Lahontan Basins SWRP

Storm Water Resources Plan

Technical Memorandum

Approach to Water Quality - Task 4.3

November 2017

HONEY LAKE VALLEY RESOURCE CONSERVATION DISTRICT

DEPARTMENT OF WATER RESOURCES
STATE OF CALIFORNIA

DYER ENGINEERING CONSULTANTS

Technical Memorandum
Approach to Water Quality Task 4.3

Table of Contents

List of Tables

1.0 INTRODUCTION

The Honey Lake Valley Resource Conservation District (HLVRCD) Storm Water Resource Plan (SWRP) is being developed to improve water quality and meet objectives approved by the HLVRCD. Objectives for the SWRP are to use runoff as a resource to improve water quality, reduce localized flooding, and increase water supplies for beneficial use and the environment. This water quality memorandum outlines the water quality compliance guidelines, current surface water conditions, and provides strategies for meeting the objectives of the SWRP. The completed SWRP meeting these objectives will allow the HLVRCD to be eligible for California Storm Water Grant Program (SWGP) funds. These SWGP funds have been allocated to implement projects meeting the objectives outlined in the SWRP.

Water quality issues that have been documented in the North Lahontan Basins SWRP region are outlined in this memorandum. Table 3-1 is a quick reference on the various water quality issues. Water quality can be impaired by both point sources and non-point sources. Point sources typically consist of direct discharge into a water source from an external entity. Non-point pollutant sources are often naturally occurring within the geological makeup of the region.

The region also has an existing Salt & Nutrient Management Plan (SNMP) The SNMP outlines the water quality issues from a salt and nutrient perspective, which is a major concern in the region due to the terminal lakes basin, and heavy agriculture.

2.0 WATER QUALITY COMPLIANCE

This section outlines the water quality priorities for the watershed, as identified by various regulatory guidance, including the Federal Clean Water Act and the Lahontan Regional Water Quality Control Board (LRWQCB).

The region's stakeholders and storm water project applicants are required to meet a variety of water quality mandates and to meet the requirements of their respective discharge permits. The permits and respective requirements included herein are directly applicable to the North Lahontan Region. These permits include;

- Section 303(d) impaired water bodies,
- Total Maximum Daily Loads (TMDL)
- National Pollutant Discharge Elimination System (NPDES) permits
    - General Construction (SWPPP)
    - Municipal Separate Storm Sewer System Permits (MS4)

- General Waste Discharge Requirements (WDR)

These permits are further discussed in the following sections.

2.1 Clean Water Act Identified Impairments and TMDL Prioritization

As authorized by the Clean Water Act (CWA), the (NPDES) permitting program supervises water pollution by regulating point-sources that discharge into a water source within the county. Section 303(d) of the CWA requires States to develop a list of impaired and threatened water sources. The state is then responsible for identifying the pollutant causing the impairment and prioritizes the development of Total Maximum Daily Loads (TMDL) depending on the severity of the pollution.

A TMDL is a water quality assessment that studies:

- Pollutant-specific water quality problems
- Identifies sources of the pollutants
- Defines how much of a pollutant a water body can receive and still meet water quality standards established to protect beneficial uses
- Specifies actions to be implemented that will help achieve load reductions needed to protect receiving waters and their beneficial uses

Once a water body has been included on the 303(d) list of impaired waters, it remains until the State generates a TMDL to be approved by the EPA. When a TMDL is created for a water source, that source is removed from the list, but still monitored until full restoration is reached. Currently, the SWRP area does not require TMDL permits.

TMDL requirements are developed by the State Water Resources Control Board (SWRCB) according to Section 303(d) of the Clean Water Act. There are currently no established TMDL requirements in the basins regulated by the HLVRCD. However there are a number of State Recognized impaired waters that have been recommend for the development of TMDL's. These are outlined in section 3.

2.2 National Pollutant Discharge Elimination System Permits

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States, from any point source, is unlawful unless the discharge is in compliance with a NPDES permit. General permits establish regulatory requirements for a range of activities related to storm water and wastewater discharge and management. Applicable NPDES permits within the Lahontan SWRP

planning area include the Construction General Permit, the and the MS4 Permit. These permits are described in detail below.

