	989.5	991.0	1.5	1.8356	5,907.0	2.26 (H)	26
EVGR-53C-1	994.5	996.1	1.6	1.8037	5,804.3	2.18 (H)	15
EVGR-54C-1	999.4	1,004.3	4.9	1.8039	5,805.0	2.18 (H)	19

Table 12. Summary of consolidation analysis for selected core samples collected from multiple-well monitoring sites, Santa Clara County, California

[see table 1 for definitions of acronyms in first column; kg/cm^2, kilometer per square centimeter; ft, foot; bls, below land surface; —, indicates no data estimated]

Core No.	Depth to top of core interval (ft bls)	Depth to bottom of core interval (ft bls)	Maximum past stress, (kg/cm^2)	Coefficient of inelastic consoli-dation (C_c)	Coefficient of elastic consoli-dation (C_r)	General lithology	Initial void ratio (e_o)	Inelastic specific storage (per ft)	Elastic specific storage (per ft)
CCOC-5C-1	26	31	—	—	0.02	Clayey silt	0.69	—	—
CCOC-17C-1	81	86	—	—	.01	Clayey silt	.54	—	—
CCOC-20C-1	96	101	—	—	.03	Silty clay	.77	—	—
CCOC-23C-1	111	116	10	0.36	.02	Clay	.768	2.70×10^{-4}	1.50×10^{-5}
CCOC-29C-1	231	236	24.4	.194	.01	Clayey silt	.582	6.60×10^{-5}	3.40×10^{-6}
CCOC-34C-1	256	261	22.2	.35	.03	Clayey silt	.736	1.20×10^{-4}	1.00×10^{-5}
CCOC-35C-1	261	266	28	.4	.01	Sand	.736	1.10×10^{-4}	2.70×10^{-6}
CCOC-40C-1	476	481	26.6	.24	.02	Sand-silt-clay	.597	7.50×10^{-5}	6.20×10^{-6}
CCOC-46C-1	551	553.5	26.6	.32	.03	Sand-silt-clay	.652	9.60×10^{-5}	9.00×10^{-6}
CCOC-49C-1	561	566	29	.33	.02	Clayey silt	.889	8.00×10^{-5}	4.80×10^{-6}
CCOC-55C-1	588.5	592	22	.18	.01	Sand-silt-clay	.447	7.50×10^{-5}	4.20×10^{-6}
CCOC-60C-1	671	676	35.3	.32	.02	Sand-silt-clay	.891	6.30×10^{-5}	4.00×10^{-6}
CCOC-65C-1	731	736	24	.29	.04	Silty clay	.663	9.60×10^{-5}	1.30×10^{-5}
CCOC-71C-1	881	886	24.2	.23	.01	Clayey silt	.729	7.30×10^{-5}	3.20×10^{-6}
CCOC-75C-1	961	966	38.2	.39	.03	Clay	1	6.80×10^{-5}	5.20×10^{-6}
WLLO2-3C-1	40	45	—	—	.03	Silty clay	.95	—	—
WLLO2-5C-1	40	45	—	—	.01	Sandy-silty clay	.69	—	—
WLLO2-6C-1	50	55	—	—	.003	Sand and silt	.53	—	—
WLLO1-16C-1	300	305	20	.42	.04	Stiff silty clay	.851	1.50×10^{-4}	1.40×10^{-5}
WLLO1-17C-1	305	310	23	.34	.02	Sand-silt-clay	.66	1.20×10^{-4}	6.90×10^{-6}
WLLO1-18C-1	310	315	23	.33	.01	Sand-silt-clay	.758	1.10×10^{-4}	3.30×10^{-6}
WLLO1-28C-1	670	673	32	.4	.04	Stiff silty clay	.826	9.90×10^{-5}	9.90×10^{-6}
WLLO1-31C-1	735	738	36.3	.29	.03	Very stiff silty clay	.67	6.00×10^{-5}	6.20×10^{-6}
WLLO1-33C-1	741	746	—	—	.05	Silt-clay	.75	—	—
WLLO1-34C-1	746	750	25	.52	.07	Sand-silt-clay	1.451	1.60×10^{-4}	2.10×10^{-5}
WLLO1-36C-1	755	760	32	.32	.03	Silty clay	.727	8.30×10^{-5}	7.80×10^{-6}
WLLO1-37C-1	780	785	—	—	0	Silt-clay	.6	—	—
MGCY-23C-1	154	159	—	—	.01	Fine sand	.77	—	—
MGCY-30C-1	249	251.5	20	.3	.02	Silty sand	.657	9.30×10^{-5}	6.20×10^{-6}
MGCY-44C-1	419	421.5	32	.42	.07	Silt-clay	1.123	1.10×10^{-4}	1.80×10^{-5}
MGCY-45C-1	421.5	424	—	—	.04	Silt-clay	.57	—	—
MGCY-46C-1	424	429	—	—	.03	Sand-silt-clay	.54	—	—
MGCY-51C-1	494	499	—	—	.02	Sand-silt-clay	.53	—	—
MGCY-58C-1	584	589	—	—	.03	Sand-silt-clay	.47	—	—
MGCY-71C-1	714	719	40	.3	.02	Stiff silt	.8	0	0
STPK-1C-1	30	34	—	—	.01	Silt-sand-clay	—	—	—
STPK-11C-1	184	189	13	.13	.02	Clay	.46	1.30×10^{-4}	2.00×10^{-5}
STPK-15C-1	229	234	—	—	.02	Silt-clay	—	—	—
STPK-29C-1	454	459	24	.3	.03	Silt-clay-sand	.531	1.70×10^{-4}	1.70×10^{-5}
STPK-46C-1	664	669	33	.26	.01	Sand-silt	.531	1.00×10^{-4}	4.00×10^{-6}
STPK-51C-1	714	719	24	.26	.03	Silt-sand-clay	.469	1.40×10^{-4}	1.70×10^{-5}
STPK-52C-1	719	724	27	0.23	0.01	Sand-silt-clay	0.431	1.10×10^{-4}	4.90×10^{-6}
STPK-64C-1	874	878	—	—	.04	Silty clay	—	—	—

Table 12. Summary of consolidation analysis for selected core samples collected from multiple-well monitoring sites, Santa Clara County, California—Continued

Core No.	Depth to top of core interval (ft bls)	Depth to bottom of core interval (ft bls)	Maximum past stress, (kg/cm^2)	Coefficient of inelastic consolidation (C_c)	Coefficient of elastic consolidation (C_r)	General lithology	Initial void ratio (e_o)	Inelastic specific storage (per ft)	Elastic specific storage (per ft)
GUAD-7C-1	39	44	3.2	.28	.03	Silty clay	.9024	1.20×10^{-3}	1.20×10^{-4}
GUAD-16C-1	84	89	9.2	.23	.01	Silty clay	.581	3.30×10^{-4}	1.40×10^{-5}
GUAD-22C-1	114	119	10	.3	.05	Clay	.7143	4.00×10^{-4}	6.60×10^{-5}
GUAD-30C-1	154	159	7.4	.44	—	Clay	.8595	7.90×10^{-4}	
GUAD-30C-1	154	159	7.6	.38	.08	Clay	.8	6.60×10^{-4}	1.40×10^{-4}
GUAD-35C-1	179	184	13	.57	.1	Clay	.9405	5.80×10^{-4}	1.00×10^{-4}
GUAD-40C-1	204	209	—	—	.03	Silty sand-silty clay	—	—	—
GUAD-40C-1	204	209	—	—	.03	Silty clay	—	—	—
GUAD-54C-1	274	279	23.4	.46	.04	Clay	.75	2.60×10^{-4}	2.30×10^{-5}
GUAD-54C-1	274	279	25	.28	.04	Silty clay	.8	1.50×10^{-4}	2.10×10^{-5}
GUAD-70C-1	354	359	23	.41	.06	Silty clay	.681	2.40×10^{-4}	3.50×10^{-5}
GUAD-80C-1	404	409	24	.26	.01	Silty sand	.491	1.40×10^{-4}	5.50×10^{-6}
GUAD-82C-1	414	419	—	—	.03	Silty clay-silt	—	—	—
GUAD-85C-1	429	434	—	—	.01	Silty sand	—	—	—
GUAD-88C-1	444	449	—	—	.03	Silty clay	—	—	—
GUAD-98C-1	494	499	—	—	.03	Silty clay	—	—	—
GUAD-107C-1	539	544	—	—	.01	Silty clay-very fine sand	—	—	—
GUAD-114C-1	574	579	30	.29	.03	Silty clay/clay	.519	1.30×10^{-4}	1.30×10^{-5}
GUAD-122C-1	614	619	25.4	.34	.04	Silty clay	.619	1.80×10^{-4}	2.10×10^{-5}
GUAD-139C-1	699	704	—	—	.02	Silty clay	—	—	—
GUAD-166C-1	824	829	—	—	.02	Silty-clayey sand	—	—	—
GUAD-186C-1	924	929	44	.38	.04	Silty clay	.569	1.10×10^{-4}	1.20×10^{-5}
GUAD-198C-1	979	984	40	.48	.04	Clay	.65	1.60×10^{-4}	1.30×10^{-5}
EVGR-18C-1	239.5	244.5	30	.24	.02	Silty clay	.469	1.10×10^{-4}	8.80×10^{-6}
EVGR-22C-1	294.5	299.5	—	—	.02	Clayey silt	—	—	—
EVGR-24C-1	304.5	309.5	—	—	.01	Pebbly sand-silt	—	—	—
EVGR-29C-1	407	409.5	—	—	.02	Clayey silt	—	—	—
EVGR-37C-1	574.5	579.5	37	.2	.02	Sandy silty clay	.46	7.20×10^{-5}	7.20×10^{-6}
EVGR-41C-2	597.1	597.4	41	.18	.02	Sandy silt	.391	5.80×10^{-5}	6.50×10^{-6}
EVGR-41C-2	597.1	597.4	—	—	.02	Sandy silt	—	—	—
EVGR-49C-1	900.5	905.5	—	—	.03	Silty clay	—	—	—
EVGR-54C-1	999.5	1004.5	—	—	.03	Clayey silt	—	—	—

Table 13. Summary of hydraulic property estimates from selected core samples collected from multiple-well monitoring sites, Santa Clara County, California

[See table one for definition of acronyms in column one; ft, foot; ft/day, foot per day; bls, below land surface; g/cm^3, gram per cubic centimer; cm^3/cm^3, cubic centimeter per cubic centimer]

Core No.	Core sample depth interval (ft bls)	General lithology	Vertical hydraulic conduc-tivity (ft/day)	Particle density (g/cm^3)	Bulk density (g/cm^3)	Porosity (cm^3/cm^3)	Volu-metric water content (cm^3/cm^3)	Initial saturation (percent)	Residual water content (cm^3/cm^3)	Effective porosity (cm^3/cm^3)	Effective satu-ration (cm^3/ cm^3)
CCOC-5C-1	29.38–29.87	Clay	0.0051	2.667	1.55	0.42	0.406	0.966	0.025	0.40	0.963
CCOC-19C-1	91.0–91.49	Silt-clay	.0014	2.636	1.51	.426	.411	.964	.07	.36	.957
CCOC-20C-1	99.71–100.20	Silty clay	.0014	2.642	1.59	.397	.374	.944	.043	.35	.937
CCOC-24C-1	119.90–120.42	Silt-clay	.075	2.668	1.58	.407	.388	.952	.017	.39	.950
CCOC-27C-1	128.50–128.99	Gravelly clay	.0009	2.619	1.74	.336	.326	.971	.041	.30	.967
CCOC-31C-1	243.82–244.31	Gravel-sand-clay	.078	2.703	2.08	.232	.21	.903	.024	.21	.892
CCOC-35C-1	263.6–264.1	Silt-clay	.074	2.658	1.67	.371	.351	.944	.03	.34	.940
CCOC-39C-1	471.43–471.99	Silt-clay	.0011	2.649	1.74	.344	.333	.967	.04	.30	.962
CCOC-48C-1	559.52–560.01	Clay	.0031	2.672	1.94	.274	.219	.799	.051	.22	.752
CCOC-54C-1	587.90–588.40	Clay	.0008	2.662	1.96	.263	.121	.461	.047	.22	.345
CCOC-76C-1	968.52–969.01	Gravel-sand-clay	.032	2.708	1.96	.278	.246	.887	.029	.25	.873
WLLO1-33C-1	745.10–745.59	Sand-silt-clay	.32	2.633	1.61	.39	.369	.947	.054	.34	.938

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California

[Major chemistry data for ELNR wells came from Santa Clara Valley Water District; number in parentheses below the compound is the data parameter code, which is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; °C, degrees Celsius; µS/cm, microseimen per centimeter; mg/L, milligram per liter; µg/L, microgram per liter; pmc, percent modern carbon; per mil, parts per thousand; pCi/L, picocuries per liter; —, no data; <, less than; E, estimated data; M, presence of constituent verified but not quantified; ND, not detected; NT, no trace]

