

Groundwater Quality Protection Strategy for the Central Valley Region, a Roadmap - Addendum 2015

Table of Contents

Executive Summary	3
Introduction.....	4
Table 1 Groundwater Quality Protection Strategy 2010 Actions	5
Updates to Section 3 Background	6
3.1 Agencies and Organizations	6
3.1.2 State Agencies	6
3.2 Legislation Actions, Bond Initiatives, and Stakeholder Driven Initiatives.....	6
3.2.2 Integrated Regional Water Management.....	6
3.2.4 Plan for Implementation of Low-Threat Underground Storage Tank Case Closure Policy and Additional Program Improvements.....	6
3.2.5 Senate Bill 4 Oil and Gas Well Stimulation Activities	7
3.2.6 Sustainable Groundwater Management Act	7
3.2.7 Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1)	8
3.2.8 Senate Bill 445 Site Cleanup Subaccount Program	8
3.2.9 Senate Bill 883 Well Completion Reports.....	8
3.2.10 Antidegradation Policy Project	8
3.4 Primary Constituents of Concern	9
3.4.9 Hexavalent Chromium	9
Updates to Section 4 Groundwater Quality Protection Programs	9
4.1 Central Valley Water Board Groundwater Quality Programs	9
4.1.1 Confined Animal Facilities.....	9
4.1.2 Irrigated Lands Regulatory Program	10
4.1.3 Site Cleanup Program	11
4.1.4 Underground Storage Tanks	13
4.1.5 Land Disposal Program (Title 27/Chapter 15)	15

4.1.7 Oil Field Program	15
Updates to Section 5 Stakeholder Concerns and Issues.....	18
5.11 Water Sustainability	18
Updates to Section 6 Roadmap	20
6.1 Future Actions	20
6.4 Region-wide Overarching Actions.....	20
6.5 Program Specific Actions	20
Table 2 Addendum 2015 Actions.....	22
6.7 Coordination with Prop 1 Funding Agencies	22
6.8 Lean 6-Sigma	23
6.9 SB4/Underground Injection Control	24
6.10 Sustainable Groundwater Management Act (SGMA).....	24
6.11 Antidegradation Policy Application to Groundwater.....	25
6.12 Addressing Hexavalent Chromium	25
6.13 Regulation of Recycled Water in a Drought Prone Region.....	26
6.14 Groundwater Recharge Utilizing Agricultural Fields	26
6.15 Onsite Wastewater Treatment Systems (OWTS) Policy Implementation – Local Agency Management Plans	27

Executive Summary

The Groundwater Quality Protection Strategy for the Central Valley Region, a Roadmap (GWQ Strategy) was developed through active stakeholder outreach and approved by the Central Valley Water Board (September 2010 Resolution R5-2010-0095.) The GWQ Strategy is intended to provide a long range planning document that defines the regulatory programs to be enhanced, and identify ways to expand on all partnering opportunities to protect groundwater quality.

Within the GWQ Strategy, actions were identified to implement groundwater quality protection. In the five years since the GWQ Strategy was approved, work has been completed on some actions, progress has been made on others, and new or emerging issues have been identified. This Addendum to the GWQ Strategy is intended to provide an update on any sections where changes may have occurred such as: new regulations or policies, programs have been added or modified, and new or emerging issues have been identified.

In this Addendum, only the sections and/or subsections have been updated where new information was available since the GWQ Strategy was approved. The sections that have had the most extensive changes are sections 3, 4, and 6. In the last five years, there have been many legislative actions, bond initiatives, and new statewide policies that warranted updates to subsection: 3.2. Section 4 describes the Groundwater Quality Protection Programs the Central Valley Water Board implements. The most extensive updates to this section was to describe changes in program implementation for subsections, 4.1.1 Confined Animal Facilities, 4.1.2 Irrigated Lands Regulatory Program, and the addition of a new Oil Field Program under section 4.1.7.

Section 6 is the Roadmap that identifies actions to be taken to improve groundwater quality. Updates to this section modify the numbering system used to identify the actions and includes nine new actions that have been prioritized using criteria from the GWQ Strategy. Some of these actions are directly related to new regulations, on-going drought related issues, or continuation of work identified in the GWQ Strategy in 2010.

Introduction

The California Regional Water Quality Control Water Board, Central Valley Region (Central Valley Water Board) adopted Resolution R5-2008-0181 in support of developing a Groundwater Quality Protection Strategy for the Central Valley Region through an active stakeholder process. To develop the Groundwater Quality Protection Strategy for the Central Valley Region, a Roadmap, public workshops were held to solicit information from stakeholders on groundwater quality protection concerns. Workshops were attended by stakeholders representing a variety of interests including: food processors, water purveyors, irrigation districts, conservation districts, rural communities, agricultural interests, federal and state agencies, cities, counties, elected officials, environmental groups, non-profit organizations, and other interested parties.

The Groundwater Quality Protection Strategy for the Central Valley Region, a Roadmap (GWQ Strategy)¹ was developed through active stakeholder outreach and approved by the Central Valley Water Board (September 2010 Resolution R5-2010-0095.) The GWQ Strategy is intended to provide a long range planning document that defines the regulatory programs to be enhanced, and identify ways to expand on all partnering opportunities to protect groundwater quality.

Following approval of the GWQ Strategy, a workplan was developed to work toward each of the high priority actions for the period of June 2011 through June 2013. A second workplan was approved for the period of June 2013-2015 which included high priority actions not completed during the 2011-2013 period and medium priority actions.

When the GWQ Strategy was approved in 2010, it was considered a communication tool and an evolving document. As actions were completed or new information was gathered, updates would be made. A summary of work from the June 2011-2013 Workplan was presented to the Central Valley Water Board in an informational item in December 2013. A similar summary of work from the June 2013-2015 Workplan will be presented at the Central Valley Water Board's February 2016 meeting. This addendum to the GWQ Strategy is the first update to the 2010 document but does not mean that issues raised in the 2010 document, are not still being worked on. This addendum is intended to provide updates on agencies and organizations, legislative actions and bond initiatives, as well as, updates on the Central Valley Water Board's groundwater quality protection programs and identifies new or emerging groundwater quality protection issues. Once this addendum has been approved by the Central Valley Water Board, a workplan will be developed to address existing, new, or emerging issues in order to protect groundwater quality.