2.2.1 Construction General Permit

The Construction General Permit regulates storm water discharges associated with construction projects that disturb one or more acres of soil, or construction projects that disturb less than once acre but are part of a larger common plan of development that, in total, disturbs more than one acre. Construction projects that meet these criteria are required to obtain coverage under the Construction General Permit (2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ). Compliance with the Construction General Permit requires the preparation and implementation of a project.

2.2.2 Phase II Municipal Separate Storm Sewer System (MS4) Permits

The Municipal Storm Water Program regulates storm water discharges from MS4s throughout California. The Phase II MS4 Permit Program serves municipalities with populations less than 100,000 people and regulates storm water and dry weather runoff to surface waters within the planning area. The SWRCB and LRWQCB implement and enforce the Municipal Storm Water Program for the Susan River have adopted NPDES permits to regulate MS4s.

The MS4 Permit includes BMP and management measure requirements required for commercial, industrial, municipal, and residential land uses to reduce or eliminate the discharge of pollutants to surface water sources. Also, the Permit requires inspection and post-construction assessment of BMPs and incorporates requirements for new development and re-development projects aimed at reducing surface water impacts. Low impact development (LID) requirements are mandated, as applicable, to mimic natural hydrology functions by retaining and/or treating pollutants in storm water runoff prior to MS4 discharge. All MS4 Permittees in the SWRP planning area use the BASMAA Post-Construction Manual (BASMAA, 2014) as guidance for LID BMP design. Along with LID requirements and protecting the dominant watershed processes affected by storm water runoff, hydromodification control requirements are included within the Permit. Table 2-1 below shows the MS4 permit details for Lassen County.

Table 2-1 Phase II Small MS4 General Permit

Order No. 2013-001-DWQ-Attachment A

Place Name	County	RB	Population	Urbanized Area	Designation Criteria
Susanville City	Lassen	6SLT	17,947	Susanville, CA	High Population Density

2.3 General Waste Discharge Requirements (WDRs)

Along with the SWRCB General WDRs, LRWQCB adopted R6T-2003-00004 General WDRs for small construction projects, including utility and public works projects, that are conducted in certain sensitive Lahontan Region watersheds other than Lake Tahoe. The General Order also includes WDR requirements for minor streambed/lakebed alteration projects throughout the region that are not regulated by the Army Corps of Engineers under the Clean Water Act Section 404. All WDRs must implement the applicable Regional Water Quality Control Board's water quality control plan for the region that discharge occurs; therefore, the discharger must comply with any more stringent standards including any prohibitions and/or water quality objectives for the region. A general WDR permit is used to reduce the discharge of storm water pollutants from reaching surface waters. Table 2-2, from the Table of General Permits for Use Within the Lahontan Region**,** lists the WDR permits specifically adopted by the Lahontan Region. All other State Water Control Board WDRs apply as well.

Table 2-2 – WDR permit types

Permit Number	Name	Details
R6T-2003-0004	General Waste Discharge Requirements for Small Construction Projects, including Utility, Public Works, and Minor Streambed/Lakebed Alteration Projects Throughout the Lahontan Region, Excluding Lake Tahoe	Regulates construction activity in specific high-elevation watersheds with land disturbance between 10,000 sq. ft. and 43,560 sq. ft. (one acre). It also may be used to regulate dredged and fill material discharges in State waters of the Lahontan Region when the federal Clean Water Act is not applicable (as determined by the US Army Corps of Engineers). This permit does not apply to projects within the Lake Tahoe Hydrologic Unit (please see General Order No. 6-91-31). Projects are typically non-recurring, and short-term (completed within two construction seasons). Requires `application to RWB
R6T-2004-0015	Waste Discharge Requirements for Land Disposal Of Treated Ground Water	Regulates pollutants from ground water cleanup actions involving discharge to land with underlying ground water. Primary pollutants covered are petroleum product and chlorinated hydrocarbon constituent residuals in treated waters. Requires application to Regional Water Board

2.4 California Trash Water Quality Objectives

The State of California has placed an emphasis on trash as it relates to water quality by amending the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries in California (ISWEBE). The

amendments are intended to control trash and are collectively referred to as the "Trash Amendments."