State well No.	Local well name	Depth of screened interval	Date	Time	Water temperature (°C) (00010)	Air temperature (°C) (00020)	Total dissolved solids (mg/L) (70300)
5S/3W-36P2	ELNR-1	830–850	04/15/2003	1545	26	—	1,500
5S/3W-36P3	ELNR-2	720–740	04/15/2003	1430	26	—	2,700
5S/3W-36P4	ELNR-3	540–560	04/14/2003	1715	24.5	—	770
5S/3W-36P5	ELNR-4	180–200	04/14/2003	1615	21	—	440
6S/1W-26Q1	GUAD-1	810–830	11/19/2002	1400	22.5	—	322
6S/1W-26Q2	GUAD-2	580–600	11/19/2002	1600	23	—	249
6S/1W-26Q3	GUAD-3	440–460	11/20/2002	1140	21.5	—	341
6S/1W-26Q4	GUAD-4	310–330	07/23/2003	1400	21.5	—	253
7S/1E-9L4	CCOC-1	820–840	10/24/2000	1610	23.5	22.5	345
7S/1E-9L4	CCOC-1	820–840	08/30/2001	1630	24	—	334
7S/1E-9L5	CCOC-2	620–640	10/23/2000	1315	23.5	23	406
7S/1E-9L5	CCOC-2	620–640	08/29/2001	1630	22.5	—	356
7S/1E-9L6	CCOC-3	520–540	10/23/2000	1404	20.5	24	492
7S/1E-9L6	CCOC-3	520–540	08/29/2001	1300	21.4	—	—
7S/1E-9L7	CCOC-4	405–425	10/23/2000	1630	21.5	24	528
7S/1E-9L7	CCOC-4	405–425	08/29/2001	1010	20.2	—	—
7S/1E-9L8	CCOC-5	62–72	10/24/2000	1015	19	18.5	658
7S/1E-9L8	CCOC-5	62–72	08/28/2001	1540	20.4	—	—
7S/1E-19B2	WLLO-1	770–790	04/24/2001	1530	24.5	—	520
7S/1E-19B3	WLLO-2	570–590	04/26/2001	1130	23.3	—	324
7S/1E-19B4	WLLO-3	435–455	04/25/2001	1210	23.7	—	402
7S/1E-19B4	WLLO-3	435–455	12/17/2001	1500	—	—	—
7S/1E-19B5	WLLO-4	345–365	04/25/2001	1500	22.4	—	—
7S/1E-19B5	WLLO-4	345–365	08/31/2001	1030	19.7	—	508
7S/1E-19B5	WLLO-4	345–365	12/17/2001	1540	—	—	—
7S/1E-19B6	WLLO-5	220–240	04/25/2001	1730	21	—	521
7S/1E-19B6	WLLO-5	220–240	12/17/2001	1640	—	—	—
7S/1E-19B7	WLLO-6	75–85	04/25/2001	1000	20.7	—	493
7S/1W-14P1	STPK-1	680–700	04/04/2002	1900	18.5	12.5	293
7S/1W-14P2	STPK-2	540–560	04/03/2002	1750	19.5	—	299
7S/1W-14P3	STPK-3	420–440	04/02/2002	1230	20	22	358
7S/1W-14P4	STPK-4	340–360	04/01/2002	1720	19.5	18.5	342
7S/1W-14P5	STPK-5	130–150	04/04/2002	1600	17.5	15.5	617
7S/1W-35L13	MGCY-2	510–530	12/12/2001	1330	20.4	—	288
7S/1W-35L14	MGCY-3	390–410	12/16/2001	2030	21.5	10	292
7S/1W-35L15	MGCY-4	280–300	12/11/2001	1500	21.7	15	732
7S/1W-35L16	MGCY-5	160–180	12/11/2001	1200	20.8	—	312
7S/1W-35L12	MGCY-1	630–650	12/13/2001	2000	21.5	11.5	744

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Field, specific conductance (μS/cm@25°C) (00095)	Lab, specific conductance (μS/cm) (90095)	Dissolved oxygen (mg/L) (00300)	Field pH (Standard units) (00400)	Lab pH (Standard units) (00403)	Field, alkalinity (mg/L as $CaCO_3$) (39036)	Lab, alkalinity (mg/L as $CaCO_3$) (29801)	Field, incremental alkalinity (mg/L) (39086)
ELNR-1	2,710	2,570	—	7.8	8.0	—	165	—
ELNR-2	4,480	4,540	—	7.4	8.0	—	111	—
ELNR-3	1,140	1,420	—	7.9	8.0	—	172	—
ELNR-4	782	737	—	7.7	8.3	—	250	—
GUAD-1	549	522	—	8	8.1	—	176	—
GUAD-2	411	393	—	8	8	—	158	—
GUAD-3	560	532	—	7.8	7.9	—	201	—
GUAD-4	388	398	1	7.8	7.9	—	177	—
CCOC-1	626	632	0.2	7.8	7.9	170	182	—
CCOC-1	614	617	0.1	7.8	8	—	177	—
CCOC-2	670	677	0.2	7.9	7.8	190	208	—
CCOC-2	668	664	0.2	7.7	7.9	—	204	—
CCOC-3	822	823	0.2	7.5	7.6	260	284	—
CCOC-3	789	—	0.1	7.4	—	—	—	—
CCOC-4	875	883	0.6	7.7	7.6	320	334	—
CCOC-4	834	—	0.1	7.4	—	—	—	—
CCOC-5	1,070	1,090	0.5	7.3	7.4	400	411	—
CCOC-5	888	—	0.5	7.2	—	—	—	—
WLLO-1	867	881	0.1	7.6	7.8	170	175	168
WLLO-2	557	553	0.2	7.6	8.3	200	204	201
WLLO-3	647	652	2.7	7.4	7.6	200	210	204
WLLO-3	—	—	—	—	—	—	—	—
WLLO-4	850	—	4.6	7.2	—	—	—	—
WLLO-4	838	834	5.9	7.3	7.6	—	265	242
WLLO-4	—	—	—	—	—	—	—	—
WLLO-5	829	841	6.6	7.3	7.5	260	268	259
WLLO-5	—	—	—	—	—	—	—	—
WLLO-6	786	789	2.7	6.8	6.8	230	243	231
STPK-1	473	483	6.9	7.8	7.8	150	158	—
STPK-2	506	513	6	7.6	7.8	120	135	—
STPK-3	555	563	6.3	7.6	7.6	150	158	—
STPK-4	563	569	7.3	7.4	7.6	150	170	—
STPK-5	973	985	—	7.4	7.4	320	354	—
MGCY-2	471	484	1.5	7	8	120	132	—
MGCY-3	471	489	2.4	7.4	7.8	170	189	—
MGCY-4	1,300	1,340	0.2	7.8	8	280	296	—
MGCY-5	566	559	0.6	6.9	7.5	93	102	—
MGCY-1	1,330	1,360	0.9	8.1	8.1	280	306	—

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Calcium (mg/L) (00915)	Magnesium (mg/L) (00925)	Sodium (mg/L) (00930)	Potassium (mg/L) (00935)	Chloride (mg/L) (00940)	Sulfate (mg/L) (00945)	Fluoride (mg/L) (00950)	Field, bicarbonate (mg/L) (29804)	Incremental bicarbonate (mg/L) (00453)
ELNR-1	93.7	18.1	447.4	1.98	750	5.5	0.1	—	—
ELNR-2	22.0	47.9	649	2.50	1,360	2.2	.1	—	—
ELNR-3	45.1	11.9	237	.84	360	10.4	.1	—	—
ELNR-4	57.6	11.6	96.4	1.25	66	55.6	.2	—	—
GUAD-1	20.7	7.54	95.4	1.11	65.1	11.6	<.17	—	—
GUAD-2	29.1	9.42	47.9	1.06	22.7	26.2	<.17	—	—
GUAD-3	58.6	16.2	38.5	1.24	25.8	54.8	<.17	—	—
GUAD-4	41.3	11.4	29.7	1.02	9.24	28.8	.2	—	—
CCOC-1	22.3	9.67	94.7	1.11	77.9	21.7	E.2	—	—
CCOC-1	23.2	10	94	1.04	78.8	19.4	.2	—	—
CCOC-2	51.9	16.8	60.4	1.48	39.5	60.2	E.1	—	—
CCOC-2	55.1	17.7	63.2	1.21	42.1	61.7	E.1	—	—
CCOC-3	74	30.7	50.9	1.87	55.3	62.6	E.1	—	—
CCOC-3	—	—	—	—	—	—	—	—	—
CCOC-4	74.1	36.6	55.5	3.08	38.6	78.9	.2	—	—
CCOC-4	—	—	—	—	—	—	—	—	—
CCOC-5	90.6	65.1	46.1	1.88	63	101	.2	—	—
CCOC-5	—	—	—	—	—	—	—	—	—
WLLO-1	39.4	32.7	83.1	1.98	152	29.2	E.1	205	205
WLLO-2	37.2	15.7	58.5	1.53	29.7	33.9	E.1	243	245
WLLO-3	66.8	19.9	35.1	1.85	40.5	44.8	E.1	245	249
WLLO-3	—	—	—	—	—	—	—	—	—
WLLO-4	—	—	—	—	—	—	—	—	—
WLLO-4	98.9	27.3	41.6	1.88	60	67.2	E.1	—	—
WLLO-4	—	—	—	—	—	—	—	—	—
WLLO-5	90.5	30.1	35.2	2.19	47.9	67.9	E.1	316	316
WLLO-5	—	—	—	—	—	—	—	—	—
WLLO-6	70.5	34.2	37.9	1.7	47.5	69.2	E.1	279	282
STPK-1	48.1	15.7	27.8	1.5	29.2	42.2	.1	—	—
STPK-2	49.3	18	25.4	1.42	53.5	39.6	.2	—	—
STPK-3	55.7	21.8	26.2	1.58	51.9	49.7	.1	—	—
STPK-4	57.4	20.8	26.9	1.47	44	51.2	.1	—	—
STPK-5	100	40.4	53.7	2.63	58.5	75	.2	—	—
MGCY-2	51.7	16.9	18.7	1.18	43.6	50.4	.1	—	—
MGCY-3	47.7	17.4	27.9	1.44	18.4	38.9	.1	—	—
MGCY-4	16.4	9.41	241	.62	249	1.6	E.1	—	—
MGCY-5	32.7	16.2	52.1	3.14	81.3	46	.2	—	—
MGCY-1	13.9	8.84	261	.55	256	.5	E.1	—	—

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Nitrite as nitrogen (mg/L as N) (00613)	Nitrite plus nitrate as nitrogen (mg/L as N) (00631)	Organic ammonia (mg/L as N) (00623)	Nitrogen, ammonia (mg/L as N) (00608)	Phosphorus (mg/L as P) (00666)	Ortho-phosphate (mg/L as P) (00671)	Organic carbon (mg/L as C) (00681)
ELNR-1	—	—	—	—	—	—	—
ELNR-2	—	—	—	—	—	—	—
ELNR-3	—	—	—	—	—	—	—
ELNR-4	—	—	—	—	—	—	—
GUAD-1	<0.008	<0.06	E0.09	E0.03	0.09	0.07	E0.3
GUAD-2	<.008	<.06	E.06	<.04	.12	.1	E.2
GUAD-3	.01	1.36	E.05	<.04	.12	.09	E.2
GUAD-4	—	—	—	—	—	—	E.2
CCOC-1	.011	.07	<.10	<.04	E.05	.04	.2
CCOC-1	<.006	E.03	<.10	<.04	E.03	E.03	—
CCOC-2	.021	6.29	<.10	E.03	E.06	.05	.4
CCOC-2	E.006	E5.47	<.10	<.04	E.04	E.03	—
CCOC-3	.103	3.75	E.05	E.04	.06	.06	.5
CCOC-3	—	—	—	—	—	—	—
CCOC-4	.103	3.31	.39	.4	.31	.28	.5
CCOC-4	—	—	—	—	—	—	—
CCOC-5	.04	1.95	E.06	E.03	E.06	.05	.6
CCOC-5	—	—	—	—	—	—	—
WLLO-1	<.006	<.05	<.10	<.04	1.3	.5	.2
WLLO-2	.049	3.46	<.10	<.04	.65	.23	.2
WLLO-3	.043	5.62	<.10	<.04	.31	.09	.3
WLLO-3	<.008	5.15	<.10	<.04	.3	.27	—
WLLO-4	.257	8.75	<.10	<.04	3.59	.4	—
WLLO-4	E.028	E8.02	<.10	<.04	1.38	E.51	.6
WLLO-4	E.007	7.41	<.10	<.04	1.47	1.25	—
WLLO-5	.21	9.3	<.10	<.04	.39	.12	.4
WLLO-5	.008	8.69	<.10	<.04	.28	.23	—
WLLO-6	.007	9.22	E.06	<.04	.09	.05	.5
STPK-1	E.006	1.08	<.10	<.04	.64	.24	.3
STPK-2	E.006	.94	<.10	<.04	.8	.28	1.7
STPK-3	.012	1.58	<.10	<.04	2.2	.42	.6
STPK-4	E.006	1.68	<.10	<.04	1.63	.23	.4
STPK-5	.089	6.56	<.10	<.04	2.39	.74	.7
MGCY-2	E.004	<.05	E.09	.07	.52	.48	.4
MGCY-3	<.008	.7	<.10	<.04	.35	.26	.4
MGCY-4	<.008	.44	E.07	E.02	1.7	1.01	<.3
MGCY-5	<.008	.48	<.10	<.04	1.17	.24	.9
MGCY-1	<.008	<.05	.13	.09	.22	.2	.4

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Barium (μg/L) (01005)	Boron (μg/L) (01020)	Iron (μg/L) (01046)	Manganese (μg/L) (01056)	Strontium (μg/L) (01080)	Iodide (mg/L) (71865)	Bromide (mg/L) (71870)	Silica (mg/L) (00955)
ELNR-1	320	1,690	150	134	—	—	4.14	47
ELNR-2	180	1,360	1,300	517	—	—	6.74	47
ELNR-3	130	205	120	155	—	—	1.86	36
ELNR-4	ND	215	470	ND	—	—	.26	27
GUAD-1	199	153	<10	37.9	183	0.116	.24	23.3
GUAD-2	151	149	<10	50.5	291	.053	.1	23.9
GUAD-3	211	99	<10	91.1	420	.005	.09	25.9
GUAD-4	109	80	E4	44.2	233	.014	.03	27.9
CCOC-1	182	179	<10	22.7	182	.152	.19	26
CCOC-1	207	187	<10	24.5	192	.148	.3	24.7
CCOC-2	185	137	<10	27.2	366	.004	.15	25.8
CCOC-2	227	146	<10	21.4	403	.004	.16	24.5
CCOC-3	240	128	<10	32.6	515	.012	.17	30.7
CCOC-3	—	—	—	—	—	—	—	—
CCOC-4	187	108	<10	26.3	461	.003	.17	28.6
CCOC-4	—	—	—	—	—	—	—	—
CCOC-5	51.1	163	<10	29.3	868	.002	.25	26.7
CCOC-5	—	—	—	—	—	—	—	—
WLLO-1	119	165	E5	39.5	334	.246	.54	30.3
WLLO-2	43.2	204	<10	.5	230	.006	.11	24.9
WLLO-3	102	100	<10	4.5	360	.001	.15	25.4
WLLO-3	—	—	—	—	—	—	—	—
WLLO-4	—	—	—	—	—	—	—	—
WLLO-4	133	90	<10	9.1	589	.002	.2	27.2
WLLO-4	—	—	—	—	—	—	—	—
WLLO-5	123	91	<10	5	516	.002	.2	28
WLLO-5	—	—	—	—	—	—	—	—
WLLO-6	107	106	<10	4	417	.002	.22	22
STPK-1	94.5	56	<10	27.1	264	<.002	.12	25.4
STPK-2	76.9	58	<10	32.5	266	<.002	.19	24.7
STPK-3	72	68	198	54.4	288	<.002	.44	25.7
STPK-4	91.1	74	24	23	302	E.001	.15	25.9
STPK-5	92.8	72	23	23.2	308	E.001	.22	23.3
MGCY-2	47.5	95	28	33.5	298	<.002	.14	21.7
MGCY-3	58.3	82	E6	23.2	248	.002	.07	28
MGCY-4	55.6	3,380	E6	98	124	.189	.83	24.2
MGCY-5	52.4	102	34	98.2	290	.006	.25	15.4
MGCY-1	141	3,860	68	36.7	95.4	.205	.9	25