Table 1 below provides a listing of the actions identified in the GWQ Strategy along with the current status in bold. More information on the work completed for these actions is included in workplan summary documents that can be found at: http://www.waterboards.ca.gov/centralvalley/water_issues/groundwater_quality/index.shtml#gwstrategy

¹ GWQ Strategy available for review at:
http://www.waterboards.ca.gov/centralvalley/water_issues/groundwater_quality/2010aug_gwq_protect_strat_approved.pdf

Table 1 Groundwater Quality Protection Strategy 2010 Actions

Future Action #	2010 Future Action	Priority		
		High	Medium	Low
6.4.1	CV-SALTS – Develop a Salt and Nitrate Management Plan – On going	X		
6.4.2	Implement Consistent and Scientifically Sound Groundwater Monitoring Programs – On hold	X		
6.4.3	Implement Groundwater Quality Protection Programs through the Integrated Regional Water Management Plan Groups – On going		X	
6.4.4	Broaden public participation through enhanced communication, education, and outreach – Continuous through Board functions	X		
6.4.5	Improve local implementation of Well Design and Destruction Programs – Completed December 2015		X	
6.4.6	Groundwater database – Transferred to State Water Board January 2013	X		
6.5.1(a)	Alternative Dairy Waste Disposal – Dairy Manure Digester and Dairy Manure Co-Digester Facilities - Completed June 2011	X		
6.5.1(b)	Develop Individual and General Orders for Poultry, Cattle Feedlot, other types of CAFO Facilities – Estimated Completion Spring 2016		X	
6.5.2(a)	Implementation of Long-Term ILRP – Completed October 2015	X		
6.5.2(b)	Coordinate with CDFA to identify methods to enhance fertilizer research and education program – On going		X	
6.5.3	Reduce site cleanup backlog – On going		X	
6.5.4(a)	Draft Waiver once new regulations adopted based on AB 885 – Completed January 2015		X	
6.5.4(b)	Update Guidelines for Waste Disposal from Land Developments - Completed June 2012	X		
6.5.4(c)	Develop methods to reduce backlog and increase facilities regulated – On going	X		
6.5.4(d)	Actively coordinate with State Water Board on development of statewide ASR policy guidance - Completed September 2012		X	

Updates to Section 3 Background

3.1 Agencies and Organizations

The GWQ Strategy identified agencies and organizations that had responsibility to protect groundwater quality in some manner. There have been some changes to agencies that were included in the 2010 GWQ Strategy, updated information is described below.

3.1.2 State Agencies

Effective July 2014, the administration of the Drinking Water Program was transferred from the California Department of Public Health (DPH) to the State Water Board. This transfer of responsibility aligns the state's drinking water and water quality programs in an integrated organizational structure to best position the state to both effectively protect water quality and the public health as it relates to water quality, while meeting current needs and future demands on water supplies.

With the transfer to the State Water Board the Drinking Water Program is now known as the Division of Drinking Water (DDW) which regulates public drinking water systems.

The California Department of Fish and Game (DFG) became the California Department of Fish and Wildlife (CDFW), effective January 2013. The new name was mandated by Assembly Bill 2402, which was signed 25 September 2012 by Gov. Edmund G. Brown Jr. The name of the department was changed to better reflect the evolving responsibilities of CDFW.

3.2 Legislation Actions, Bond Initiatives, and Stakeholder Driven Initiatives

Groundwater quality protection is influenced by legislative actions, bond initiatives, and stakeholder driven initiatives. Since the approval of the 2010 GWQ Strategy new legislation has been enacted and new bond initiatives have been approved which are described below.

3.2.2 Integrated Regional Water Management

Since 2010, there have been some changes in the make-up and names of some of the Regional Water Management Groups (RWMGs) implementing Integrated Regional Water Management (IRWM) Plans. These changes were approved by the Department of Water Resources (DWR) through the Regional Acceptance Process. A current map of the IRWM regions is available at: <http://www.water.ca.gov/irwm/grants/rap.cfm>

3.2.4 Plan for Implementation of Low-Threat Underground Storage Tank Case Closure Policy and Additional Program Improvements

A new statewide policy that affects how the Central Valley Water Board implements its Underground Storage Tank (UST) Program was approved in 2012 known as the Low-Threat Underground Storage Tank Case Closure Policy (Low Threat Closure Policy). In November 2012, the State Water Board approved the Plan for Implementation of the Policy by [Resolution No. 2012-0062](#).

The approved Plan: (1) implements the Low Threat Closure Policy adopted, and (2) summarizes other actions to improve the administration of the UST Program. The Plan is intended to provide consistent application of the Policy and consistent implementation of the UST Program in general, throughout the state. The Plan's major elements related to implementing the Policy

are to specify the roles and responsibilities of the agencies in implementing the Policy. The Plan's major elements related to UST Program improvement are to provide: (1) focus on high-priority cases (such as impacted drinking water wells, other human health impacts, and sources of free product still remaining in place), and (2) for development of Path to Case Closure Plans for each open case, including specific milestones and timelines.

3.2.5 Senate Bill 4 Oil and Gas Well Stimulation Activities

In 2013, Governor Brown signed, Senate Bill 4 (SB4) which amended the public resources and water codes relating to oil and gas well stimulation activities. This legislation sets in place requirements for oil and gas operators, the Division of Oil, Gas, and Geothermal Resources (DOGGR), the State Water Board, Regional Water Boards, and other agencies to implement when performing or permitting well stimulation treatments. The State Water Board developed and adopted [Model Criteria for Groundwater Monitoring in areas of Oil and Gas Well Stimulation \(Model Criteria\)](#) as part of the added requirements by Senate Bill 4 (statues of 2013) to the Water Code, section 10783.

The Model Criteria has three main components:

1. Area- Specific required groundwater monitoring near stimulation wells by operators
2. Requirements for Designated Contractor Sampling and Testing
3. Regional scale groundwater monitoring to be implemented by the State Water Board

Central Valley Water Board staff worked closely with the State Water Board during the development of the Model Criteria and continues to coordinate on the compliance and enforcement of the new requirements of SB4. More information on the Central Valley Water Board's Oil Field Program is included in Section 4.1.5.

3.2.6 Sustainable Groundwater Management Act

A significant legislative action occurred in September 2014, when the Governor signed into law the Sustainable Groundwater Management Act (SGMA). The Department of Water Resources (DWR) has primary responsibility for implementing SGMA. A Strategic Plan has been developed by DWR for its Sustainable Groundwater Management (SGM) Program. DWR's SGM Program will implement the new and expanded responsibilities identified in SGMA. Some of these expanded responsibilities include: (1) developing regulations to revise groundwater basin boundaries; (2) adopting regulations for evaluating and implementing Groundwater Sustainability Plans (GSPs) and coordination agreements; (3) identifying basins subject to critical conditions of overdraft; (4) identifying water available for groundwater replenishment; and (5) publishing best management practices for the sustainable management of groundwater.

For the first time in California history, a framework for sustainable, local groundwater management is established by SGMA. In recognition that groundwater is best managed at the local level, SGMA creates new authorities for local Groundwater Sustainability Agencies (GSAs), and requires development of Groundwater Sustainability Plans (GSPs) in certain high-use groundwater basins. In addition, SGMA authorizes the State Water Board to protect groundwater resources in areas where local and regional agencies are unable or unwilling to sustainably manage the groundwater within their jurisdiction.

SGMA is a new and evolving regulatory program with implementation milestones for DWR and the State Water Board from the present through 2025.

Additional information on SGMA, and coordinated implementation efforts between the State Water Board and DWR, is available at California Groundwater <http://www.water.ca.gov/cagroundwater/>. Information on DWR's SGMA related activities is found at DWR's Sustainable Groundwater Management website <http://www.water.ca.gov/groundwater/sgm/index.cfm>.