Trash in surface water is a prevalent issue in California that can threaten aquatic and marine life, cause habitat degradation, jeopardize public health and safety, and hinder recreational, navigational, and commercial activities. The Trash Amendments establish a narrative water quality objective for trash, prohibit trash discharges, and provide implementation requirements for permitted storm water dischargers. The amendments also set compliance time schedules and provide a monitoring and reporting framework.

According to a LBRWQB Executive Officer Report dated May16, 201-June 15, 2015;

> *"The Trash Amendment provisions will be incorporated into National Pollutant Discharge Elimination System permits, waste discharge requirements, and applicable waivers - affected permit categories include municipal Storm Water systems, Caltrans, industrial sites, and construction sites. Municipal and Caltrans dischargers must demonstrate full compliance with the Trash Amendments within ten years of the first implementing permit and fifteen years after the effective date of the amendments."*

Projects evaluated and prioritized by this SWRP will be required to comply with the trash amendments as they apply to the respective required discharge permit.

3.0 WATER QUALITY CONDITIONS

This section discusses the water quality conditions in the SWRP region. The following water quality issues have been identified in the region through various permits, studies, and assessments:

- Arsenic
- Bacteria/Pathogens
- Sediment
- Salt and Nutrients (TDS, Nitrogen, Phosphorus)
- Temperature
- Trash
- Metals
- Mercury

Determination of TMDLs has been recommended by the United States Environmental Protection Agency (EPA) for the water body segments (Designation 5A) shown in Table 3-1 and locations are shown in Figure 1. Accompanying pollutants detected, potential pollutant sources, and assessed

area are also shown for each water body in Table 3-1. Completion dates for all listed water bodies are in 2019 except for several portions of the Susan River which have completion dates in 2021.

Table 3-1 - Impaired Water Bodies

Water Body Name/ Type/ Watershed	Pollutant	Potential Sources	Area Assessed
Honey Lake/Saline Lake/ 18080003	Arsenic	Flow regulation, Geothermal development, Nonpoint source	57,756 ac
	Salinity/TDS/ Chlorides	Agricultural return flows, water diversion, geothermal development, natural sources, sediment resuspension	57,756 ac
Eagle Lake/ Lake and Stream/18080003	Nitrogen	Agriculture, atmospheric deposition, grazing-related, highway maintenance and runoff, internal nutrient cycling, recreational boating, natural and nonpoint sources, wastewater systems (septic) sediment resuspension, silviculture, wastewater	20,704 ac
	Phosphorus	Atmospheric deposition, grazing, highway and road runoff, internal nutrient cycling, marinas and recreational boating, natural and nonpoint sources, septic tanks, urban runoff, recreational and tourism activities, sediment resuspension, silviculture, and wastewater	20,704 ac
Honey Lake/ Wetlands/18080003	Metals	Agriculture, geothermal development, natural sources, nonpoint sources	62,590 ac
Honey Lake/ Wildfowl Management Ponds	Metals	Agriculture, geothermal development, natural sources	665 ac
	Salinity/TDS/ Chlorides	Agriculture, geothermal development, natural sources	665 ac
	Trace Elements	Geothermal development and nurseries	665 ac
Susan River/Headwaters to Susanville/18080003	Mercury/TDS/ Total Nitrogen/ Total Nitrogen as N/ Unknown Toxicity	Source Unknown	38 miles

Susan River/Susanville to Litchfield/18080003	Mercury/TDS/ Turbidity/ Unknown Toxicity	Source Unknown	18 miles
Susan River/Litchfield to Honey Lake/18080003	Mercury/ Unknown Toxicity	Source Unknown	9.3 miles

Arsenic

Arsenic is a regulated trace element with an established State Maximum Contaminant Level (MCL) in drinking water of 10 μg/L. Arsenic is a semi-metal element that occurs naturally in the environment, but can also be released to the environment by human activities (SWRCB 2017) Arsenic has been found in the Honey Lake / Saline Lake.