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Aluminum (μg/L) (01106)	Arsenic (μg/L) (01000)	Lithium (μg/L) (01130)	Chromium (μg/L) (01030)	Raw chromium (μg/L) (01034)	Lead (μg/L) (01049)	Mercury (μg/L) (71900)	Nickel (μg/L) (01065)	Zinc (μg/L) (01090)
ELNR-1	80	6	—	ND	—	ND	NT	ND	NT
ELNR-2	62	ND	—	ND	—	ND	NT	ND	NT
ELNR-3	229	ND	—	ND	—	ND	NT	ND	NT
ELNR-4	ND	ND	—	ND	—	ND	NT	ND	NT
GUAD-1	E1	2	7	—	—	—	—	—	—
GUAD-2	E1	2.4	7	—	—	—	—	—	—
GUAD-3	M	1.4	9	—	—	—	—	—	—
GUAD-4	E1	1.7	7	—	—	—	—	—	—
CCOC-1	<20	1.4	6	—	—	—	—	—	—
CCOC-1	1	1.5	6	—	<1.0	E0.07	<0.01	<0.06	2
CCOC-2	<20	1.2	8	—	—	—	—	—	—
CCOC-2	<1	1.1	9	—	<1.0	<.08	<.01	<.30	<1
CCOC-3	<20	1.1	11	—	—	—	—	—	—
CCOC-3	—	—	—	—	—	—	—	—	—
CCOC-4	<20	2	10	—	—	—	—	—	—
CCOC-4	—	—	—	—	—	—	—	—	—
CCOC-5	<20	1.5	13	—	—	—	—	—	—
CCOC-5	—	—	—	—	—	—	—	—	—
WLLO-1	4	1.7	9	<0.8	<1.0	.11	—	1.04	3
WLLO-2	2	1.6	7	—	<1.0	<.08	—	<.06	2
WLLO-3	4	.6	5	3.6	5.3	E.08	—	.23	<1
WLLO-3	—	—	—	—	—	—	—	—	—
WLLO-4	—	—	—	—	—	—	—	—	—
WLLO-4	2	1.6	6	—	6.7	E.04	<.01	<.30	<1
WLLO-4	—	—	—	—	—	—	—	—	—
WLLO-5	3	1.3	6	4.6	3.2	E.07	—	E.06	1
WLLO-5	—	—	—	—	—	—	—	—	—
WLLO-6	<1	.6	7	1	<1.0	.1	—	.88	3
STPK-1	<20	.9	6	—	—	—	—	—	—
STPK-2	<20	1	6	—	—	—	—	—	—
STPK-3	290	1.2	6	—	—	—	—	—	—
STPK-4	E10	1.3	5	—	—	—	—	—	—
STPK-5	E10	3	5	—	—	—	—	—	—
MGCY-2	M	.5	E4	—	—	—	—	—	—
MGCY-3	<20	.8	5	—	—	—	—	—	—
MGCY-4	<20	11.5	8	—	—	—	—	—	—
MGCY-5	E10	.9	7	—	—	—	—	—	—
MGCY-1	<20	10.8	7	—	—	—	—	—	—

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Delta deuterium (per mil) (82082)	Delta oxygen (per mil) (82085)	Percent artificial recharge from delta deuterium	Percent artificial recharge from delta oxygen	Tritium (pCi/L) (07000)	Strontium 87/86 (Ratio) (75978)	Delta boron-11 (per mil)
ELNR-1	–48.2	–6.88	22	19	M	0.70606	21.82
ELNR-2	–46.1	–6.59	15	12	0	.70566	15.45
ELNR-3	–49	–7.06	24	23	0	.70626	24.24
ELNR-4	–44.5	–6.66	11	14	1	.70727	10.61
GUAD-1	–47.9	–7.14	21	25	0	—	—
GUAD-2	–41.7	–6.62	2	13	.3	—	—
GUAD-3	–42.3	–6.7	4	15	8.7	—	—
GUAD-4	—	—	—	—	M	—	—
CCOC-1	–49.6	–7.25	26	28	.4	.70719	25.47
CCOC-1	—	—	—	—	—	—	—
CCOC-2	–44.3	–6.46	10	9	10.7	.70733	21.73
CCOC-2	—	—	—	—	—	—	—
CCOC-3	–42.2	–6.13	4	1	9.8	.70736	18.48
CCOC-3	—	—	—	—	—	—	—
CCOC-4	–41.8	–6.2	2	2	10.5	.70749	20.48
CCOC-4	—	—	—	—	—	—	—
CCOC-5	–42.4	–6.08	4	0	11.9	.70764	11.24
CCOC-5	—	—	—	—	—	—	—
WLLO-1	–48.5	–7.2	23	27	.2	—	—
WLLO-2	–42.4	–6.49	4	10	8.2	—	—
WLLO-3	–44.4	–6.45	10	9	12.9	—	—
WLLO-3	—	—	—	—	—	—	—
WLLO-4	—	—	—	—	—	—	—
WLLO-4	—	—	—	—	—	—	—
WLLO-4	–43.1	–6.28	6	4	—	—	—
WLLO-5	–43.6	–6.26	8	4	14	—	—
WLLO-5	—	—	—	—	—	—	—
WLLO-6	–42.9	–6.3	6	5	12	.70747	22.23
STPK-1	–44.2	–6.92	10	20	—	.70763	21.98
STPK-2	–52.6	–7.41	35	32	15.9	.70754	22.23
STPK-3	–55.2	–7.68	43	39	12.2	.70756	16.48
STPK-4	–55	–7.67	42	38	11.5	.70780	14.99
STPK-5	–48.7	–6.99	23	22	11.5	—	—
MGCY-2	–52.4	–7.38	35	31	12.3	.70777	5.49
MGCY-3	–41.1	–6.37	0	7	3.6	.70758	17.11
MGCY-4	–43.7	–6.66	8	14	0	.70749	21.48
MGCY-5	–64	–8.29	70	53	12.1	.70761	18.98
MGCY-1	–45.3	–6.66	13	14	.2	.70731	22.23

Table 14. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from multiple-well monitoring sites in the Santa Clara County, California—Continued

Local well name	Carbon 13/12 (per mil) (82081)	Carbon-14 (pmc) (49933)	Uncorrected age (years before present)	Initial water corrected (years before present)
ELNR-1	–27.37	2.3	31,200	30,500
ELNR-2	–32.36	2.26	31,184	30,800
ELNR-3	–17.6	.78	39,900	39,900
ELNR-4	–15.04	28.19	10,500	9,900
GUAD-1	—	—	—	—
GUAD-2	—	—	—	—
GUAD-3	—	—	—	—
GUAD-4	–13.67	54.73	4,600	4,400
CCOC-1	–16.77	12.33	17,300	16,700
CCOC-1	—	—	—	—
CCOC-2	–14.91	73.99	2,500	1,900
CCOC-2	—	—	—	—
CCOC-3	–14.83	77.92	2,100	1,500
CCOC-3	—	—	—	—
CCOC-4	–15.09	81.77	1,700	1,100
CCOC-4	—	—	—	—
CCOC-5	–16.19	79.71	1,900	1,300
CCOC-5	—	—	—	—
WLLO-1	–16.93	4.74	25,300	24,600
WLLO-2	–13.77	61.66	4,000	3,400
WLLO-3	—	—	—	—
WLLO-3	–14.42	79.92	1,900	1,300
WLLO-4	—	—	—	—
WLLO-4	–15.71	89.23	950	400
WLLO-4	—	—	—	—
WLLO-5	—	—	—	—
WLLO-5	—	—	—	—
WLLO-6	–15.87	102.6	0	0
STPK-1	–12.79	71.96	2,700	2,200
STPK-2	–13.11	88.22	1,000	500
STPK-3	–14.34	101.7	0	0
STPK-4	–14.75	101.3	0	0
STPK-5	—	—	—	—
MGCY-2	–12.96	108	0	0
MGCY-3	–15.85	65.91	3,400	2,900
MGCY-4	–10.96	11.79	17,700	17,100
MGCY-5	—	—	—	—
MGCY-1	–5.68	10.79	18,400	17,900

Table 15. Summary of pore water-chemistry data from selected cores samples collected from multiple-well monitoring-well sites, Santa Clara County, California

[Number in parentheses below the compound is the data parameter code, which is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; ft, foot; bls, below land surface; mg/L, milligrams per liter; <, less than; —, no data]

Drill site (core No.)	Depth to top of core-sample interval (ft bls)	Depth to bottom of core-sample interval (ft bls)	Percent salt (grams NaCl per 100 grams water)	pH, standard units	Total inorganic carbon (mg/L as C)	Nitrite as nitrogen (mg/L as N)	Nitrate as nitrogen (mg/L as N)	Chloride, dissolved (mg/L) (00940)	Bromide, dissolved (mg/L) (71870)	Ortho phos-phorous (mg/L as P) (00671)	Sulfate, dissolved (mg/L) (00945)
CCOC-4C-1	21	23	10	7.7	—	0.3	3.07	125	0.5	1.1	210
CCOC-5C-1	26	29	9	7.7	—	<.02	.43	—	—	—	—
CCOC-6C-1	32	33	10	7.7	108	.1	.39	—	—	—	—
CCOC-7C-1	36	38	8	7.8	81	.08	.75	—	—	—	—
CCOC-8C-1	41	43	6	7.9	87	.08	.59	85	<.5	<.4	120
CCOC-9C-1	56	59	3	8	72	.02	1.33	54	<.5	<.4	69
CCOC-12C-1	67	67	6	7.8	—	.12	2.29	66	<.5	<.4	135
CCOC-15C-2	74	76	5	7.7	61	—	—	—	—	—	—
CCOC-15C-1	76	78	5	7.7	65	<.02	.31	32	<.5	<.4	260
CCOC--16C-1	79	80	5	7.7	---	.03	.49	29	<.5	<.4	190
CCOC-17C-1	81	83	3	7.9	61	.03	.49	37	<.5	<.4	120
CCOC-18C-1	86	88	4	8.5	67	.02	.52	25	<.5	<.4	130
CCOC-19C-1	93	95	3	8.6	46	.02	.21	25	<.5	<.4	49
CCOC-19C-2	91	93	—	—	—	.03	.52	31	<.5	<.4	76
CCOC-20C-1	96	100	2	8.6	—	.03	.35	33	<.5	<.4	42
CCOC-21C-1	101	105	2	8.5	64	<.02	.6	27	<.5	<.4	42
CCOC-22C-1	106	108	3	7.8	64	.05	.86	28	<.5	<.4	43
CCOC-23C-1	111	115	4	8.3	71	.06	1.16	35	<.5	<.4	55
CCOC-24C-1	116	119	4	8.5	72	.06	1.02	35	<.5	<.4	65
CCOC-25C-1	121	123	5	8.3	—	.18	.65	52	<.5	<.4	100
CCOC-26C-1	126	128	4	8.1	69	—	—	—	—	—	—
CCOC-27C-1	129	130	4	7.9	—	—	—	—	—	—	—
CCOC-28C-1	131	134	3	7.9	62	.05	.88	39	<.5	<.4	59
CCOC-29C-1	231	233	4	7.8	55	—	—	—	—	—	—
CCOC-31C-1	241	242	4	7.8	—	—	—	—	—	—	—
CCOC-31C-2	242	244	5	7.9	—	.28	2.65	52	<.5	<.4	155
CCOC-32C-1	246	248	4	7.8	—	.05	3.04	47	<.4	<.6	94
CCOC-33C-1	251	254	4	7.9	—	.07	2.22	46	<.8	<1.2	86
CCOC-34C-1	256	260	3	8.6	39	—	—	—	—	—	—
CCOC-35C-1	261	264	3	8.1	54	.02	1.37	38	<.4	<.6	59
CCOC-36C-1	266	266	5	7.8	59	—	—	—	—	—	—
CCOC-39C-1	471	471	2	8.2	51	.06	1.75	39	<.4	<.6	72
CCOC-40C-1	476	480	2	9.1	26	.11	1.31	38	<.4	<.6	70
CCOC-46C-1	551	553	3	8.6	—	—	—	—	—	—	—
CCOC-47C-1	554	554	3	8.2	51	<.04	3.19	43	.4	<.6	88
CCOC-47C-2	555	555	5	8.1	—	.73	4.57	55	.6	<.6	160
CCOC-48C-1	559	559	2	8.2	—	<.04	1.71	32	<.4	<.6	72
CCOC-49C-1	561	565	2	9.3	18	—	—	—	—	—	—
CCOC-50C-1	566	570	2	9	24	.08	.77	29	<.4	<.6	56
CCOC-51C-1	571	575	3	7.9	—	—	—	—	—	—	—
CCOC-52C-1	576	579	3	7.8	46	.28	1.59	39	<.4	<.6	64
CCOC-54C-1	586	588	3	7.9	50	—	—	—	—	—	—

Table 15. Summary of pore water-chemistry data from selected cores samples collected from multiple-well monitoring-well sites, Santa Clara County, California—Continued