3.2.7 Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1)

In 2014, there was also a significant bond initiative known as the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Prop 1) that authorizes \$7.545 billion in general obligation bonds to fund ecosystems and watershed protection and restoration, water supply infrastructure projects, including surface and groundwater storage, and drinking water protection.

Information on the Prop 1 available funding and administering agencies is available at: <http://bondaccountability.resources.ca.gov/p1.aspx>

3.2.8 Senate Bill 445 Site Cleanup Subaccount Program

The Site Cleanup Subaccount Program (SCAP) is a new funding program established by Senate Bill 445 allowing the State Water Board to issue grants for projects that remediate the harm or threat of harm to human health, safety, or the environment caused by existing or threatened surface or groundwater contamination. Additional project eligibility includes sites where a regulatory agency has issued a directive, unless infeasible, or where the Responsible Party lacks financial resources. Unlike most other funding programs, SCAP grant applicant eligibility is not limited to public agency, public utility, non-profit organization, tribe, or mutual water company.

The Central Valley Water Board is coordinating with the State Water Board to identify sites within the region that would qualify for this funding source.

3.2.9 Senate Bill 883 Well Completion Reports

A significant change in the availability of data for groundwater research and management occurred in June 2015, with Senate Bill 83, amending California Water Code §13752 to allow public access to Well Completion Reports. This change will be another tool to manage groundwater by allowing access to information such as: aquifer architecture, basin thickness, hydrogeologic properties, water levels, well locations, and well construction. However, the law requires compliance with The Information Practices Act of 1977; DWR is in the process of redacting personal information from the Well Completion Reports before making them public. DWR's goal is to make all Well Completion Reports available online at no charge within the next year.

3.2.10 Antidegradation Policy Project

The State Water Board adopted statewide plans and policies that are implemented by the Central Valley Water Board. One such policy was adopted in October 1968 by State Water Board Resolution 68-16, Statement of Policy with Respects to Maintaining High Quality of Water in California (Antidegradation Policy). This policy establishes criteria the Regional Water Board's must satisfy before allowing discharges that may reduce water quality of surface or ground waters even though such a reduction will still protect beneficial uses.

The State Water Board has made it a priority to conduct a review of Antidegradation Policy and is considering whether to revise it, adopt an additional policy, and/or issue guidance regarding implementation of the policy. The purpose of this project is to improve the usefulness of the

Antidegradation Policy as a tool for making informed decisions regarding discharges that affect groundwater.

The process of the Antidegradation Policy Project began with initial focused stakeholder meetings in fall of 2013. Following executive and State Water Board Member briefings, work team meetings were held and staff internal discussion papers were developed from April through December 2014. A draft Scoping Document was presented to a focused stakeholder set and follow-up focused stakeholder meetings were held in June and July 2015. A revised scoping document and Public CEQA Scoping Meeting will be held in the future.

3.4 Primary Constituents of Concern

3.4.9 Hexavalent Chromium

The California Maximum Contaminant Level (MCL) for hexavalent chromium in public drinking supply, also known as chromium 6 (Cr(VI)), was established by the California Department of Public Health in 2014 at 10 parts per billion (ppb). This was a significant change from the total chromium MCL that was used prior to that time. As a result, issues with complying with the new MCL standard by dischargers and water purveyors have been identified throughout the Central Valley Region. Hexavalent chromium in groundwater can exist from anthropogenic sources such as plating shops, but also from such activities as a byproduct of in-situ treatment technologies such as in-situ chemical oxidation. Hexavalent chromium can also exist from naturally occurring geologic sources in the Sierra Nevada and Coast Ranges, and from non-point sources that may chemically enhance the occurrence of hexavalent chromium in groundwater such as agricultural operations.

Concentrations greater than the new MCL for hexavalent chromium are now impacting the ability of water purveyors to provide drinking water that is compliant with the new standard throughout the Central Valley Region.

Updates to Section 4 Groundwater Quality Protection Programs

4.1 Central Valley Water Board Groundwater Quality Programs

This section provides updates related to Central Valley Water Board Groundwater Quality Programs since August 2010.

4.1.1 Confined Animal Facilities

Since 2010, there has been a reduction in the number of dairies from over 1,600 to more than 1,300 located in the Central Valley. On 3 October 2013, the Central Valley Water Board adopted Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order No. R5-2013-0122, which replaced the original 2007 Dairy General Order. This order serves as general waste discharge requirements for discharges of waste from existing milk cow dairies of all sizes. It includes requirements for corrals, dairy production areas, and land application areas, and requires each dairy to fully implement a Waste Management Plan and a Nutrient Management Plan.

Regulatory Approach

Groundwater monitoring is the most direct way to determine if management practices at a dairy are protective of groundwater, Monitoring and Reporting Program R5-2013-0122 (MRP), which is attached to and made part of the Dairy General Order, requires groundwater monitoring to

determine if a dairy is in compliance with the groundwater limitations of the Order. Under the MRP, Dischargers have the option of either implementing individual groundwater monitoring or participating in a Representative Monitoring Program (RMP) to identify whether or not their specific management practices are resulting in adverse impacts to groundwater (i.e., whether the discharge is in compliance with the groundwater limitations of the Dairy General Order).

Data included in the first annual monitoring report of the Central Valley Dairy Representative Monitoring Program (CVDRMP) reported that groundwater beneath some dairies that have begun implementation of practices required by the 2007 General Order continues to have elevated levels of salts and nitrates beneath the production area, wastewater retention ponds, and land application areas.

The CVDRMP began monitoring groundwater in 2012, and some provisions of the 2007 General Order were only fully implemented by 2012; therefore, monitoring results may not be fully reflective of the effectiveness of current practices. Prior to the issuance of the 2007 General Order, the Central Valley Water Board requested monitoring at 80 dairies with poor waste management practices in the Tulare Lake Basin. This monitoring has also shown groundwater impacts under many of the dairies, including where groundwater is as deep as 120 feet and in areas underlain by fine-grained sediments.

The CVDRMP is a region-wide groundwater monitoring program approved by the Executive Officer as an alternative to individual groundwater monitoring at all dairies. The CVDRMP installs wells and collects and analyzes samples of first-encountered groundwater at dairies chosen as representative of other, non-monitored, dairies with respect to features such as herd size, soil conditions, depth to groundwater, pond construction, and cropland management practices. There are over 1,100 dairy members of the CVDRMP. Monitoring data are being collected at 42 representative dairies, using 443 monitoring wells.

The goals of the CVDRMP are to:

- Examine current groundwater conditions and how they relate to historical operations;
- Identify, as possible, past practices and any recent changes to those practices that contributed to currently observed groundwater quality conditions;
- Generate results that are applicable beyond areas of monitored dairies (to other non-monitored dairies); and ultimately
- Identify practices that are protective of groundwater quality.