Arsenic Potential Sources

DWR identified the potential anthropogenic sources of arsenic as flow regulation, geothermal development, and nonpoint source. Generally, the primary source of arsenic in the environment is from the weathering of arsenic-containing rocks. Naturally occurring arsenic is found in a variety of solid phases, including a component of volcanic glass in volcanic rocks, adsorbed to and co-precipitated with metal oxides (especially iron oxides), adsorbed to clay-mineral surfaces, and associated with sulfide minerals and organic carbon. The concentrations of arsenic in soil (0.1 to 40 ppm) and sedimentary rocks (13 ppm) are generally higher than the average (2 ppm) in the earth's crust due to movement and accumulation of the arsenic through weathering. Additionally, volcanic activity and forest fires can release arsenic into the atmosphere where it later falls to earth; however, precipitation in unpolluted areas usually contains less than 1 ppb of arsenic. (SWRCD 2017)

Bacteria/Pathogens

While Bacteria and Pathogens are not specifically identified as a major issue in the Lahontan Basins SWRP region, bacteria in water quality is a constant. Drinking water must treated to remove Bacteria and Pathogens though out the region and a general awareness of clean water can help to reduce various bacterial pollutants in the water. Bacteria can indicate the presence of pathogenic organisms that are found in warm-blooded animal waste. Honey lake Valley has a significant agricultural industry. There are many possible disease-causing organisms, regulatory agencies measure E. coli indicator bacteria which are found in stomachs of warm blooded animals. Bacteria and pathogens affect water quality and diminish the health of the area

waterways and could negatively affect the local population and people who visit. (“Pathogens & Contaminants.” 2017)

Potential Sources of Bacteria/Pathogens

Bacteria and pathogens existing in surface water are a natural occurrence. The Honey Lake Valley waterways generally have a lower concentration than normal, but still require adequate filtration and purification processes. During warmer, dry weather conditions, more bacteria is concentrated in the Susan river with highly forested lands having a lower concentration than agricultural land and urban areas. Sewered urban areas have the highest concentration of bacteria and pathogens, due to the potential microbial dense sources being leached into the waterway. Other potential sources of pathogens and bacteria are from the natural wildlife utilizing the river environment as a food source, water source and possibly contaminating the river with excrement. As the areas surrounding the Honey Lake Valley become more populated and agricultural areas expand, bacteria and pathogen levels will rise accordingly due to municipal sewage sources, urban runoff, recreation along the river and increased recycled water irrigation. (“Pathogens & Contaminants.” 2017)

Sediment

Sediment imbalance is one of the most common and significant water quality issues of any river, stream, or lakes system. Sediment degrades water quality for drinking as well as diminishes the habitat for natural wildlife in the water source. Sediment from soil erosion eventually flows downstream, collecting and depositing in slower moving water causing a reduced water depth, as well as potential future flooding from the reduced capacity of the channel. Sediment can also produce and transport toxins such as arsenic, mercury and other dangerous contaminants downstream affecting the local population and natural wildlife. The increased turbidity can affect wildlife, fish, and various habitat due to water quality degradation. (“Sediment”, 2014)

Potential Sources of Sediment

Sediment comes from the erosion of soils due to the natural movement of water through a river or stream, as well as, particulate from storm water drainage and surface flooding being deposited into waterways. Natural erosion due to precipitation and storm water runoff is a source of sediment. Flooding due to natural storm cycles can move significant amounts of sediment and effect water quality severely in certain instances. Anthropogenic sources of sediment have a wide range of sources such as various forms of development and construction, land clearing, paving, and altering natural flow courses.. Future growth of the region could increase sediment loadings in the waterways, BMP’s and other engineered solutions can be utilized to minimize potential negative impacts. (“Sediment”, 2014)

Phosphorus and Nitrogen

Nitrogen and phosphorous are bio stimulatory substances that can cause eutrophication, where algae and other aquatic vegetation experience rapid growth. This rapid growth cannot be sustained by the ecosystem and the subsequent death of such overgrowth can use up large amounts of oxygen in the water, which is harmful to other aquatic organisms. Also, large algae blooms constrict oxygen levels in the water causing death to numerous fish and other aquatic life. (“Nutrient Pollution, 2017)

Potential Sources of Phosphorus and Nitrogen

Fertilizer is the main contributor for nitrogen and phosphorous in the watershed. Fertilizer can enter the water sources of the Honey Lake Valley from runoff due to excessive irrigation or runoff due to rainfall that is washed out of the fertilized land and into the streams, rivers and lakes. Potential sources for phosphorous also include pesticides, industry, cleaning compounds, human and animal wastes, and phosphate-containing rocks. Similar to phosphorous, nitrogen can enter the system through human and animal waste, specifically septic tanks, farm livestock, and animal waste including fish and birds. Specific to nitrogen, potential biotic sources are bacteria resulting from breaking down toxic ammonia waste and the decay of dead organisms. (“Nutrient Pollution, 2017)