Drill site (core No.)	Depth to top of core-sample interval (ft bls)	Depth to bottom of core-sample interval (ft bls)	Percent salt (grams NaCl per 100 grams water)	pH, standard units	Total inorganic carbon (mg/L as C)	Nitrite as nitrogen (mg/L as N)	Nitrate as nitrogen (mg/L as N)	Chloride, dissolved (mg/L) (00940)	Bromide, dissolved (mg/L) (71870)	Ortho phos-phorous (mg/L as P) (00671)	Sulfate, dissolved (mg/L) (00945)
CCOC-55C-1	589	590	4	7.9	48	—	—	—	—	—	—
CCOC-57C-1	639	640	2	8	34	—	—	—	—	—	—
CCOC-58C-1	642	643	6	8.1	38	—	—	—	—	—	—
CCOC-59C-1	644	644	3	7.8	32	—	—	—	—	—	—
CCOC-60C-1	673	675	2	9.4	20	<0.04	0.66	37	<0.4	<0.6	70
CCOC-61C-1	677	679	2	9.2	14	—	—	—	—	—	—
CCOC-62C-1	717	717	5	8.1	—	.53	.78	45	<.4	<.6	165
CCOC-63C-1	721	722	6	8.1	—	.97	2.15	73	<.4	<.6	180
CCOC-64C-1	727	727	3	7.9	—	—	—	—	—	—	—
CCOC-66C-1	736	738	5	7.8	—	—	—	—	—	—	—
CCOC-67C-1	781	785	3	9.4	24	.18	1.95	62	<.4	<.6	120
CCOC-68C-1	816	818	3	9.2	—	.11	1.38	57	<.4	<.6	100
CCOC-69C-1	821	822	2	8.9	28	.11	.32	54	<.4	<.6	57
CCOC-71C-1	881	882	2	7.9	15	—	—	—	—	—	—
CCOC-72C-1	886	891	3	7.7	26	—	—	—	—	—	—
CCOC-74C-1	896	897	3	7.5	23	—	—	—	—	—	—
CCOC-75C-1	961	962	4	7.9	—	.32	1.83	114	<.4	<.6	72
CCOC-77C-1	996	996	5	8.1	—	.68	2.52	93	<.4	<.6	94
WILO1-1C-1	40	45	5	7.3	—	.09	5.11	71	<.4	<.6	82
WILO1-3C-1	50	55	5	7.2	—	.02	2.1	80	<.4	<.6	90
WILO1-4C-1	55	60	5	7.4	—	.01	.26	116	<.4	—	61
WILO1-14C-1	110	115	3	8.4	—	.02	.57	33	<.4	—	73
WILO1-15C-1	295	300	3	7.6	—	.07	.09	29	.3	<.3	61
WILO1-16C-1	300	305	2	7.7	—	<.01	<.02	23	<.2	<.3	47
WILO1-17C-1	305	310	3	8.3	—	.01	<.02	28	<.2	<.3	69
WILO1-18C-1	310	315	2	8.3	—	.02	.02	29	<.2	<.3	54
WILO1-28C-1	670	673	3	7.3	—	—	—	—	—	—	—
WILO1-30C-1	705	708	4	7.3	—	<.01	<.02	98	<.2	<.3	79
WILO1-32C-1	738	741	4	7.1	—	—	—	—	—	—	—
WILO1-33C-1	741	746	4	7.3	—	<.01	.04	98	<.2	<.3	72
WILO1-34C-1	746	750	3	7.1	—	.01	<.02	110	.3	<.3	26
WILO1-35C-1	750	755	5	7	—	—	—	—	—	—	—
WILO1-37C-1	780	784	4	7	—	—	—	—	—	—	—
WILO2-1C-1	30	35	2	6.7	—	—	—	—	—	—	—
WILO2-3C-1	40	45	4	7	—	.12	4.55	65	<.2	<.3	91
WILO2-5C-1	50	55	5	7.1	—	.02	1.69	62	<.4	<.6	87
WILO2-6C-1	55	60	5	7.1	—	.08	1.13	89	<.4	—	79
MGCY-4C-1	35	35	3	6.6	—	—	—	—	—	—	—
MGCY-22C-1	152	154	3	7	—	—	—	—	—	—	—
MGCY-23C-1	155	157	3	6.9	—	—	—	—	—	—	—
MGCY-30C-1	249	251	3	7.2	—	.06	.95	63	< .6	< .8	67
MGCY-34C-1	321	321	2	7	—	—	—	—	—	—	—
MGCY-38C-1	332	332	2	7.1	—	—	—	—	—	—	—
MGCY-39C-1	335	335	2	7	—	—	—	—	—	—	—
MGCY-44C-1	420	421	3	7	—	—	—	—	—	—	—
MGCY-45C-1	422	423	4	7.4	—	—	—	—	—	—	—
MGCY-46C-1	426	426	4	7.5	—	—	—	—	—	—	—

Table 15. Summary of pore water-chemistry data from selected cores samples collected from multiple-well monitoring-well sites, Santa Clara County, California—Continued

Drill site (core No.)	Depth to top of core-sample interval (ft bls)	Depth to bottom of core-sample interval (ft bls)	Percent salt (grams NaCl per 100 grams water)	pH, standard units	Total inorganic carbon (mg/L as C)	Nitrite as nitrogen (mg/L as N)	Nitrate as nitrogen (mg/L as N)	Chloride, dissolved (mg/L) (00940)	Bromide, dissolved (mg/L) (71870)	Ortho phos-phorous (mg/L as P) (00671)	Sulfate, dissolved (mg/L) (00945)
MGCY-47C-1	430	430	5	7.2	—	—	—	—	—	—	—
MGCY-50C-1	492	492	8	7.2	—	—	—	—	—	—	—
MGCY-52C-1	500	500	8	7.5	—	—	—	—	—	—	—
MGCY-56C-1	581	581	7	7.9	—	0.04	0.11	270	1.2	<0.8	25
MGCY-57C-1	584	584	8	8.2	—	<.04	.15	320	1.5	<.8	23
MGCY-60C-1	594	594	6	7.5	—	—	—	—	—	—	—
MGCY-61C-1	601	601	6	8	—	.04	.16	200	1.3	<.8	23
MGCY-62C-1	604	604	6	8.6	—	.04	<.08	180	.7	<.8	45
MGCY-63C-1	610	610	7	9	—	<.04	<.08	300	1.1	<.8	64
MGCY-65C-1	622	622	7	8.4	—	—	—	—	—	—	—
MGCY-66C-1	627	627	6	9.2	—	.05	<.08	190	.9	<.8	26
MGCY-68C-1	701	701	17	8.5	—	< .2	<.4	910	3.3	<4	18
MGCY-69C-1	707	708	18	8.1	—	—	—	—	—	—	—
MGCY-70C-1	713	713	19	8.4	—	< .2	<.4	960	4.4	<4	18
MGCY-71C-1	716	717	17	8.4	—	< .2	<.4	890	2.4	<4	17
MGCY-73C-1	726	726	11	8.7	—	—	—	—	—	—	—
MGCY-75C-1	777	778	23	8.3	—	< .2	<.4	1,200	5.6	<4	16
MGCY-78C-1	793	793	21	7.3	—	—	—	—	—	—	—
MGCY-79C-1	830	830	27	7.7	—	—	—	—	—	—	—
MGCY-81C-1	867	867	23	7.3	—	—	—	—	—	—	—
STPK-2C-1	34	39	7	7.1	—	<.03	25.15	140	<2	<2	120
STPK-3C-1	39	44	6	7.2	—	<.03	7.59	99	<2	<2	260
STPK-11C-1	184	189	2	7.4	—	.05	3.28	48	<.5	<.5	90
STPK-13C-1	224	226.5	2	7.4	—	.07	2.27	46	<.5	<.5	80
STPK-15C-1	229	234	1	7.4	—	.04	1.17	26	<.5	<.5	30
STPK-18C-1	244	249	2	7.4	—	.03	2.37	51	<.5	<.5	90
STPK-20C-1	254	259	2	7.3	—	.05	2.12	75	<.5	<.5	80
STPK-34C-1	479	484	2	7.4	—	.07	2.34	58	<.5	<.5	70
STPK-36C-1	569	574	2	7.4	—	.18	.64	45	<.5	<.5	80
GUAD-1C-1	9	14	9	7.7	—	<.24	1.94	99	1	<4	360
GUAD-2C-1	14	19	9	7.8	—	<.06	1.16	100	1	<2	370
GUAD-4C-1	24	29	6	8	—	.02	.78	79	.7	3	160
GUAD-5C-1	29	34	3	8	—	.02	.73	62	.2	<1	110
GUAD-6C-1	34	39	2	7.6	—	.04	1.32	45	<.6	<1	69
GUAD-8C-1	44	49	4	8	—	.03	1.68	130	<.6	<1	140
GUAD-13C-1	69	74	7	7.7	—	<.06	2.54	99	<.6	<2	410
GUAD-14C-1	74	79	8	7.5	—	.04	.93	110	<.6	2	410
GUAD-16C-1	84	89	7	7.9	—	<.06	1.14	90	.2	2	310
GUAD-17C-1	89	94	3	8	—	.02	.71	67	<.6	.8	71
GUAD-18C-1	89	94?	1	8.4	—	<.06	.64	39	<.6	<1	37
GUAD-20C-1	104	109	2	7.8	—	.03	.77	20	<.6	<1	46
GUAD-21C-1	109	114	1	8.4	—	.02	.91	22	<.6	<1	42
GUAD-22C-1	114	119	1	8.6	—	.03	1.17	29	<.6	<1	37
GUAD-23C-1	119	124	2	7.7	—	.06	.43	21	<.6	<1	41
GUAD-27C-1	139	144	3	8.3	—	.02	1.22	41	<.6	<1	63

Table 15. Summary of pore water-chemistry data from selected cores samples collected from multiple-well monitoring-well sites, Santa Clara County, California—Continued

Drill site (core No.)	Depth to top of core-sample interval (ft bls)	Depth to bottom of core-sample interval (ft bls)	Percent salt (grams NaCl per 100 grams water)	pH, standard units	Total inorganic carbon (mg/L as C)	Nitrite as nitrogen (mg/L as N)	Nitrate as nitrogen (mg/L as N)	Chloride, dissolved (mg/L) (00940)	Bromide, dissolved (mg/L) (71870)	Ortho phos-phorous (mg/L as P) (00671)	Sulfate, dissolved (mg/L) (00945)
GUAD-28C-1	144	149	1	8.8	—	0.03	1.8	41	<0.6	<1	36
GUAD-30C-1	154	159	1	9.5	—	.43	.7	20	<.6	<1	75
GUAD-31C-1	159	164	1	8.5	—	.09	1.01	26	<.6	<1	40
GUAD-32C-1	164	169	1	8.4	—	.16	1.22	27	<.6	<1	52
GUAD-33C-1	169	174	1	7.5	—	.14	.33	23	<.6	<1	49
GUAD-34C-1	174	179	1	7.5	—	.04	.17	21	<.6	<1	30
GUAD-35C-1	179	184	1	8.5	—	.05	.46	19	<.6	.6	33
GUAD-36C-1	184	189	1	7.4	—	.07	.56	22	<.6	<1	24
GUAD-40C-1	204	209	1	7.5	—	.15	.8	39	<.6	<1	68
GUAD-42C-1	214	219	—	—	—	.07	.62	47	.2	<1	50
GUAD-46C-1	234	239	—	—	—	.19	.87	45	<.6	<1	82
GUAD-49C-1	249	254	—	—	—	.03	.14	38	<.6	<1	33
GUAD-50C-1	254	259?	—	—	—	.03	.08	17	<.6	<1	32
GUAD-50C-2	254	259?	—	—	—	.02	<.12	15	<.6	<1	29
GUAD-50C-3	254	259?	—	—	—	.02	.04	19	<.6	<1	27
GUAD-53C-1	269	274	—	—	—	.02	.2	19	<.6	<1	10
GUAD-54C-1	274	279	—	—	—	.05	.23	31	<1.2	<2	15
GUAD-55C-1	279	284	—	—	—	.05	.18	23	<.6	<1	17
GUAD-56C-1	284	289	—	—	—	.04	.27	29	.2	<1	30
GUAD-57C-1	289	294	—	—	—	.04	.25	24	<.6	.6	25
GUAD-59C-1	299	304	—	—	—	.02	.1	16	<.6	<1	24
GUAD-60C-1	304	309	—	—	—	.05	.27	23	<.6	<1	31
GUAD-61C-1	309	314	—	—	—	.03	.08	14	<.6	<1	28
GUAD-62C-1	314	319	—	—	—	.03	.07	15	<.6	<1	35
GUAD-64C-1	324	329	—	—	—	<.06	<.12	19	<.6	<1	25
GUAD-65C-1	329	334	—	—	—	.04	.08	15	<.6	<1	16
GUAD-66C-1	334	339	—	—	—	.03	.36	27	<.6	<1	33
GUAD-67C-1	339	344	—	—	—	.03	1.2	26	<.6	<1	47
GUAD-70C-1	354	355	—	—	—	.04	1.75	37	<.6	<1	56
GUAD-70C-2	355	356.6	—	—	—	.08	.74	22	<.6	<1	53
GUAD-71C-1	359	364	—	—	—	.05	1.71	38	<.6	<1	38
GUAD-73C-1	369	374	—	—	—	.03	.81	26	<.6	<1	39
GUAD-74C-1	374	379?	—	—	—	.03	1.01	23	<.6	<1	33
GUAD-75C-1	379	384	—	—	—	.03	1.82	33	<.6	<1	37
GUAD-76C-1	384	389	—	—	—	.04	.12	16	<.6	<1	40

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California

[Number in parentheses below the compound is the data parameter code, which is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property; ^{o}C, degrees Celsius; µS/cm, microseimen per centimeter; mg/L, milligram per liter; µg/L, microgram per liter; pmc, percent modern carbon; per mil, parts per thousand; pCi/L, picocuries per liter; — no data; <, less than; E, estimated data; M, presence of constituent verified but not quantified; R, repeated sample depth; ( ), depth-dependent sample at a specified depth]