Staff resources continue to be focused on determination of compliance with the 2013 Dairy General Order. Work also continues on the development of a Bovine Feedlot General Order and a Poultry Facilities General Order, planned for public review and Central Valley Water Board consideration during the first half of 2016.

4.1.2 Irrigated Lands Regulatory Program

There are numerous irrigated agricultural operations within the Central Valley Water Board's jurisdiction, on approximately 6.3 million acres of land. Common to these operations is the use of water to sustain crops. Depending on irrigation method, water use, geography, geology, climate, and the constituents (e.g., nutrients, pesticides, pathogens) present or used at a site, water discharged from the site may carry these constituents as waste into ground or surface waters.

The Central Valley Water Board Irrigated Lands Regulatory Program (ILRP) was initiated in 2003 with the adoption of a conditional waiver of Water Discharge Requirements (WDRs) for discharges from irrigated lands. The conditional waiver was renewed in 2006 and contained requirements to reduce waste discharged from irrigated agricultural sites (e.g., tail water, runoff from fields, subsurface drains) to surface waters. The GWQ Strategy (2010) identified Action 6.5.2(a) Implementation of a long-term Irrigated Lands Regulatory Program with the goal of developing an irrigated lands program that establishes a groundwater protection program for wastes associated with agricultural practices. In June 2011, the Board directed staff to begin developing orders to implement the long-term ILRP to regulate surface and ground water quality.

Regulatory Approach

As of October 2015 there are seven geographic and one commodity-specific general WDRs (general orders) within the Central Valley region for irrigated lands owners/operators that are part of a third-party group (coalitions). There is also a general order for growers who choose to be regulated individually. Each of these general orders includes receiving water limitations for both surface and ground water.

Current Program Implementation/Staff Activities

A priority for the ILRP is the development of a groundwater management effort. All growers are required to develop farm evaluation plans and nitrogen management plans using Executive Officer approved templates. Staff review and comment on groundwater quality assessment reports provided by the Coalitions and work with Coalitions on development of groundwater quality management plans, groundwater quality trend monitoring programs, and management practices evaluation programs.

Staff resources remain focused on review and approval of coalition and discharger monitoring and reporting plans, compliance reviews of monitoring reports, data management, and complaint investigations for both surface water and groundwater. Compliance and outreach efforts have been focused on enrollment of growers in the ILRP.

Concerns and Issues

Primary focus will continue to be on groundwater quality protection through review and approval of the Coalitions' Groundwater Quality Management Plans, review and comment of Groundwater Quality Trend Monitoring Programs, and the development of the Management Practices Evaluation Programs. Staff activities will include continued enforcement related to enrollment of growers in the ILRP and increased enforcement related to compliance with the ILRP general orders.

Each of the general orders adopted by the Board, except for Western Tulare Lake and Rice, has been petitioned to the State Water Board. The State Water Board is reviewing the administrative record and responses to the Eastern San Joaquin River Watershed petitioners' contentions

4.1.3 Site Cleanup Program

The Site Cleanup Program regulates the cleanup of private sites and federal facilities. The Central Valley Water Board staff oversees the investigation and cleanup of sites with soil and groundwater pollution by numerous pollutants. The Program addresses exposures through all environmental pathways, including surface water, groundwater, soil, sediment, the vadose zone, and air, where vapor releases from polluted sites may affect public health.

Private sites include industrial and commercial facilities, pipeline leaks and spills, aboveground tanks, and pesticide and fertilizer use and storage localities, among others, all of which may or may not be Brownfield² sites. Federal Facilities consist of federally owned or previously owned Department of Defense (DoD) and Department of Energy (DoE) sites. Decades of defense and energy research activities have degraded water quality on and around many federally-owned facilities.

Constituents of Concern

Due to the many types of sites the Site Cleanup Program oversees, there are a number of constituents of concern, a partial listing includes:

- ✓ petroleum
- ✓ volatile organic compounds
- ✓ pesticides
- ✓ inorganic constituents
- ✓ hexavalent chromium
- ✓ arsenic

Regulatory Approach

The Central Valley Water Board's regulatory approach for site assessment and cleanup is based on the policies and procedures identified in the State Water Board Resolution #92-49. Roles of agencies with regulatory authority of site cleanup are defined in a Memorandum of Understanding (MOU) dated 1 August 1990. The principles of the MOU guide agencies in avoiding duplication and acting with consistency.

Current Program Implementation/Staff Activities

New sites come into the Site Cleanup Program by various ways. Sites are referred to the Site Cleanup Program by other State, and local Agencies, via complaints from private citizens, spills reported to the Office of Emergency Services, assessments conducted for other Regional Water Board programs, and by assessments conducted for real estate transactions. As new sites come into the Site Cleanup Program they are evaluated for the amount of time that may be required to resolve concerns regarding protection of water quality and human health. If concerns cannot be resolved in 10–20 hours then the project becomes an official site and the process outlined in the MOU is followed to establish the lead agency. Agreements with the DoD provide for accelerated cleanups at military bases and other Defense sites scheduled for closure and reuse. These agreements can impact prioritization of site cleanup assignments, and also provide cost-recovery funding for State oversight activities.

Generally dischargers or responsible parties perform cleanup of private sites on a voluntary basis. The CWC allows the Regional Boards to recover reasonable expenses from responsible parties to oversee investigation and cleanup activities. The responsible parties must sign an acknowledgement form stating the intent to pay oversight bills. In cases where a Cleanup and Abatement Order is issued, that Order provides the basis for reimbursement of oversight cost.

Staff resources primary workload is managing/directing the investigation and cleanup of soil and groundwater at these facilities, while also addressing human health issues where necessary, such as vapor releases. Staff workload includes many federal Superfund sites which involve large, complex investigation and cleanup work requiring close cooperation with other state and

² The federal Small Business Liability Relief and Brownfields Revitalization Act (federal Brownfields Act) defines Brownfield sites as "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

federal agencies including the DTSC and the USEPA. Site investigation and cleanup procedures are consistent with state laws and regulations as well as applicable provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA).

As existing resources allow, staff continue investigations to identify responsible parties for orphaned, recalcitrant, and unknown sites.

Agency coordination

The Central Valley Water Board's agency coordination typically follows the coordination that is identified in the MOU and the 2005 Memorandum of Agreement (MOA) that exists to improve coordination between DTSC, the State Water Board, and regional boards regarding the oversight of cleanup activities at Brownfield sites. Agency coordination also includes working with USEPA on Superfund Sites, local Environmental Health Departments and Division of Drinking Water on sites where impacts to drinking water systems may occur or other public health concerns.