Temperature

Temperature is a major component to aquatic ecosystems, and governs the types of organisms that can live and thrive in them. The temperatures of the water ways in the Honey Lake Valley are higher during summer months and much cooler during winter; however, as the temperature gets too far away from the natural range, a reduction in natural species occurs. Warmer temperatures in water cause a reduction in its ability to hold on to dissolved oxygen (DO), which directly affects the aquatic life that depend on the DO for survival. (Perlman, 2017)

Potential Sources of Temperature

Causes of temperature can be both natural and anthropogenic. Natural temperature change occurs in water ways. Anthropogenic temperature change can result from many different sources. During summer months, impervious surfaces such as parking lots and roads, become heated and can cause a significant increase in storm water runoff temperatures that flow into streams and rivers. This increased temperature can cause shock to the aquatic life and damage water quality. Temperature pollution can also come from various tailwater discharges such as treated water, water used in industrial cooling processes, and or energy production. (Perlman,2017)

Trash

Trash in the natural aquatic environment can be destructive. Trash sources are varied and are generally more prevalent in heavily populated areas. Trash comes in many forms - plastics, paper products, glass, metals, etc. Non-biodegradable materials can take decades to biodegrade, and with buildup, can have significant cumulative negative effects to the aquatic ecosystem.

Potential Sources of Trash

Trash enters the waterways in the Honey Lake Valley in several ways. The largest contributors are the urban areas, in which trash is generated in large amounts and can flow into the rivers, streams and lakes via storm water runoff and wind. Portions of the Susan River run along a fairly major highway where littering is common and gets conveyed into the River by storm water runoff and wind.

Metals

Heavy metals are naturally occurring elements in the environment and there is a trace presence in almost every water source. There are different toxicity levels associated with individual metals, but all pose a danger when presented in high concentrations. Some example metals found in the waterways of the Honey Lake Valley include: Arsenic, Mercury, and Lead. These metals have been reported to negatively affect cellular components of organisms and have carcinogenic properties. These metals are systemic toxicants which are known to cause organ damage and become carcinogenic to humans and animals even at very low levels of concentration. It is important to understand these negative effects and implement controls to reduce or eliminate these metals from water sources. (Heavy Metals in The Environment, 2002**)**

Potential Sources of Metals

Heavy metals are embedded within the Earth's crust and are introduced to the surface via geothermal and volcanic processes, as well as, mining, industrial waste and agriculture. In the Honey Lake Valley, volcanic and geothermal processes are common as well as agricultural operations utilizing fertilizers which contain heavy metals. As a river naturally erodes soil or storm water runoff erosion flowing into a river, stream or lake, metals that were embedded are released into the waterway that eventually is ingested by wildlife or humans. Also, agricultural fertilizers contain dangerous metals and are introduced to water systems from storm runoff, ground absorption and wind carrying the fertilizer to surface water sources. (Heavy Metals in The Environment, 2002)

Mercury

The Susan River headwaters through to Honey Lake has been listed under the Clean Water Act Section 303(d) for Mercury pollution due to its presence in tissues of Trout. The Mercury toxicity level is unknown, but is two of the four samples that were taken exceeded the tissue criterion.

Mercury has many negative effects on human beings and wildlife, but most notably, the Methylmercury's effect on developing embryos, causing neurodevelopmental damage. (Wentz, 2014)

Potential Sources of Mercury

The main sources of Mercury are volcanic and geologic deposits, and atmospheric deposition. When Mercury enters surface water, Methylation occurs which is a product of complex processes that transport Mercury. Mercury attaches to sediment particles and diffuses into the water column and be Methylated by organisms ingesting the particulate and passing it into other larger animals or humans. Being that the Honey Lake Valley is volcanic and has geothermal processes, control of sediment sources such as natural erosion and surface storm water runoff must be maintained. (Wentz, 2014)

4.0 SWRP STRATEGIES FOR WATER QUALITY COMPLIANCE

4.1 SWRP Program Guidance for Water Quality

The SWRP document per the Storm Water Resource Plan Guidance (SWRCB 2015B) must be in compliance with existing federal and State regulations and policies, including State Water Board plans and policies, Clean Water Act, California Environmental Quality Act, Safe Drinking Water Act and existing water rights decrees, permits and licenses. The plan must not negatively effect, and also be consistent with existing NPDES permits and WDR's.