State well No.	Local well name	Depth of screened interval	Date	Time	Water temperature (°C) (00010)	Air temperature (°C) (00020)	Total dissolved solids (mg/L) (70300)
5S/3W-35G10	PA Hale St No. 3	—	08/08/2001	1150	—	—	—
6S/1E-16K5	Cropley No. 3	—	06/25/2001	1710	—	—	—
6S/1E-31K1	Gish No.2	412–662	09/09/1999	1520	24.5	23	292
6S/1E-32G1	Berryessa No.1	315–745	06/25/2001	1520	—	—	430
6S/1E-33F6	Marbury No. 1	—	06/26/2001	0900	—	—	—
6S/1W-13F6	Agnews No. 6	—	06/28/2001	1500	—	—	—
6S/1W-24B5	SJC No. 1	—	08/09/2001	1010	—	—	—
6S/1W-26D2	SC-26	295–665	08/02/2001	0830	—	—	316
6S/1W-32H1	SC-21	290–650	08/02/2001	1140	—	—	343
6S/2W-19H2	CWS No. 121-02	—	08/01/2001	0840	—	—	—
6S/2W-19M1	CWS No. 123-01	—	07/31/2001	1050	—	—	—
6S/2W-19M10	CWS No. 123-02	—	07/31/2001	1040	—	—	—
6S/2W-20L3	CWS No. 119-03	—	07/31/2001	1400	—	—	—
6S/2W-22G9	MV-21	—	08/09/2001	1210	—	—	—
6S/2W-22P2	MV-19	—	08/08/2001	1310	—	—	—
6S/2W-27G2	MV-20	214–670	08/14/2001	1830	—	—	300
6S/2W-27G2	MV-20	214–670R	08/14/2001	1900	—	—	—
6S/2W-27G2	MV-20	(235)	08/15/2001	0900	—	—	310
6S/2W-27G2	MV-20	(280)	08/15/2001	1400	—	—	—
6S/2W-29B2	CWS No. 116	—	07/31/2001	1500	—	—	—
6S/2W-32D1	CWS No. 104-02	—	07/31/2001	0910	—	—	—
6S/2W-33C1	MV-9	—	08/08/2001	1410	—	—	—
6S/2W-34G2	CWS No. 39-01	—	07/31/2001	0800	—	—	—
6S/2W-34K2	CWS No.17	310–734	07/17/2001	0830	—	—	418
6S/2W-34K2	CWS No.17	310–734R	07/17/2001	1800	—	—	400
6S/2W-34K2	CWS No.17	(280)	07/19/2001	1400	—	—	—
6S/2W-34K2	CWS No.17	—	07/19/2001	1410	—	—	—
6S/2W-34K2	CWS No.17	310–734R	07/19/2001	1800	—	—	412
6S/2W-34K2	CWS No.17	(320)	07/20/2001	1600	—	—	—
6S/2W-34K2	CWS No.17	(440)	07/21/2001	1200	—	—	970
6S/2W-34K2	CWS No.17	(460)	07/21/2001	1500	—	—	—
6S/2W-34K2	CWS No.17	(510)	07/21/2001	1730	—	—	—
6S/3W-1B2	PA Rinconda	—	08/08/2001	1040	—	—	—
7S/1E-7R4	Main P	418–784	09/09/1999	1010	19.8	20	384
7S/1E-7R4	Main P	418–784	06/26/2001	1520	—	—	—
7S/1E-9D3	17th St. No.3	295–467	09/16/1999	1430	20	25.5	502
7S/1E-9D3	17th St. No.3	295–467	06/26/2001	1020	—	—	—
7S/1E-9D5	17th St. No. 7	526–708	09/09/1999	1350	22	25	396
7S/1E-9D9	17th St. No.12	425–828	09/16/1999	1345	22	24	372
7S/1E-9D9	17th St. No.12	425–828	06/26/2001	1130	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

State well No.	Local well name	Depth of screened interval	Date	Time	Water temperature (°C) (00010)	Air temperature (°C) (00020)	Total dissolved solids (mg/L) (70300)
7S/1E-16C8	12th St. No.10	265–774	09/15/1999	1150	20	27	504
7S/1E-16C8	12th St. No.10	(300)	09/15/1999	1200	26	27	438
7S/1E-16C8	12th St. No.10	(315)	09/15/1999	1600	23.8	22	474
7S/1E-16C8	12th St. No.10	(350)	09/15/1999	1800	17.6	—	495
7S/1E-16C8	12th St. No.10	(560)	09/15/1999	2040	16.7	—	468
7S/1E-16C8	12th St. No.10	(730)	09/15/1999	2220	17.2	—	481
7S/1E-16C8	12th St. No.10	(730)R	05/23/2000	2350	17	17	493
7S/1E-16C8	12th St. No.10	265–774R	05/24/2000	0200	19.7	17	501
7S/1E-16C8	12th St. No.10	—	06/18/2001	1430	—	—	—
7S/1E-17F2	Grant & Vine 2	—	06/27/2001	0910	—	—	—
7S/1E-18P1	Home No. 3	—	06/25/2001	1340	—	—	391
7S/1E-26D2	Senter	385–454	09/09/1999	1240	19	24	532
7S/1E-26D2	Senter	385–454	08/01/2001	1540	—	—	—
7S/1E-26D2	Senter	385–454	08/01/2001	1540	—	—	—
7S/1E-29A1	Malone No. 1	—	06/26/2001	1350	—	—	—
7S/1E-32G3	Koch No. 1	—	06/27/2001	1320	—	—	—
7S/1W-2B1	SC-5-2	558–510	09/08/1999	0920	25.1	22	284
7S/1W-2B1	SC-5-2	558–510	08/02/2001	0940	—	—	—
7S/1W-2G29	SC-3-02	—	08/02/2001	1400	—	—	379
7S/1W-6P1	CWS No. 20-10	274–682	08/01/2001	0940	—	—	442
7S/1W-10D10	SC-28	298–810	08/02/2001	1040	—	—	395
7S/1W-11D2	SC-2-2	342–493	09/08/1999	1030	18.8	22	359
7S/1W-13E3	Bascom No. 4	560–577	09/08/1999	1515	—	25.5	281
7S/1W-13E4	Bascom No. 5	334–792	08/01/2001	1410	—	—	307
7S/1W-13K4	Buena Vista No. 6	—	06/27/2001	1450	—	—	372
7S/1W-14B1	O'Connor Hospital	213–260	06/27/2001	1110	—	—	418
7S/1W-18K1	CWS No. 29-01	—	08/01/2001	1050	—	—	—
7S/1W-22E2	Williams No. 3	(314)	05/31/2000	1300	—	—	409
7S/1W-22E2	Williams No. 3	(344)	05/31/2000	1421	—	—	391
7S/1W-22E2	Williams No. 3	(364)	05/31/2000	1508	—	—	380
7S/1W-22E2	Williams No. 3	300–770	05/31/2000	1638	—	—	367
7S/1W-22E2	Williams No. 3	300–770	05/31/2000	1700	—	—	374
7S/1W-22E2	Williams No. 3	(430)	05/31/2000	1800	—	—	373
7S/1W-22E2	Williams No. 3	(504)	05/31/2000	1900	—	—	380
7S/1W-22E2	Williams No. 3	(564)	05/31/2000	2040	—	—	369
7S/1W-22E2	Williams No. 3	(634)	05/31/2000	2230	—	—	351
7S/1W-22E2	Williams No. 3	(669)	05/31/2000	2330	—	—	339
7S/1W-22E2	Williams No. 3	—	06/19/2001	1400	—	—	—
7S/1W-22E2	Williams No. 3	—	06/19/2001	1650	—	—	—
7S/1W-22E2	Williams No. 3	300–770	06/19/2001	1745	—	26.5	390
7S/1W-22E2	Williams No. 3	—	06/19/2001	1900	—	—	—
7S/1W-22E3	Williams No. 4	—	07/30/2001	1410	—	—	—
7S/1W-22E12	Williams No. 12	—	07/30/2001	1440	—	—	—
7S/1W-23R3	Three Mile No. 3	378–818	09/14/1999	1055	17	20	—
7S/1W-23R3	Three Mile No. 3	378–818	06/28/2001	1300	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

State well No.	Local well name	Depth of screened interval	Date	Time	Water temperature (°C) (00010)	Air temperature (°C) (00020)	Total dissolved solids (mg/L) (70300)
7S/1W-23R5	Three Mile No. 5	39–832	09/13/1999	1530	17.5	25	322
7S/1W-23R5	Three Mile No. 5	(420)	09/13/1999	1535	—	—	—
7S/1W-24J3	Meridian No. 2	336–882	09/07/1999	1450	20	28.5	377
7S/1W-26R3	Ridgley No. 2	300–803	09/08/1999	1350	21	18	299
7S/1W-26R4	Ridgley No. 3	—	07/30/2001	1700	—	—	—
7S/1W-34F1	Virginia No. 1	—	07/30/2001	1530	—	—	—
7S/2W-1E3	CWS No. 27-01	—	07/31/2001	1600	—	—	—
7S/2W-1L1	CWS No. 31-01	—	08/01/2001	1200	—	—	—
7S/2W-3H1	CWS No. 18-02	—	07/31/2001	1210	—	—	—
7S/2W-3P1	CWS No. 15-01	—	08/16/2001	0900	—	—	—
8S/1E-11A4	GOWC No. 8	—	08/07/2001	1320	—	—	—
8S/1E-12P1	GOWC No. 2	—	06/28/2001	0920	—	—	—
8S/2E-7A12	SJC No. 11	—	08/09/2001	0840	—	—	—
8S/2E-8Q2	GOWC No. 21	105–230	06/28/2001	1000	—	—	374
8S/2E-18E11	GOWC No. 12	—	08/07/2001	1210	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Field, specific conductance (μS/cm@25°C) (00095)	Lab specific conductance (μS/cm) (90095)	Dissolved oxygen (mg/L) (00300)	Field pH (Standard units) (00400)	Lab pH (Standard units) (00403)	Field alkalinity (mg/L as $CaCO_3$) (39036)	Lab alkalinity (mg/L as $CaCO_3$) (29801)
PA Hale St No. 3	1,400	—	—	—	—	—	—
Cropley No. 3	—	1,020	—	—	—	—	—
Gish No.2	483	488	—	7.8	7.9	180	189
Berryessa No.1	—	745	—	—	7.6	—	229
Marbury No. 1	—	881	—	—	—	—	—
Agnews No. 6	—	704	—	—	—	—	—
SJC No. 1	773	—	—	—	—	—	—
SC-26	—	522	—	—	7.9	—	189
SC-21	—	568	—	—	7.7	—	220
CWS No. 121-02	—	760	—	—	—	—	—
CWS No. 123-01	—	—	—	—	—	—	—
CWS No. 123-02	—	601	—	—	—	—	—
CWS No. 119-03	—	791	—	—	—	—	—
MV-21	602	—	—	—	—	—	—
MV-19	648	—	—	—	—	—	—
MV-20	—	619	—	—	7.9	—	197
MV-20	—	—	—	—	—	—	—
MV-20	—	623	—	—	7.8	—	182
MV-20	—	626	—	—	7.7	—	231
CWS No. 116	—	682	—	—	—	—	—
CWS No. 104-02	—	701	—	—	—	—	—
MV-9	888	—	—	—	—	—	—
CWS No. 39-01	—	743	—	—	—	—	—
CWS No.17	—	666	—	—	7.6	—	240
CWS No.17	—	653	—	—	7.6	—	234
CWS No.17	—	659	—	—	7.7	—	234
CWS No.17	—	—	—	—	—	—	—
CWS No.17	—	654	—	—	7.6	—	235
CWS No.17	—	659	—	—	7.5	—	235
CWS No.17	—	654	—	—	7.8	—	230
CWS No.17	—	630	—	—	7.6	—	231
CWS No.17	—	623	—	—	7.6	—	232
PA Rinconda	1,540	—	—	—	—	—	—
Main P	677	680	—	7.7	7.7	210	269
Main P	—	696	—	—	—	—	—
17th St. No.3	824	810	3.5	7.5	7.8	—	317
17th St. No.3	—	805	—	—	—	—	—
17th St. No. 7	666	666	.4	7.7	7.8	220	230
17th St. No.12	672	667	.6	7.7	7.8	240	256
17th St. No.12	—	752	—	—	—	—	—
12th St. No.10	820	801	—	7.7	7.8	280	302
12th St. No.10	779	780	—	7.5	7.2	290	306
12th St. No.10	784	765	—	7.6	7.8	—	307
12th St. No.10	809	796	1	7.7	7.9	—	298
12th St. No.10	796	790	1.4	7.6	7.9	—	333

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Field, specific conductance (μS/cm@25°C) (00095)	Lab specific conductance (μS/cm) (90095)	Dissolved oxygen (mg/L) (00300)	Field pH (Standard units) (00400)	Lab pH (Standard units) (00403)	Field alkalinity (mg/L as $CaCO_3$) (39036)	Lab alkalinity (mg/L as $CaCO_3$) (29801)
12th St. No.10	830	815	2.8	7.7	7.8	—	322
12th St. No.10	807	811	—	7.7	7.6	280	298
12th St. No.10	809	816	—	7.6	7.6	280	293
12th St. No.10	—	—	—	—	—	—	—
Grant & Vine 2	—	894	—	—	—	—	—
Home No. 3	—	664	—	—	7.7	—	214
Senter	906	903	—	7.6	7.6	320	342
Senter	—	915	—	—	—	—	—
Senter	—	915	—	—	—	—	—
Malone No. 1	—	594	—	—	—	—	—
Koch No. 1	—	885	—	—	—	—	—
SC-5-2	461	470	—	7.9	8	170	187
SC-5-2	—	456	—	—	—	—	—
SC-3-02	—	606	—	—	7.7	—	207
CWS No. 20-10	—	733	—	—	7.4	—	264
SC-28	—	630	—	—	7.6	—	224
SC-2-2	590	594	—	7.5	7.7	200	210
Bascom No. 4	471	470	—	7.7	7.8	150	158
Bascom No. 5	—	537	—	—	7.7	—	144
Buena Vista No. 6	—	640	—	—	7.5	—	188
O’Connor Hospital	—	725	—	—	7.6	—	230
CWS No. 29-01	—	581	—	—	—	—	—
Williams No. 3	609	686	—	7.4	7.4	—	218
Williams No. 3	660	673	—	7.3	7.3	—	212
Williams No. 3	647	650	—	7.2	7.4	—	203
Williams No. 3	621	627	—	7.4	7.3	—	188
Williams No. 3	635	640	—	7.2	7.3	—	196
Williams No. 3	638	643	—	7.3	7.3	—	202
Williams No. 3	637	642	—	7.5	7.1	—	202
Williams No. 3	—	619	—	—	7.5	—	209
Williams No. 3	591	600	—	7.3	7.3	—	208
Williams No. 3	568	580	—	7.3	7.2	—	209
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	642	640	—	6.9	7.3	—	196
Williams No. 3	642	—	—	7.2	—	—	—
Williams No. 4	—	688	—	—	—	—	—
Williams No. 12	—	555	—	—	—	—	—
Three Mile No. 3	539	—	—	7.6	—	140	—
Three Mile No. 3	520	—	—	—	—	—	—
Three Mile No. 5	542	537	—	7.6	7.9	130	140
Three Mile No. 5	—	—	—	—	—	—	—
Meridian No. 2	634	642	—	7.6	7.8	170	187