Concerns and Issues

One of the most prevalent concerns in the Site Cleanup Program is the issue of backlog sites. This issue is being addressed through Senate Bill 445 (SB445), which allocated resources to work on items such as backlogged sites. An additional concern is identification of responsible parties particularly for unknown sites and orphaned sites. An unknown site is a property where impacts to groundwater have been documented but the source(s) of the impacts are unknown. An orphaned site is a property that needs to implement cleanup of soils and/or groundwater but no economically viable responsible party can be identified to fund the cleanup. Funding from SB445 is allowing more staff resources to be spent on unknown sites. The Site Cleanup Subaccount Program established by SB445 includes grant funding for these types of sites provided they meet the eligibility criteria. Any of these types of sites can be impacted by legacy pollutants, those constituents that may no longer be in use, formerly unregulated, or past practices impacted groundwater quality as is seen in the number of PCE cases associated with the dry-cleaning industry.

Since Site Cleanup Oversight is conducted through cost recovery there was a recognized need to identify funding support for responsible parties. The new Site Cleanup Subaccount Program will help address this issue.

4.1.4 Underground Storage Tanks

The Underground Storage Tanks (UST) Program covers USTs containing petroleum fuels and non-fuel constituents. Chapter 6.7, Division 20 of the Health and Safety Code and the California Code of Regulations Title 23, Division 3, Chapter 16 established a program for operation of USTs and their releases. There are two primary program elements, leak prevention and cleanup.

The Leak Prevention Program element includes published standards and requirements for tank installation, construction, testing, leak detection, spill containment, and overflow protection. The State Water Board has established regulations governing prevention of leaks from USTs. California UST laws and regulations give Certified Unified Program Agencies (CUPAs) authority throughout the State to issue permits for tank operation and to enforce tank testing requirements within their jurisdictions. CUPAs have typically been established as a function of local environmental health or fire departments. By 2025 all single walled USTs storing petroleum fuel are to be removed from service.

Cleanup of leaking USTs often involves a soil and groundwater investigation and remediation, under the direction of a regulatory agency. Regulatory agencies directing cleanups include the State Water Resources Control Board, Regional Water Boards and Local Oversight Programs (CUPAs under contract with the State Water Board). The various agencies coordinate to ensure that requirements from each agency are met and that the directed investigation and remediation work is consistent. In November 2012 the State Board approved the Plan for Implementation of Low-Threat Underground Storage Tank Case Closure Policy (LTCP) and Additional Program Improvements (Resolution No. 2012-0062). The LTCP specifies criteria for closure of low-threat UST cases and is intended to increase UST cleanup process efficiency and to preserve limited resources for the mitigation of releases posing a greater threat to human and environmental health.

Regulatory Approach

Chapter 6.7, Division 20 of the Health and Safety Code and the California UST Regulations established the UST program. Central Valley Water Board staff also relies on the authority under the Water Code to enforce the investigations and cleanup of UST sites and the LTCP for guidance. Higher priority for UST cleanup is given to cases with imminent threat to public health and/or sensitive receptors, including impacts to domestic and municipal supply wells.

Current Program Implementation/Staff Activities

In 1990, to assist LIAs/LOPs, responsible parties (RPs), and consultants in conducting effective and cost-efficient investigations, staff from the North Coast, San Francisco Bay and Central Valley Regional Water Boards drafted the *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Storage Tank Sites* to provide uniform procedures for performing site investigations. In addition, Central Valley Regional Water Board staff developed and produced *Appendix A, Staff Recommendations for Reporting* as recommendations for consistently reporting site investigations, corrective actions, and no-further-action-required documentation associated with UST sites. The purpose of *Staff Recommendations for Reporting* is to provide a format for documents and consistent process for the regulated community, and to reduce the cost of reporting for them by providing information to develop complete workplans and reports. These documents continue to be utilized so the investigative phase can be completed in a timely, cost-effective and efficient manner, ensuring the appropriate remedial activities are completed as quickly as possible. The LTCP provides guidance on the extent of cleanup required and the amount of contaminants that may be left in place.

The primary workload for staff is managing/directing the investigation and remediation of Central Valley Water Board lead cases. As of January 2016, there are about 762 open UST cases within the Central Valley Region. Of these, about 600 are under the direct supervision of Central Valley Water Board staff and about 160 are under the direction of LOP staff.

The Central Valley Water Board retains responsibility for protecting water quality regardless of whether the investigation and/or cleanup is being directed by the Central Valley Water Board or another agency. In all circumstances, Central Valley Water Board staff must be aware of the cases the LOPs work on and must ensure that public health and current and future beneficial uses of water are protected before a “no further action” letter is issued by the LOP overseeing the case.

Agency Coordination

Coordination with other agencies is mainly with the LOPs. Central Valley Water Board staff works closely with LOP staff by providing advice, guidance, direction, enforcement when needed, and training roundtables held at the Central Valley Water Board office. In addition, Central Valley Water Board staff meet and confer frequently (multiple times per month) with many of the LOP program staff to discuss program and site-specific issues.

Concerns and Issues

A concern for the UST program similar to the Site Cleanup Program is orphaned sites and recalcitrant responsible parties. Funding assistance for responsible parties to conduct assessment and cleanup can also be an issue. The Underground Storage Tank Cleanup Fund (USTCF) has provided assistance to UST owners for cleanup and closure of UST sites. In 2014 the funding for the USTCF was extended through 2025.

4.1.5 Land Disposal Program (Title 27/Chapter 15)

Regulation of Oil Fields was described in Chapter 4 of the GWQ Strategy (2010) under section 4.1.5 Land Disposal Program. In 2010, compliance and enforcement of oil fields was handled by a small unit consisting of 2-4 staff. In 2013, Governor Brown signed Senate Bill 4, which amended the public resources and water codes relating to oil and gas well stimulation activities. Since 2010, and in response to SB4, the small oil field unit has evolved into a Program and is further described below under a new section, **4.1.7 Oil Field Program**.

4.1.7 Oil Field Program

Oil field processes include crude oil and wastewater that are separated in tanks, with the wastewater being discharged into Class II underground injection wells permitted by California Division of Oil, Gas, and Geothermal Resources (DOGGR), or surface impoundments where percolation and evaporation occur. Surface impoundments (ponds) have been used for disposal in oil fields since at least the 1950's. Generally, they are unlined areas of one to two acres, and contain non-hazardous wastewater co-produced with crude oil. Some wastewater is recycled on crops. Other discharges include drilling waste discharges to sumps and spills.

A U.S. Environmental Protection Agency (USEPA) audit conducted in 2011 and review conducted in 2012 identified deficiencies with the State's administration of the federal Safe Drinking Water Act (SDA) Class II Oil and Gas Underground Injection Control (UIC) Program run by DOGGR that regulates the injection of fluids into aquifers that have received exemptions from the SDA (Aquifer Exemptions). Items of concern included the propriety of some historic Aquifer Exemptions made by the State and the apparent completion of Class II underground injection wells into non-exempt aquifers. USEPA directed the State to address these concerns resulting in increased State Water Board and Regional Water Board focus on oil field operations.

In 2013, Governor Brown signed, Senate Bill 4 (SB4) which amended the public resources and water codes relating to oil and gas well stimulation activities. This legislation sets in place requirements for oil and gas operators, DOGGR, the State Water Board, Regional Water Boards, and other agencies to implement when performing or permitting well stimulation treatments. The State Water Board developed and adopted Model Criteria for Groundwater Monitoring in areas of Oil and Gas Well Stimulation (Model Criteria) as part of the added requirements by Senate Bill 4 (statues of 2013) to the Water Code, section 10783.