The Plan should discuss how the various storm water management objectives within the watershed will protect or improve water quality, water supply reliability, and/or achieve other objectives that benefit the watershed. The Plan should include a discussion of the added benefits to integration of multiple storm water management strategies, as compared to stand-alone projects. The plan must discuss how the objectives and projects fit into the overall management goals of the IRWMP. (SWRP Final Guidelines, 2015)

5.0 REFERENCES

Lahontan Regional Water Quality Control Board. “Available Documents.” Available Documents | Lahontan Regional Water Quality Control Board, www.waterboards.ca.gov/lahontan/water_issues/available_documents/.

California, State of. “Phase II Small Municipal Separate Storm Sewer System (MS4) Program.” State Water Resources Control Board, www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml.

Parris, Wendy, and Khosrow Adeli. “In Vitro Toxicological Assessment of Heavy Metals and Intracellular Mechanisms of Toxicity.” Heavy Metals In The Environment, 2002, doi:10.1201/9780203909300.ch3.

“Pathogens & Contaminants.” Pathogens & Contaminants | SSWM, accessed December 2017www.sswm.info/content/pathogens-contaminants.

“Sediment.” NIWA, 10 Feb. 2014, www.niwa.co.nz/our-science/freshwater/tools/kaitiaki_tools/impacts/sediment.

“Nutrient Pollution.” EPA, Environmental Protection Agency, 9 Mar. 2017, www.epa.gov/nutrientpollution.

Wentz, Dennis A., et al. The quality of our nations water: mercury in the nations streams--levels, trends, and implications. U.S. Department of the Interior, U.S. Geological Survey, 2014.

Perlman, USGS Howard. “Water properties: Temperature.” Temperature - Water Properties, accessed December 2017 USGS Water Science School, water.usgs.gov/edu/temperature.html.

California Regional Water Quality Control Board. “Final California 2014 and 2016 Integrated Report (303(d) List/305(b) Report),” October 3, 2017.

Honey Lake Valley Resource Conservation District HLVRCD, 2013, Infrastructure Inventory and Capital Improvements plan, Lassen County, California. Dyer Engineering Consultant, Inc.

California State Water Resources Control Board, Division for Water Quality – Gama Program, October 2017, Groundwater Information Sheet – Arsenic

California Department of Food and Agricultural, Tonnage Reports of Commercial Fertilizers and Agricultural Minerals for July 2011-June 2012, https://www.cdfa.ca.gov/is/ffldrs/fertilizer.html

California State Water Resources Control Board, 2016, GeoTracker Gama Groundwater Information System. Accessed August 2017 http://geotracker.waterboards.ca.gov/search.asp?cmd=search&hidept=True&status=&reporttitle=Lassen+County&county=Lassen

DWR, 2003a, California's Groundwater, Bulletin 118 – Update 2003. http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/Bulletin118_Entire.pdf

Fong at el. 2004 Susan River Toxicity Testing Project, Regional Water Quality Control Board, Lahonton Region, Contract #02-107-250-0

GS. Hilton, (1968) Water-Resources Reconnaissance In Southeastern Part of the Honey Lake Valley Lassen County CA. Geological Survey Water-Supply Paper 1619-Z

Lassen County Groundwater Management Plan (2007) Brown and Caldwell

Lassen County Department of Public Health, Division of Environmental Health, 2015, Historical Water Quality Monitoring Data 2004 through 2014.

Lassen Irrigation District, 2007, Status of Water Supply.

USGS and partnerships with CA DWR and NV DWR. Elinor H. Handman 1990, Groundwater Resources of Honey Lake Valley, Lassen County, California, and Washoe County, Nevada.

USGS, Groundwater-Quality Data in the Cascade Range and Modoc Plateau Study Unit, 2010: Results from the California GAMA Program (Shelton, Fram, Belitz)