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Field, specific conductance (μS/cm@25°C) (00095)	Lab specific conductance (μS/cm) (90095)	Dissolved oxygen (mg/L) (00300)	Field pH (Standard units) (00400)	Lab pH (Standard units) (00403)	Field alkalinity (mg/L as $CaCO_3$) (39036)	Lab alkalinity (mg/L as $CaCO_3$) (29801)
Ridgley No. 2	524	520	—	7.5	7.6	130	140
Ridgley No. 3	—	487	—	—	—	—	—
Virginia No. 1	—	516	—	—	—	—	—
CWS No. 27-01	—	732	—	—	—	—	—
CWS No. 31-01	—	704	—	—	—	—	—
CWS No. 18-02	—	652	—	—	—	—	—
CWS No. 15-01	—	—	—	—	—	—	—
GOWC No. 8	842	—	—	—	—	—	—
GOWC No. 2	—	820	—	—	—	—	—
SJC No. 11	622	—	—	—	—	—	—
GOWC No. 21	—	647	—	—	7.3	—	234
GOWC No. 12	781	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Chloride (mg/L) (00940)	Sulfate (mg/L) (00945)	Fluoride (mg/L) (00950)	Calcium (mg/L) (00915)	Magnesium (mg/L) (00925)	Potassium (mg/L) (00935)	Sodium (mg/L) (00930)
PA Hale St No. 3	—	—	—	—	—	—	—
Cropley No. 3	—	—	—	—	—	—	—
Gish No.2	20.6	34.4	0.1	36.8	11.8	1.24	49.4
Berryessa No.1	62	54.6	E.1	49.5	22.4	1.05	73.2
Marbury No. 1	—	—	—	—	—	—	—
Agnews No. 6	—	—	—	—	—	—	—
SJC No. 1	—	—	—	—	—	—	—
SC-26	21.2	48.9	E.1	44.2	14.1	1.02	45
SC-21	28.2	31.4	E.2	57	17.9	1.18	37
CWS No. 121-02	—	—	—	—	—	—	—
CWS No. 123-01	—	—	—	—	—	—	—
CWS No. 123-02	—	—	—	—	—	—	—
CWS No. 119-03	—	—	—	—	—	—	—
MV-21	—	—	—	—	—	—	—
MV-19	—	—	—	—	—	—	—
MV-20	35.1	29.9	E.1	75.9	20.3	1.25	25.3
MV-20	—	—	—	—	—	—	—
MV-20	34.8	29.7	E.1	76.4	20.4	1.27	25.6
MV-20	35	30.4	.2	74.1	19.8	1.26	27.9
CWS No. 116	—	—	—	—	—	—	—
CWS No. 104-02	—	—	—	—	—	—	—
MV-9	—	—	—	—	—	—	—
CWS No. 39-01	—	—	—	—	—	—	—
CWS No.17	43.4	28.6	E.1	80.5	23.1	1.25	26.3
CWS No.17	40.4	27.1	E.1	75.1	21.8	1.21	28.8
CWS No.17	41.6	27.9	E.1	75.7	22.2	1.22	28.5
CWS No.17	—	—	—	—	—	—	—
CWS No.17	40.9	27.5	E.1	77.4	22.3	1.23	28.9
CWS No.17	41.8	27.5	E.1	76.5	22	1.25	28.1
CWS No.17	40.3	25.3	E.1	73.7	22	1.22	29
CWS No.17	42.6	28.9	E.1	75.7	22.1	1.25	27.7
CWS No.17	37.5	26.6	E.1	67.5	20.5	1.15	33
PA Rinconda	—	—	—	—	—	—	—
Main P	42.4	49.8	<.1	72	23.9	1.6	31.3
Main P	—	—	—	—	—	—	—
17th St. No.3	36.6	74.9	.2	69.7	51.9	1.29	32.3
17th St. No.3	—	—	—	—	—	—	—
17th St. No. 7	36	52	.1	61	24	1.3	46
17th St. No.12	37.2	44.9	.1	58.7	26	1.24	47.1
17th St. No.12	—	—	—	—	—	—	—
12th St. No.10	43.4	73.7	<.1	81.4	41.4	1.36	33.8
12th St. No.10	36.2	67	.2	57.5	54.1	1.15	31.6
12th St. No.10	36.3	67.6	.2	56.7	53.9	1.21	31.9
12th St. No.10	42.3	74	<.1	80.2	39.8	1.4	34.8

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Chloride (mg/L) (00940)	Sulfate (mg/L) (00945)	Fluoride (mg/L) (00950)	Calcium (mg/L) (00915)	Magnesium (mg/L) (00925)	Potassium (mg/L) (00935)	Sodium (mg/L) (00930)
12th St. No.10	40.7	72.9	<0.1	63.7	38.4	1.52	34.5
12th St. No.10	40.5	69.3	<.1	80	45.6	1.33	35.3
12th St. No.10	41.3	68	<.1	78.1	41.5	1.38	38.2
12th St. No.10	42.3	71	<.1	80.9	38.5	1.47	35.9
12th St. No.10	—	—	—	—	—	—	—
Grant & Vine 2	—	—	—	—	—	—	—
Home No. 3	42.1	42.5	E.1	73	21.7	1.43	29.3
Senter	50.4	77.3	.2	61.6	64	1.22	38.1
Senter	—	—	—	—	—	—	—
Senter	—	—	—	—	—	—	—
Malone No. 1	—	—	—	—	—	—	—
Koch No. 1	—	—	—	—	—	—	—
SC-5-2	14.2	36.9	.1	35.5	10.6	1.06	47.8
SC-5-2	—	—	—	—	—	—	—
SC-3-02	28.4	63.5	E.1	66	24.2	1.16	21.4
CWS No. 20-10	53.2	26.4	.2	69.7	29.7	1.29	37.8
SC-28	31.9	47.6	E.1	77.3	19.6	1.23	24
SC-2-2	29.2	49.4	.1	63.7	25.7	1.32	21.1
Bascom No. 4	27.3	39	.1	47.7	16.5	1.09	23
Bascom No. 5	53.6	42.1	E.1	55.2	21.2	1.23	17.3
Buena Vista No. 6	49.2	46.6	.2	73.7	21.1	1.53	20.7
O'Connor Hospital	49.2	53.6	E.1	78.1	23.8	1.42	19.3
CWS No. 29-01	—	—	—	—	—	—	—
Williams No. 3	47.6	39.4	.1	79	26.8	1.36	24.6
Williams No. 3	47.8	35.6	.1	72.2	27.3	1.34	24.1
Williams No. 3	48.9	34.6	.1	71.9	28.1	1.33	24.6
Williams No. 3	49	36.7	<.1	67.2	24.8	1.25	22.2
Williams No. 3	48.8	35.9	.1	67.3	25.5	1.28	22.2
Williams No. 3	46.5	35.6	.2	69.9	25.3	1.3	23.9
Williams No. 3	44.7	35.5	.1	71.5	25.5	1.31	24.2
Williams No. 3	41	31.1	.1	71.5	25.7	1.31	24.2
Williams No. 3	36.1	26.6	.1	64.3	23.4	1.29	23.5
Williams No. 3	32.6	22.2	.1	62.9	22.6	1.15	22.8
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	47	36.9	E.1	72	24.9	1.25	19.9
Williams No. 3	—	—	—	—	—	—	—
Williams No. 4	—	—	—	—	—	—	—
Williams No. 12	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—
Three Mile No. 5	60.6	44.2	.1	62.9	18.7	1.22	17.9
Three Mile No. 5	—	—	—	—	—	—	—
Meridian No. 2	63	36.5	.1	55	17.4	1.25	48.1
Ridgley No. 2	51.2	44.5	.1	56.8	18.3	1.13	18.2
Ridgley No. 3	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Chloride (mg/L) (00940)	Sulfate (mg/L) (00945)	Fluoride (mg/L) (00950)	Calcium (mg/L) (00915)	Magnesium (mg/L) (00925)	Potassium (mg/L) (00935)	Sodium (mg/L) (00930)
Virginia No. 1	—	—	—	—	—	—	—
CWS No. 27-01	—	—	—	—	—	—	—
CWS No. 31-01	—	—	—	—	—	—	—
CWS No. 18-02	—	—	—	—	—	—	—
CWS No. 15-01	—	—	—	—	—	—	—
GOWC No. 8	—	—	—	—	—	—	—
GOWC No. 2	—	—	—	—	—	—	—
SJC No. 11	—	—	—	—	—	—	—
GOWC No. 21	29.7	48.5	0.3	48.7	34.8	0.88	33.1
GOWC No. 12	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Nitrite as nitrogen (mg/L as N) (00613)	Nitrite plus nitrate as nitrogen (mg/L as N) (00631)	Organic ammonia (mg/L as N) (00623)	Nitrogen, ammonia (mg/L as N) (00608)	Phosphorus (mg/L as P) (00666)	Ortho-phosphate (m/L as P) (00671)	Organic carbon (mg/L as C) (00681)
PA Hale St No. 3	—	—	—	—	—	—	—
Cropley No. 3	—	—	—	—	—	—	—
Gish No.2	<0.010	0.68	<0.10	<0.02	0.06	0.04	—
Berryessa No.1	E.005	.23	<.10	E.03	E.03	.06	—
Marbury No. 1	—	—	—	—	—	—	—
Agnews No. 6	—	—	—	—	—	—	—
SJC No. 1	—	—	—	—	—	—	—
SC-26	.007	.66	<.10	<.04	E.05	.05	—
SC-21	.009	2.25	<.10	<.04	<.06	.07	—
CWS No. 121-02	—	—	—	—	—	—	—
CWS No. 123-01	—	—	—	—	—	—	—
CWS No. 123-02	—	—	—	—	—	—	—
CWS No. 119-03	—	—	—	—	—	—	—
MV-21	—	—	—	—	—	—	—
MV-19	—	—	—	—	—	—	—
MV-20	<.006	5.55	E.06	<.04	E.04	.03	2.2
MV-20	<.006	5.56	<.10	<.04	E.04	.04	—
MV-20	<.006	5.32	.16	E.02	<.06	.03	3.1
MV-20	<.006	5.48	E.08	<.04	E.04	.04	.6
CWS No. 116	—	—	—	—	—	—	—
CWS No. 104-02	—	—	—	—	—	—	—
MV-9	—	—	—	—	—	—	—
CWS No. 39-01	—	—	—	—	—	—	—
CWS No.17	E.005	6.11	<.10	<.04	E.03	.03	—
CWS No.17	E.005	6.82	<.10	<.04	E.04	.03	—
CWS No.17	E.005	7.28	3	<.04	.08	E.01	3.7
CWS No.17	—	—	—	—	—	—	—
CWS No.17	E.005	6.86	<.10	<.04	<.06	.03	.3
CWS No.17	<.006	7.07	E.09	<.04	<.06	.02	.8
CWS No.17	<.006	6.92	<.10	<.04	<.06	.02	1.5
CWS No.17	E.003	6.83	<.10	<.04	<.06	<.02	3.9
CWS No.17	<.006	4.86	<.10	<.04	<.06	.03	1.9
PA Rinconda	—	—	—	—	—	—	—
Main P	<.010	6.31	<.10	<.02	E.05	.03	—
Main P	—	—	—	—	—	—	—
17th St. No.3	<.010	3.98	<.10	<.02	E.05	.04	—
17th St. No.3	—	—	—	—	—	—	—
17th St. No. 7	<.010	.756	.11	<.02	E.05	.015	—
17th St. No.12	<.010	2.51	E.06	<.02	E.04	.03	—
17th St. No.12	—	—	—	—	—	—	—
12th St. No.10	<.010	4.23	E.06	<.02	E.04	.02	—
12th St. No.10	<.010	3.02	E.06	<.02	E.04	.03	—
12th St. No.10	<.010	2.95	E.07	<.02	E.04	.03	—
12th St. No.10	<.010	4.29	E.06	<.02	<.05	.02	—
12th St. No.10	<.010	4.25	E.05	<.02	E.03	.02	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Nitrite as nitrogen (mg/L as N) (00613)	Nitrite plus nitrate as nitrogen (mg/L as N) (00631)	Organic ammonia (mg/L as N) (00623)	Nitrogen, ammonia (mg/L as N) (00608)	Phosphorus (mg/L as P) (00666)	Ortho-phosphate (m/L as P) (00671)	Organic carbon (mg/L as C) (00681)
12th St. No.10	<0.010	3.42	0.11	<0.02	E0.04	0.03	—
12th St. No.10	<.010	3.12	<.10	<.02	E.03	.03	9.5
12th St. No.10	<.010	3.6	<.10	<.02	<.05	.03	23.1
12th St. No.10	—	—	—	—	—	—	—
Grant & Vine 2	—	—	—	—	—	—	—
Home No. 3	.006	5.06	<.10	E.02	E.03	.03	—
Senter	.001	3.3	.08	.005	.036	.036	—
Senter	—	—	—	—	—	—	—
Senter	—	—	—	—	—	—	—
Malone No. 1	—	—	—	—	—	—	—
Koch No. 1	—	—	—	—	—	—	—
SC-5-2	<.010	.51	<.10	<.02	.05	.04	—
SC-5-2	—	—	—	—	—	—	—
SC-3-02	E.005	1.93	<.10	<.04	E.05	.04	—
CWS No. 20-10	E.004	5.71	<.10	<.04	E.03	.05	—
SC-28	E.003	3.73	<.10	<.04	<.06	.03	—
SC-2-2	<.010	3.55	<.10	<.02	.05	.03	—
Bascom No. 4	<.010	1.15	E.09	<.02	E.04	.03	—
Bascom No. 5	<.006	1.04	<.10	<.04	E.04	.03	—
Buena Vista No. 6	E.005	3.12	<.10	E.02	<.06	.04	—
O’Connor Hospital	<.006	2.77	<.10	<.04	E.04	.03	—
CWS No. 29-01	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	<.010	6.58	<.10	<.02	<.05	.02	1.1
Williams No. 3	<.010	5.57	<.10	<.02	<.05	.01	2.9
Williams No. 3	<.010	6.1	<.10	<.02	<.05	.02	.4
Williams No. 3	<.010	6.25	<.10	<.02	<.05	.02	—
Williams No. 3	<.010	6.31	E.07	<.02	<.05	.02	1.1
Williams No. 3	<.010	6.12	<.10	<.02	<.05	.02	1
Williams No. 3	<.010	5.59	<.10	<.02	<.05	.02	.9
Williams No. 3	<.010	5.31	<.10	<.02	<.05	.02	2.9
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	<.006	6.24	<.10	<.04	<.06	E.02	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 4	—	—	—	—	—	—	—
Williams No. 12	—	—	—	—	—	—	—
Three Mile No. 3	<.010	.84	E.08	<.02	<.05	.01	—
Three Mile No. 3	—	—	—	—	—	—	—
Three Mile No. 5	<.010	.95	E.06	<.02	E.03	.02	—
Three Mile No. 5	—	—	—	—	—	—	—
Meridian No. 2	<.010	2.85	E.08	<.02	E.04	.03	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Nitrite as nitrogen (mg/L as N) (00613)	Nitrite plus nitrate as nitrogen (mg/L as N) (00631)	Organic ammonia (mg/L as N) (00623)	Nitrogen, ammonia (mg/L as N) (00608)	Phosphorus (mg/L as P) (00666)	Ortho-phosphate (m/L as P) (00671)	Organic carbon (mg/L as C) (00681)
Ridgley No. 2	<0.010	4.65	<0.10	<0.02	E0.05	0.02	—
Ridgley No. 3	—	—	—	—	—	—	—
Virginia No. 1	—	—	—	—	—	—	—
CWS No. 27-01	—	—	—	—	—	—	—
CWS No. 31-01	—	—	—	—	—	—	—
CWS No. 18-02	—	—	—	—	—	—	—
CWS No. 15-01	—	—	—	—	—	—	—
GOWC No. 8	—	—	—	—	—	—	—
GOWC No. 2	—	—	—	—	—	—	—
SJC No. 11	—	—	—	—	—	—	—
GOWC No. 21	E.005	2.28	<.10	E.02	<.06	E.01	—
GOWC No. 12	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Barium (µg/L) (01005)	Boron (µg/L) (01020)	Iron (µg/L) (01046)	Manganese (µg/L) (01056)	Strontium (µg/L) (01080)	Iodide (mg/L) (71865)	Bromide (mg/L) (71870)	Silica (mg/L) (00955)
PA Hale St No. 3	—	—	—	—	—	—	—	—
Cropley No. 3	—	—	—	—	—	—	—	—
Gish No.2	144	149	<10	23.8	258	0.022	0.07	28.4
Berryessa No.1	132	137	<10	.2	341	.089	.2	26.6
Marbury No. 1	—	—	—	—	—	—	—	—
Agnews No. 6	—	—	—	—	—	—	—	—
SJC No. 1	—	—	—	—	—	—	—	—
SC-26	175	137	<10	18.1	326	.02	.09	25.3
SC-21	144	181	<10	2.4	311	.008	.11	29.5
CWS No. 121-02	—	—	—	—	—	—	—	—
CWS No. 123-01	—	—	—	—	—	—	—	—
CWS No. 123-02	—	—	—	—	—	—	—	—
CWS No. 119-03	—	—	—	—	—	—	—	—
MV-21	—	—	—	—	—	—	—	—
MV-19	—	—	—	—	—	—	—	—
MV-20	132	106	E8	E2.8	357	<.001	.12	23.9
MV-20	—	—	—	—	—	—	—	—
MV-20	137	112	13	4.1	362	<.001	.12	23.8
MV-20	133	115	E9	.7	362	<.001	.12	24.9
CWS No. 116	—	—	—	—	—	—	—	—
CWS No. 104-02	—	—	—	—	—	—	—	—
MV-9	—	—	—	—	—	—	—	—
CWS No. 39-01	—	—	—	—	—	—	—	—
CWS No.17	133	130	<10	<3.0	385	<.001	.14	26.1
CWS No.17	128	135	<10	<3.0	366	<.001	.13	26.3
CWS No.17	124	135	58	21.3	369	.001	.13	25.7
CWS No.17	—	—	—	—	—	—	—	—
CWS No.17	130	142	<10	<.1	372	.002	.13	26.4
CWS No.17	129	133	<10	<3.0	370	.001	.13	26.2
CWS No.17	128	128	<10	<3.0	361	.001	.13	26.8
CWS No.17	124	128	<10	42.2	371	.001	.14	24.8
CWS No.17	122	139	<10	.2	335	.001	.13	27.4
PA Rinconda	—	—	—	—	—	—	—	—
Main P	112	92	<10	<2.2	375	.001	.16	27.7
Main P	—	—	—	—	—	—	—	—
17th St. No.3	172	120	<10	<2.2	504	.001	.15	29.5
17th St. No.3	—	—	—	—	—	—	—	—
17th St. No. 7	227	127	<10	<2.2	420	.003	.13	28
17th St. No.12	200	140	<10	<2.2	388	.012	.12	28.4
17th St. No.12	—	—	—	—	—	—	—	—
12th St. No.10	225	122	<10	<2.2	539	.001	.17	29.9
12th St. No.10	176	140	44	8.7	455	.001	.14	30.7
12th St. No.10	177	132	156	10.3	448	.001	.15	30.4
12th St. No.10	225	140	15	E1.3	522	.002	.16	29.7