The Model Criteria has three main components:

1. Area-Specific required groundwater monitoring near stimulation wells by operators
2. Requirements for sampling and testing
3. Regional scale groundwater monitoring to be implemented by the State Water Board

Central Valley Water Board staff worked closely with the State Water Board during the development of the Model Criteria and continues to coordinate on the compliance and enforcement of the new requirements of SB4.

In 2015, Governor Brown signed Senate Bill 83 (SB83), the Public Resources Trailer Bill. The Trailer Bill has a number of provisions related to Underground Injection Control. Both the State Water Board and DOGGR must concur with proposed Aquifer Exemption applications prior to forwarding them to USEPA for approval. The proposed Aquifer Exemption application must demonstrate that the injected fluids will not affect the quality of water that is, or may reasonably be, used for any beneficial use, and the injected fluid must remain in the aquifer or portion of the aquifer that is exempted. The State Water Board has asked the Central Valley Water Board for its local expertise when evaluating the Aquifer Exemption applications.

Additionally, DOGGR has been requesting review by the State Water Board/Central Valley Water Board of individual injection well projects pursuant to the 1988 MOU between DOGGR, State Water Board, and the Regional Water Boards.

The State Budget for Fiscal Year 2014 provided augmented funding for SB4 related activities. The State Budget for Fiscal Year 2015/2016 provided augmented funding/position authority for oil field work on issues associated with underground injection control and issues associated with the discharge of produced water to land, primarily ponds. There are now more than 19 Central Valley Water Board staff assigned to oil field issues.

Constituents of Concern

Due to the varied types of discharges that are regulated under the Oil and Gas Production Program there aren't just one or two constituents of concern. A partial list of constituents generally associated with the Oil and Gas Production Program includes:

- ✓ salts
- ✓ metals
- ✓ pesticides
- ✓ radionuclides
- ✓ volatile and semi-volatile compounds
- ✓ other oil field chemicals

Current Program Implementation/Staff Activities

Well Stimulation (SB4)/Underground Injection Control (UIC) Unit

A byproduct of the USEPA's audit and review is submittal by oil field operators of new/revised Aquifer Exemption applications (AQEA). SB4/UIC unit staff are, in conjunction with DOGGR the State Water Board, are reviewing these proposed AQEAs to ensure they are protective of beneficial use waters.

Central Valley Water Board staff are also investigating UIC wells that are or may be discharging into non-exempt aquifers. Orders requiring the sampling and assessment of UIC wells in non-exempt aquifers have been issued and evaluation of the submitted data is ongoing. Staff is also pursuing enforcement for those dischargers that have not submitted required information or have submitted incomplete information. Appropriate corrective action will be required for those wells that threaten beneficial use waters.

Newly proposed UIC projects require State Board and Central Valley Water Board staff concurrence that they will not degrade beneficial use waters. Central Valley Water Board staff has been reviewing and will continue to review these projects, as they are received, to ensure they are protective of groundwater quality.

SB4 and SB83 require State Water Board/Regional Water Board approval of groundwater monitoring plans prior to proposed well stimulation activities. Central Valley Water Board staff will continue to review proposed groundwater monitoring work plans to ensure that groundwater near well stimulation projects is appropriately monitored.

Oil Field Land Discharge Unit

During 2014, Central Valley Water Board staff reviewed its Oil and Gas Production Program and specifically oil field discharges to land. During the fall of 2014, knowing that the Central Valley potentially had significant issues associated with the land discharge of produced water (i.e., in surface impoundments or ponds), staff worked with the Governor's office and State Water Board to develop a work plan to address produced water ponds. The Work Plan is available on our website at: www.waterboards.ca.gov/centralvalley/water_issues/oil_fields/index.shtml along with other information related to this program.

Under the work plan, Central Valley Water Board staff in the Oil Field Land Discharge Unit has inventoried and inspected all oil field produced water ponds. Central Valley Water Board staff has issued enforcement orders to active unregulated ponds. Staff is also writing enforcement orders for facilities operating under obsolete WDRs and revising Monitoring and Reporting Programs for those sites with adequate WDRs but inadequate monitoring requirements.

To bring all pond operators under a consistent regulatory scheme, staff is drafting three to four general WDR orders. It is anticipated that these general orders will be presented for Central Valley Water Board consideration in the summer of 2016 and that the process of receiving notices of intent and issuing notices of applicability will be completed by the end of December 2016.

The enforcement orders and general WDRs will include requirements to conduct extensive characterization of wastewater (both flow and quality) and characterization of groundwater beneath each pond with determination of whether groundwater has been degraded (or polluted).

The Oil Field Land Discharge unit also investigates various types of oil field spills and requires appropriate cleanup actions to ensure the protection of groundwater quality.

Agency Coordination

As discussed in the regulatory approach and program implementation above, agency coordination is an important element of the work of the Oil Field Program. Day to day coordination between the State Water Board, Central Valley Water Board, and DOGGR is the most common. Coordination with federal agencies such as USEPA, Bureau of Land Management, U. S. Fish and Wildlife, as well as industry groups is also necessary and important to the success of this program.

Concerns and Issues

The landscape of the Oil and Gas Production Program has been changing rapidly due to increased oversight by the USEPA, new State legislative mandates, and market changes. This looks as though it will continue for the foreseeable future. Thus, the program will need to be flexible in order to address issues as they evolve and maximize the protection of groundwater quality.

Updates to Section 5 Stakeholder Concerns and Issues

During the development of the 2010 GWQ Strategy, multiple stakeholder meetings were held to receive input. The individual comments were reviewed and generally fell into twelve “Issue” categories listed below.

- 5.1 Communication and Coordination between Agencies
- 5.2 Confined Animal Feeding Operations
- 5.3 Education, Outreach, and Research
- 5.4 Groundwater Cleanup Program
- 5.5 Groundwater Databases
- 5.6 Groundwater Monitoring Network
- 5.7 Integrated Regional Water Management Planning
- 5.8 Irrigated Lands Regulatory Program – Groundwater
- 5.9 Land Use Planning
- 5.10 Legacy Pollutants
- 5.11 Water Sustainability
- 5.12 Well Design and Abandonment/Destruction Program

These issues remain relevant for the Central Valley Water Board to address or consider in the implementation of groundwater quality protection programs. Stakeholder comments were solicited in September 2015. Comments received identified concerns that fit under the issues identified above.

The following information identifies general concerns that fall under the previously identified issues.

5.11 Water Sustainability

Since 2010 GWQ Strategy was approved California has experienced a severe drought.

Drought– The condition of drought is not a new issue within California; however, it is a new addition to the GWQ Strategy.