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Barium (μg/L) (01005)	Boron (μg/L) (01020)	Iron (μg/L) (01046)	Manganese (μg/L) (01056)	Strontium (μg/L) (01080)	Iodide (mg/L) (71865)	Bromide (mg/L) (71870)	Silica (mg/L) (00955)
12th St. No.10	207	124	<10	<2.2	499	0.002	0.16	29.5
12th St. No.10	224	147	E8	<2.2	524	.001	.16	30.3
12th St. No.10	225	161	E6	<2.2	524	.002	.19	29.4
12th St. No.10	228	144	12	<2.2	527	.002	.19	29.6
12th St. No.10	—	—	—	—	—	—	—	—
Grant & Vine 2	—	—	—	—	—	—	—	—
Home No. 3	117	106	<10	.2	375	<.001	.15	24.4
Senter	270	164	<10	<2.2	585	.001	.2	32.4
Senter	—	—	—	—	—	—	—	—
Senter	—	—	—	—	—	—	—	—
Malone No. 1	—	—	—	—	—	—	—	—
Koch No. 1	—	—	—	—	—	—	—	—
SC-5-2	161	102	<10	14	252	.011	.04	28
SC-5-2	—	—	—	—	—	—	—	—
SC-3-02	148	76	<10	.4	340	<.001	.11	26.9
CWS No. 20-10	94.1	195	<10	.7	297	<.001	.22	31.9
SC-28	112	115	<10	<.1	347	<.001	.14	27.9
SC-2-2	132	69	<10	<2.2	305	.001	.13	29.5
Bascom No. 4	93.9	74	E6	<2.2	254	<.001	.1	27
Bascom No. 5	107	88	<10	.6	283	.001	.2	23.4
Buena Vista No. 6	110	94	15	.9	374	<.001	.19	23.2
O’Connor Hospital	102	97	<10	E.1	407	<.001	.2	21.4
CWS No. 29-01	—	—	—	—	—	—	—	—
Williams No. 3	115	185	544	E1.9	408	.001	.18	28.4
Williams No. 3	106	154	39	2.3	386	<.001	.16	29.5
Williams No. 3	102	141	22	E2.0	380	.002	.17	29.3
Williams No. 3	99.9	139	27	<2.2	354	<.001	.17	29
Williams No. 3	98.4	137	E7	<2.2	357	.004	.17	29
Williams No. 3	105	158	15	<2.2	373	<.001	.16	28.8
Williams No. 3	106	154	11	<2.2	373	<.001	.17	29.4
Williams No. 3	107	159	21	E1.9	376	<.001	.14	28.4
Williams No. 3	98.5	140	18	E1.3	345	<.001	.13	29.2
Williams No. 3	95.1	135	15	E1.5	334	<.001	.13	29.3
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 3	94.4	133	<10	.6	345	<.001	.16	28.9
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 4	—	—	—	—	—	—	—	—
Williams No. 12	—	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—	—
Three Mile No. 5	72.9	92	10	<2.2	313	.001	.2	24
Three Mile No. 5	—	—	—	—	—	—	—	—
Meridian No. 2	88.6	301	<10	<2.2	284	.011	.22	25.4
Ridgley No. 2	54.7	112	94	11.7	302	.001	.17	23.3
Ridgley No. 3	—	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Barium (μg/L) (01005)	Boron (μg/L) (01020)	Iron (μg/L) (01046)	Manganese (μg/L) (01056)	Strontium (μg/L) (01080)	Iodide (mg/L) (71865)	Bromide (mg/L) (71870)	Silica (mg/L) (00955)
Virginia No. 1	—	—	—	—	—	—	—	—
CWS No. 27-01	—	—	—	—	—	—	—	—
CWS No. 31-01	—	—	—	—	—	—	—	—
CWS No. 18-02	—	—	—	—	—	—	—	—
CWS No. 15-01	—	—	—	—	—	—	—	—
GOWC No. 8	—	—	—	—	—	—	—	—
GOWC No. 2	—	—	—	—	—	—	—	—
SJC No. 11	—	—	—	—	—	—	—	—
GOWC No. 21	104	132	<10	0.1	532	0.002	0.13	24.4
GOWC No. 12	—	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Aluminum (µg/L) (01106)	Arsenic (µg/L) (01000)	Lithium (µg/L) (01130)	Raw chromium (µg/L) (01034)	Lead (µg/L) (01049)	Mercury (µg/L) (71900)	Nickel (µg/L) (01065)	Zinc (µg/L) (01090)
PA Hale St No. 3	—	—	—	—	—	—	—	—
Cropley No. 3	—	—	—	—	—	—	—	—
Gish No.2	<20	<1	4	—	—	—	—	—
Berryessa No.1	<1	.8	8	<1.0	0.43	—	<0.06	4
Marbury No. 1	—	—	—	—	—	—	—	—
Agnews No. 6	—	—	—	—	—	—	—	—
SJC No. 1	—	—	—	—	—	—	—	—
SC-26	2	1.9	7	<1.0	2.74	—	<.06	7
SC-21	<1	.7	8	<1.0	1.05	—	<.10	6
CWS No. 121-02	—	—	—	—	—	—	—	—
CWS No. 123-01	—	—	—	—	—	—	—	—
CWS No. 123-02	—	—	—	—	—	—	—	—
CWS No. 119-03	—	—	—	—	—	—	—	—
MV-21	—	—	—	—	—	—	—	—
MV-19	—	—	—	—	—	—	—	—
MV-20	<20	.3	6	—	—	—	—	—
MV-20	—	—	—	—	—	—	—	—
MV-20	<20	.4	6	—	—	—	—	—
MV-20	<1	.3	5	2.3	.65	—	<.06	4
CWS No. 116	—	—	—	—	—	—	—	—
CWS No. 104-02	—	—	—	—	—	—	—	—
MV-9	—	—	—	—	—	—	—	—
CWS No. 39-01	—	—	—	—	—	—	—	—
CWS No.17	<20	.2	5	—	—	—	—	—
CWS No.17	<20	.2	5	—	—	—	—	—
CWS No.17	<20	.2	5	—	—	—	—	—
CWS No.17	—	—	—	—	—	—	—	—
CWS No.17	<1	.2	5	1	.39	<0.01	<.06	2
CWS No.17	<20	.3	5	—	—	—	—	—
CWS No.17	<20	.3	4	—	—	—	—	—
CWS No.17	<20	E.2	E4	—	—	—	—	—
CWS No.17	<1	.3	5	<1.0	<.08	<.01	<.06	9
PA Rinconda	—	—	—	—	—	—	—	—
Main P	<20	<1	4	—	—	—	—	—
Main P	—	—	—	—	—	—	—	—
17th St. No.3	<20	<1	9	—	—	—	—	—
17th St. No.3	—	—	—	—	—	—	—	—
17th St. No.7	<20	<1	4	—	—	—	—	—
17th St. No.12	<20	<1	10	—	—	—	—	—
17th St. No.12	—	—	—	—	—	—	—	—
12th St. No.10	<20	<1	10	—	—	—	—	—
12th St. No.10	<20	<1	9	—	—	—	—	—
12th St. No.10	<20	<1	7	—	—	—	—	—
12th St. No.10	<20	<1	9	—	—	—	—	—
12th St. No.10	<20	<1	4	—	—	—	—	—
12th St. No.10	E10	<1	10	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Aluminum (µg/L) (01106)	Arsenic (µg/L) (01000)	Lithium (µg/L) (01130)	Raw chromium (µg/L) (01034)	Lead (µg/L) (01049)	Mercury (µg/L) (71900)	Nickel (µg/L) (01065)	Zinc (µg/L) (01090)
12th St. No.10	<20	<2	8	—	—	—	—	—
12th St. No.10	<20	<2	8	—	—	—	—	—
12th St. No.10	—	—	—	—	—	—	—	—
Grant & Vine 2	—	—	—	—	—	—	—	—
Home No. 3	<1	.2	5	2.7	2.02	—	<0.06	4
Senter	E10	<1	4	—	—	—	—	—
Senter	—	—	—	—	—	—	—	—
Senter	—	—	—	—	—	—	—	—
Malone No. 1	—	—	—	—	—	—	—	—
Koch No. 1	—	—	—	—	—	—	—	—
SC-5-2	<20	1	4	—	—	—	—	—
SC-5-2	—	—	—	—	—	—	—	—
SC-3-02	<1	.5	8	3.6	1.13	—	<.10	13
CWS No. 20-10	<1	.2	7	E.6	E.08	—	2.31	9
SC-28	<1	.4	6	2.4	0.61	—	<.10	9
SC-2-2	<20	<1	4	—	—	—	—	—
Bascom No. 4	<20	<1	4	—	—	—	—	—
Bascom No. 5	<1	.3	5	3	1.49	—	<.10	5
Buena Vista No. 6	<1	.2	4	2.5	1.82	—	<.06	16
O'Connor Hospital	<1	.3	4	2.3	6.86	—	<.06	4
CWS No. 29-01	—	—	—	—	—	—	—	—
Williams No. 3	M	<2	E4	—	—	—	—	—
Williams No. 3	<20	<2	4	—	—	—	—	—
Williams No. 3	M	<2	E4	—	—	—	—	—
Williams No. 3	<20	<2	E4	—	—	—	—	—
Williams No. 3	<20	<2	4	—	—	—	—	—
Williams No. 3	<20	<2	5	—	—	—	—	—
Williams No. 3	<20	<2	E3	—	—	—	—	—
Williams No. 3	<20	<2	4	—	—	—	—	—
Williams No. 3	<20	<2	5	—	—	—	—	—
Williams No. 3	<20	<2	4	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 3	<1	E.2	E4	1	.3	—	.7	8
Williams No. 3	—	—	—	—	—	—	—	—
Williams No. 4	—	—	—	—	—	—	—	—
Williams No. 12	—	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—	—
Three Mile No. 3	—	—	—	—	—	—	—	—
Three Mile No. 5	<20	<1	E3	—	—	—	—	—
Three Mile No. 5	—	—	—	—	—	—	—	—
Meridian No. 2	<20	<1	4	—	—	—	—	—
Ridgley No. 2	<20	<1	E2	—	—	—	—	—
Ridgley No. 3	—	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Aluminum (µg/L) (01106)	Arsenic (µg/L) (01000)	Lithium (µg/L) (01130)	Raw chromium (µg/L) (01034)	Lead (µg/L) (01049)	Mercury (µg/L) (71900)	Nickel (µg/L) (01065)	Zinc (µg/L) (01090)
Virginia No. 1	—	—	—	—	—	—	—	—
CWS No. 27-01	—	—	—	—	—	—	—	—
CWS No. 31-01	—	—	—	—	—	—	—	—
CWS No. 18-02	—	—	—	—	—	—	—	—
CWS No. 15-01	—	—	—	—	—	—	—	—
GOWC No. 8	—	—	—	—	—	—	—	—
GOWC No. 2	—	—	—	—	—	—	—	—
SJC No. 11	—	—	—	—	—	—	—	—
GOWC No. 21	<1	0.4	12	2.2	1.63	—	<0.06	6
GOWC No. 12	—	—	—	—	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Delta deuterium (per mil) (82082)	Delta oxygen (per mil) (82085)	Percent artificial recharge from delta deuterium	Percent artificial recharge from delta oxygen	Tritium pCi/L) (07000)	Strontium 87/86 (Ratio) (75978)	Delta-boron11 (per mil)
PA Hale St No. 3	–45.2	–6.6	13	12	—	—	—
Cropley No. 3	–45.8	–6.75	15	16	—	—	—
Gish No.2	–42.8	–6.6	5	12	1.9	0.70730	15.23
Berryessa No.1	–45.5	–6.75	14	16	4.2	—	—
Marbury No. 1	–51.1	–7.36	31	31	—	—	—
Agnews No. 6	–45.5	–6.76	14	16	—	—	—
SJC No. 1	–42.2	–6.33	4	6	—	—	—
SC-26	–44	–6.53	9	10	2.8	—	—
SC-21	–42.4	–6.33	4	6	1.7	—	—
CWS No. 121-02	–42	–6.1	3	0	—	—	—
CWS No. 123-01	–41.6	–5.6	2	0	—	—	—
CWS No. 123-02	–41.2	–5.64	1	0	—	—	—
CWS No. 119-03	–40.8	–6.1	0	0	—	—	—
MV-21	–41.3	–6.27	1	4	2.7	—	—
MV-19	–40.9	–6.33	0	6	—	—	—
MV-20	–41.6	–6.32	2	5	—	—	—
MV-20	—	—	—	—	—	—	—
MV-20	–42.7	–6.31	5	5	—	—	—
MV-20	–41	–6.25	0	4	—	—	—
CWS No. 116	–43	–6.23	6	3	—	—	—
CWS No. 104-02	–41	–5.98	0	0	—	—	—
MV-9	–44.4	–6.33	10	6	—	—	—
CWS No. 39-01	–43.1	–6.28	6	4	—	—	—
CWS No.17	—	—	—	—	—	—	—
CWS No.17	—	—	—	—	—	.70727	13.90
CWS No.17	–41.3	–6.22	1	3	—	.70728	12.65
CWS No.17	—	—	—	—	—	—	—
CWS No.17	–40.2	–6.27	0	4	—	—	—
CWS No.17	–40.8	–6.2	0	2	—	.70730	12.65
CWS No.17	–40.4	–6.2	0	2	—	.70725	14.15
CWS No.17	–41.6	–6.22	2	3	—	.70728	12.90
CWS No.17	–41.8	–6.22	2	3	—	.70718	14.24
PA Rinconda	–46.2	–6.88	16	19	—	—	—
Main P	–43.8	–6.53	8	10	15.3	.70752	19.48
Main P	–44.6	–6.6	11	12	—	—	—
17th St. No.3	—	—	—	—	16.3	.70736	6.74
17th St. No.3	–42.4	–6.19	4	2	—	—	—
17th St. No.7	–43.9	–6.43	9	8	11.00	.70733	16.48
17th St. No.12	–42.5	–6.33	5	6	7.6	.70732	18.48
17th St. No.12	–41.9	–6.28	3	4	—	—	—
12th St. No.10	–43.3	–6.13	7	1	13.5	.70733	20.73
12th St. No.10	–41	–5.8	0	0	18.3	.70731	22.98
12th St. No.10	–41.5	–5.84	2	0	—	.70735	18.11

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Delta deuterium (per mil) (82082)	Delta oxygen (per mil) (82085)	Percent artificial recharge from delta deuterium	Percent artificial recharge from delta oxygen	Tritium pCi/L) (07000)	Strontium 87/86 (Ratio) (75978)	Delta-boron11 (per mil)
12th St. No.10	–43	–6.12	6	0	—	.70735	16.98
12th St. No.10	–42.9	–6.12	6	0	14.2	.70736	18.36
12th St. No.10	–42.3	–5.98	4	0	15.2	0.70738	18.61
12th St. No.10	–40.9	–6.1	0	0	13.3	.70738	18.23
12th St. No.10	–42.5	–6.1	5	0	12.7	.70735	16.73
12th St. No.10	–42.4	–6.25	4	4	—	—	—
Grant & Vine 2	–45.2	–6.59	13	12	—	—	—
Home No. 3	–42.8	–6.57	5	11	14.6	—	—
Senter	–42.2	–6.01	4	0	16.6	.70740	17.48
Senter	–44	–6.06	9	0	—	—	—
Senter	–44	–6.06	9	0	—	—	—
Malone No. 1	–48.7	–6.59	23	12	—	—	—
Koch No. 1	–44.8	–6.27	12	4	—	—	—
SC-5-2	–40.8	–6.47	0	9	.3	.70730	8.74
SC-5-2	–41.4	–6.48	1	9	—	—	—
SC-3-02	–43.8	–6.66	8	14	10.3	—	—
CWS No. 20-10	–44.1	–6.29	9	5	5.2	—	—
SC-28	–44.6	–6.83	11	18	9.7	—	—
SC-2-2	–44.6	–6.86	11	19	15.6	.70741	12.24
Bascom No. 4	–46.3	–6.92	16	20	15.7	.70748	17.23
Bascom No. 5	–54.7	–7.53	42	35	14.6	—	—
Buena Vista No. 6	–49.8	–7.08	27	24	14.7	—	—
O'Connor Hospital	–51.7	–7.32	32	30	13.1	—	—
CWS No. 29-01	–61.1	–8.2	61	51	—	—	—
Williams No. 3	–42.2	–6.54	4	11	—	—	—
Williams No. 3	–43.6	–6.56	8	11	—	—	—
Williams No. 3	–45.2	–6.56	13	11	—	.70742	15.48
Williams No. 3	–45.1	–6.7	12	15	16	—	—
Williams No. 3	–45.1	–6.67	12	14	—	.70741	12.74
Williams No. 3	–43.9	–6.5	9	10	—	—	—
Williams No. 3	–44.6	–6.55	11	11	16.7	.70741	13.49
Williams No. 3	–43.7	–6.47	8	9	—	.70739	13.99
Williams No. 3	–42.5	–6.43	5	8	9.5	.70739	14.24
Williams No. 3	–43.3	–6.42	7	8	—	.70743	12.24
Williams No. 3	–43.5	–6.57	8	11	—	—	—
Williams No. 3	–44.2	–6.64	10	13	—	—	—
Williams No. 3	—	—	—	—	—	—	—
Williams No. 3	–45.4	–6.76	13	16	—	—	—
Williams No. 4	–44.5	–6.57	11	11	—	—	—
Williams No. 12	–48.4	–7.11	22	25	—	—	—
Three Mile No. 3	–57.4	–7.83	50	42	—	.70765	6.74
Three Mile No. 3	–57.7	–7.74	51	40	—	—	—
Three Mile No. 5	–57.3	–7.84	49	42	16.2	.70766	8.24
Three Mile No. 5	–57.7	–8.04	51	47	—	—	—
Meridian No. 2	–46.5	–6.68	17	14	12.5	.70751	32.22

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Delta deuterium (per mil) (82082)	Delta oxygen (per mil) (82085)	Percent artificial recharge from delta deuterium	Percent artificial recharge from delta oxygen	Tritium pCi/L) (07000)	Strontium 87/86 (Ratio) (75978)	Delta-boron11 (per mil)
Ridgley No. 2	−55.7	−7.61	45	37	14	0.70773	11.49
Ridgley No. 3	−53	−7.52	36	35	—	—	—
Virginia No. 1	−40.1	−6.36	0	6	—	—	—
CWS No. 27-01	−40.6	−6.15	0	1	—	—	—
CWS No. 31-01	−41.6	−6.13	2	1	—	—	—
CWS No. 18-02	−43.8	−6.45	8	9	—	—	—
CWS No. 15-01	−40.8	−5.82	0	0	—	—	—
GOWC No. 8	−45.9	−6.26	15	4	—	—	—
GOWC No. 2	−42	−6.08	3	0	—	—	—
SJC No. 11	−41.5	−6.11	2	0	—	—	—
GOWC No. 21	−43.3	−6.11	7	0	13.4	—	—
GOWC No. 12	−41.4	−6.05	1	0	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Carbon 13/12 (per mil) (82081)	Percent modern carbon (49933)	Uncorrected age (years before present)	Initial corrected water age (years before present)
PA Hale St No. 3	—	—	—	—
Cropley No. 3	—	—	—	—
Gish No.2	–15.08	35.71	8,500	8,000
Berryessa No.1	—	—	—	—
Marbury No. 1	—	—	—	—
Agnews No. 6	—	—	—	—
SJC No. 1	—	—	—	—
SC-26	—	—	—	—
SC-21	—	—	—	—
CWS No. 121-02	—	—	—	—
CWS No. 123-01	—	—	—	—
CWS No. 123-02	—	—	—	—
CWS No. 119-03	—	—	—	—
MV-21	—	—	—	—
MV-19	—	—	—	—
MV-20	—	—	—	—
MV-20	—	—	—	—
MV-20	—	—	—	—
MV-20	—	—	—	—
CWS No. 116	—	—	—	—
CWS No. 104-02	—	—	—	—
MV-9	—	—	—	—
CWS No. 39-01	—	—	—	—
CWS No.17	—	—	—	—
CWS No.17	—	—	—	—
CWS No.17	—	—	—	—
CWS No.17	—	—	—	—
CWS No.17	–13.49	78.28	2,000	1,500
CWS No.17	—	—	—	—
CWS No.17	–14.25	74.93	2,400	1,800
CWS No.17	–13.71	71.23	2,800	2,200
CWS No.17	–13.79	61.5	4,000	3,500
PA Rinconda	—	—	—	—
Main P	–14.76	79.73	1,400	1,300
Main P	—	—	—	—
17th St. No.3	–15.55	81.37	1,700	1,200
17th St. No.3	—	—	—	—
17th St. No.7	–15.4	93.51	560	0
17th St. No.12	–15.03	65.01	3,600	3,000
17th St. No.12	—	—	—	—
12th St. No.10	–15.62	83.17	1,500	960
12th St. No.10	–15.4	93.51	560	0
12th St. No.10	–14.83	82.02	1,600	1,100
12th St. No.10	–15.62	86.74	1,200	600
12th St. No.10	–15.23	84.66	1,400	830
12th St. No.10	–15.63	86.71	1,200	630

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Carbon 13/12 (per mil) (82081)	Percent modern carbon (49933)	Uncorrected age (years before present)	Initial corrected water age (years before present)
12th St. No.10	–15.21	82.32	1,600	1,100
12th St. No.10	–15.52	83.02	1,500	980
12th St. No.10	—	—	—	—
Grant & Vine 2	—	—	—	—
Home No. 3	—	—	—	—
Senter	–15.58	90.18	850	300
Senter	—	—	—	—
Senter	—	—	—	—
Malone No. 1	—	—	—	—
Koch No. 1	—	—	—	—
SC-5-2	–14.57	43.08	7,000	6,400
SC-5-2	—	—	—	—
SC-3-02	—	—	—	—
CWS No. 20-10	—	—	—	—
SC-28	—	—	—	—
SC-2-2	–14.26	84.49	1,400	830
Bascom No. 4	–13.26	67.45	3,200	2,700
Bascom No. 5	—	—	—	—
Buena Vista No. 6	—	—	—	—
O'Connor Hospital	—	—	—	—
CWS No. 29-01	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	–15.26	94.36	480	0
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	–14.16	88.76	980	430
Williams No. 3	—	—	—	—
Williams No. 3	–13.91	92.51	640	90
Williams No. 3	–15.03	87.77	1,100	520
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 3	—	—	—	—
Williams No. 4	—	—	—	—
Williams No. 12	—	—	—	—
Three Mile No. 3	—	—	—	—
Three Mile No. 3	—	—	—	—
Three Mile No. 5	–14.28	104.6	0	0
Three Mile No. 5	—	—	—	—
Meridian No. 2	–14.97	56.51	4,700	4,200
Ridgley No. 2	–14.13	98.09	160	0
Ridgley No. 3	—	—	—	—

Table 16. Summary of selected U.S. Geological Survey (USGS) water-chemistry data from selected water-supply wells, Santa Clara County, California—Continued

Local well name	Carbon 13/12 (per mil) (82081)	Percent modern carbon (49933)	Uncorrected age (years before present)	Initial corrected water age (years before present)
Virginia No. 1	—	—	—	—
CWS No. 27-01	—	—	—	—
CWS No. 31-01	—	—	—	—
CWS No. 18-02	—	—	—	—
CWS No. 15-01	—	—	—	—
GOWC No. 8	—	—	—	—
GOWC No. 2	—	—	—	—
SJC No. 11	—	—	—	—
GOWC No. 21	—	—	—	—
GOWC No. 12	—	—	—	—

Table 17. Summary of slug-test estimates of hydraulic properties for selected multiple-well monitoring sites, Santa Clara County, California

[Geometric-mean values shown are based on an assumed range in specific-storage values of 1×10^{-5} and 1×10^{-6} ft-1; values in italic are analyzed with the Van Der Kamp method; ft^2/d, foot squared per day; ft/d, foot per day; — indicates unable to analyze]

Local well name	Transmissivity (ft^2/d)	Hydraulic conductivity (ft/d)	Number of tests
CCOC-1	1,234–1,532	61.7–76.6	20
CCOC-2	650–810	32.5–40.5	24
CCOC-3	1,338–1,644	66.9–82.2	26
CCOC-4	1,292–1,586	64.6–79.3	30
CCOC-5	2,798–3,421	280–342	32
MGCY-1	160–196	8.0–9.8	38
MGCY-2	30–38	1.5–1.9	40
MGCY-3	96–116	4.8–5.8	40
MGCY-4	2–2	.1–.1	1
MGCY-5	—	—	—
WLLO-1	—	—	—
WLLO-2	168–204	8.4–10.2	40
WLLO-3	70–86	3.5–4.3	40
WLLO-4	192–236	9.6–11.8	40
WLLO-5	1,064–1,324	53.2–66.2	40
WLLO-6	4,804–5,830	480–583	40

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