Issue:

On January 17, 2014, California's Governor proclaimed a [Drought State of Emergency](#) and directed state officials to take all necessary actions to prepare for drought conditions. On March 1, 2014, the Governor signed bipartisan drought relief legislation, Senate Bill (SB) 103 and 104, modifying the Budget Act of 2013 (Stats. 2013, ch. 20 and 354) to provide additional funds for drought relief. (Stats. 2014, ch. 2 and 3, respectively).

On April 25, 2014, the Governor proclaimed a continued State of Emergency due to severe drought conditions and directed the State Water Board to "adopt statewide general waste discharge requirements to facilitate the use of treated wastewater that meets standards set by the California Department of Public Health (CDPH) in order to reduce demand on potable water supplies."

California experiences frequent drought conditions. These emergency actions follow a similar Declaration of Statewide Drought in effect from 2008 through 2011 ([Executive Order S-06-08](#)) and Drought Declaration State of Emergency in effect from 2009 through 2011 ([Executive Order S-11-09](#)). Drought conditions in California also persisted from 1987 through 1992.

Regulatory Approach

A description of the Central Valley Water Board's regulatory approach is best done under the specific regulatory programs.

- Central Valley Water Board Land Disposal Program will continue to work with State Water Board on drought related water quality issues as it is a statewide need. Proposed Water Reclamation Requirement for Recycled Water Use (General Order) is, available to replace 2014-0090-DWQ General Waste Discharge Requirements for Recycled Water Use. The requirements are proposed by the State Water Board, Division of Drinking Water. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape irrigation, crop irrigation, dust control, industrial/commercial cooling, decorative fountains, etc. Potable reuse activities or activities to replenish groundwater would not be authorized under this General Order. The proposed requirements should expedite the processing of requests to recycle water. The GWQ Strategy update and future work on this issue will be included as a new action (**see Section 6, Action #6.13**).
- The need for long range planning with respects to the occurrence of drought is being included in the development of the Salt and Nitrate Management Plan for the Central Valley Region. Multiple considerations to be explored in developing a drought policy include impacts from conservation measures, recycling, extended dry periods, and source waters. More on developing a Salt and Nitrate Management Plan for the Central Valley Region, **Action #6.4.1 Development of a Salt and Nitrate Management Plan for the Central Valley Region** can be found at <http://www.cvsalinity.org/>.
- Through oversight of remedial actions the Site Cleanup Program will encourage in-situ cleanup methods when appropriate to improve water quality and protect water quantity. This may reduce the amount of groundwater lost to Pump & Treat cleanup methods that

implement remedial actions. This will occur as a routine part of work under the Site Cleanup Program (see subsection 4.1.3.)

- There is significant interest in groundwater recharge projects on agricultural lands. Under the ILRP the Central Valley Water board will provide regulatory oversight of groundwater recharge projects and ensure protection of groundwater quality while balancing the need for increased groundwater storage. More on this can be found in **Section 6, Action #6.14 Groundwater Recharge Utilizing Agricultural Fields.**

Updates to Section 6 Roadmap

Over the last five years of communicating and implementing work identified in Section 6 of the GWQ Strategy staff have found some of the section numbering and nomenclature awkward. In this Addendum we will no longer use the term “Future Actions”. To communicate actions to address the concerns and issues raised in sections 4 and 5 of the GWQ Strategy we will now identify them as “actions”. Those actions identified in the 2010 GWQ Strategy will keep the existing section numbering. Moving forward actions will be numbered sequentially beginning with 6.7.

6.1 Future Actions

For this and future updates the term “future actions” will be replaced with “actions”. These will be any actions that can be taken now or in the future to protect groundwater quality, within the Central Valley Water Board’s authority, based on prioritization, and resources identified in workplans.

6.4 Region-wide Overarching Actions

This addendum will no longer use this section number to identify actions that are program specific. Any new actions will be numbered sequentially beginning with 6.7. Within the description of the action it will be noted whether it is an action that has overarching reach across the regions programs.

6.5 Program Specific Actions

This addendum will no longer use this section number to identify actions that have region-wide impacts. Any new actions will be numbered sequentially beginning with 6.7. If an action is specific to a Central Valley Water Board program it will be noted within the description not as part of the numbering system.

Actions to Protect Groundwater Quality

As noted in sections 6.1 and 6.4 above this section will identify actions that can be taken to protect groundwater quality. A description of each action will be included along with the goal, objective, concern(s) addressed, background, and brief discussion of resources to implement the action. More detailed workplan(s) for implementation of the actions will be completed based on prioritization of actions and Central Valley Water Board direction.

Actions described in this addendum will begin with 6.7 and will be numbered sequentially from this point forward for ease of communication in workplan(s), status reports, and future updates to the GWQ Strategy.

Following is the criteria used in the 2010 GWQ Strategy to prioritize the actions to protect groundwater quality. These criteria have been used to prioritize the Addendum 2015 Actions in Table 2 below:

- Protection and Enhancement of Beneficial Uses³: The activity will result in the **significant positive progress** toward protection of beneficial uses.
- Anti-degradation: The **activity has been evaluated** against, and effectively implements, the anti-degradation policy (Resolution 68-16).
- Timely: The activity is ripe for prompt action because **sufficient information exists** to support taking the action.
- Complements Other Activities: The activity will **complement or add to existing efforts** by the Water Boards and other organizations.
- Existing Authority: The activity can be accomplished with **existing legal authorities, required by statute, policy, or direction by the Central Valley Water Board**
- Existing Commitment: The activity constitutes an existing commitment (**funding exists, staff resources available**) by the Central Valley Water Board.

Actions will be evaluated against the above listed criteria to determine whether that action should be prioritized as high, medium, or low for implementation.

High	Meets 5-6 Criteria
Medium	Meets 3-4 Criteria
Low	Meets 1-2 Criteria

³ State law defines beneficial uses of California's waters that may be protected against quality degradation to include (and not be limited to) "...domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050(f)).

Table 2 Addendum 2015 Actions

Action #	2015 Actions	Protect Beneficial	Anti-Degradation	Timely	Complements other	Existing Authority	Existing Commitments	Priority
6.7	Coordination with Prop 1 Funding Agencies	X		X	X			M
6.8	Lean 6-Sigma		X	X	X	X		M
6.9	SB4/Underground Injection Control	X	X	X		X	X	H
6.10	Sustainable Groundwater Management Act (SGMA)	X		X	X			M
6.11	Antidegradation Policy Application to Groundwater	X	X	X	X	X	X	H
6.12	Addressing Hexavalent Chromium	X	X	X	X	X	X	H
6.13	Regulation of Recycled Water in a Drought Prone Region	X	X	X	X	X	X	H
6.14	Groundwater Recharge Utilizing Agricultural Fields	X	X	X	X			M
6.15	OWTS Policy Implementation – LAMP reviews	X	X	X	X	X	X	H

6.7 Coordination with Prop 1 Funding Agencies

Goal: Provide Central Valley Water Board resources to coordinate with Prop 1 Funding Agencies to promote groundwater quality protection projects.

Action: Through inter agency coordination work cooperatively with Prop 1 Funding Agencies to provide input on grant program guidelines, review proposals, and assist in outreach.

Objective: If requested, provide staff to participate in grant proposal reviews for Prop 1 Funding applicable to groundwater quality protection.

Concern(s) Addressed: The concern addressed will be dependent on the potential grant project and funding source. There is a potential for grant projects to address any of the concerns identified in section 5.

Background: The Water Quality, Supply, and Infrastructure Improvement Act of 2014 known as Prop 1 authorizes \$7.545 billion in general obligation bonds to fund ecosystems and watershed protection and restoration, water supply infrastructure projects, including surface and

groundwater storage, and drinking water protection. Water quality can be an important component of many different types of projects that may qualify for this funding source. Coordination with stakeholders and agencies may occur across most Central Valley Water Board programs.

Resources: No specific funding from Prop 1 is allocated to the Central Valley Water Board. Staff working with Integrated Regional Water Management Groups, CV-SALTS, TMDL implementation, NPS program, and other stakeholders will coordinate with agencies responsible for administering these bond funds, including the State Water Board and Department of Water Resources. Coordination will include workshop involvement, disseminating Prop 1 grant funding information to stakeholders, and assisting with grant application reviews if requested.

6.8 Lean 6-Sigma

Goal: Implement the Lean 6-Sigma methodology to reduce time to process WDR permits.

Action: Identify and eliminate waste in a process (i.e. Lean) and improve quality and reduce defects in a process (i.e., 6-Sigma).

Objective: Reduce the amount of time to process permit applications without compromising water quality.

Concern(s) Addressed: 5.1 Communication, 5.3 Education & Outreach, 5.5 Groundwater Database, 5.6 Groundwater Monitoring Network, 5.10 Legacy Pollutants

Background: The Governor's Office of Business and Economic Development partnered with the Government Operations Agency to offer Lean 6-Sigma training to state agencies to specifically address process-based issues within state departments. The Central Valley Water Board was one of 15 state departments chosen to participate in training held during 2015 and our project is titled, "Reduction in Permit Processing Time for Non-15 Waste Discharge Requirements." An added benefit of this project is reducing backlog of unprocessed Reports of Waste Discharges which was identified as action #6.5.4 (c) to develop methods to reduce backlog of facilities regulated in the GWQ Strategy.

The Project team was made up of staff level WDR permit writers from Fresno and Sacramento, senior of WDR unit in Redding, senior compliance and enforcement from Sacramento, attorneys from Office of Chief Counsel, and Assistant Executive Officer as Executive Sponsor and Project Champion

Major component of Lean 6-Sigma projects is that all decisions are made based on proper analysis of data – not opinions, experiences, seniority, etc.

Phases of the Project:

Define: Define and scope the problem

Measure: Gather process inputs and determine baseline capability

Analyze: Analyze data to determine the critical inputs of the process

Improve: Identify and implement fixes for the problem

Control: Implement controls to assure the improvement remains permanent

The Project is now in the control phase for processing WDRs.

Resources: The staff time devoted to the initial Lean 6-Sigma project for the WDR program was part of their regular program funding. Further implementation of the Lean 6-Sigma process is anticipated to reduce the amount of time required for the permitting process therefore; no new funding will be required.

6.9 SB4/Underground Injection Control

Goal: Implement a regulatory program through a newly formed SB4/UIC program unit.

Action: Identify core activities for new SB4/Underground Injection Control (UIC) program in coordination with the State Water Board.

Objective: In coordination with the State Water Board review new/revised Aquifer Exemption applications to ensure they are protective of water quality. Review groundwater monitoring programs for compliance of well stimulation activities required under SB4.

Concern(s) Addressed: 5.1 Communication and Coordination between Agencies, 5.4 Groundwater Cleanup Program, 5.5 Groundwater Database, 5.10 Legacy Pollutants

Background: The Central Valley Water Board has formed a new unit that will be addressing SB4 and UIC issues. The original Oil Field Unit will concentrate on produced water discharges as described in the new section 4.1.7 Oil Field Programs.

Resources: The Fiscal Year 15/16 State Budget included 5 new positions for the Central Valley Water Board specifically for SB4/UIC program implementation.

6.10 Sustainable Groundwater Management Act (SGMA)

Goal: Identify water quality as a consideration while remaining informed and working cooperatively with implementing agencies on the development of SGMA regulations.

Action: The Central Valley Water Board will continue to coordinate with DWR and the State Water Board to ensure the SGM Program requirements are considered implementation of groundwater quality protection programs within the Central Valley Region.

Objective: Ensure water quality is a consideration within the SGMA regulations and implementation.

Concern(s) Addressed: 5.1 Communication and Coordination between Agencies, 5.7 Integrated Regional Water Management Planning, 5.9 Land Use Planning, 5.11 Water Sustainability

Background: See Section 3.2.6

Resources: Approximately 0.05 PY would be needed to maintain minimum level of coordination with DWR and the State Water Board. Coordination will occur primarily through Basin Planning Program staff but may expand to other programs in the future.

6.11 Antidegradation Policy Application to Groundwater

Goal: Improve the usefulness of the Antidegradation Policy's application to groundwater across all Central Valley Water Board programs.

Action: Provide support to the State Water Board's Antidegradation Policy Project by participating as an executive sponsor.

Objective: Utilize pending policy direction to provide guidance on the development of white papers on technical issues related to groundwater monitoring for diffuse Non-Point Source types of discharges.

Concern(s) Addressed: 5.5 Groundwater Databases, 5.6 Groundwater Monitoring Network.

Background: The State Water Board has made it a priority to conduct a review of [Resolution 68-16](#), the "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Antidegradation Policy) and is considering whether to revise the policy, adopt an additional policy, and/or issue guidance regarding implementation of the policy. The purpose of this project is to improve the usefulness of the Antidegradation Policy as a tool for making informed decisions regarding discharges that affect groundwater.

Resources: The Central Valley Water Board has committed the time of Assistant Executive Officer, Clay Rodgers to serve as an executive sponsor to this State Water Board effort.

6.12 Addressing Hexavalent Chromium

Goal: Protect groundwater quality through cleanup programs and continue to educate public on Cr(VI) concerns while continuing to evaluate treatment options, and occurrence of naturally occurring and anthropogenic sources.

Action: Continue to protect beneficial uses through application of the Basin Plan objectives while also working to identify funding sources to assist water purveyors dealing with the cost of chromium treatment.

Objective: Actively coordinate with the Division of Drinking Water to identify drinking water supplies that have been impacted by human activity versus naturally occurring chromium.

Concern(s) Addressed: 5.1 Communication and Coordination between Agencies, 5.3 Education, Outreach, and Research, 5.4 Groundwater Cleanup Program, 5.10 Legacy Pollutants

Background: In 2014, California Department of Public Health established the MCL for Cr(VI) at 10 parts per billion, making California the first state in the nation to have an MCL for Cr(VI). Naturally occurring chromium is associated with serpentinite-containing rocks found in both the Coast Ranges and the Sierra Nevada ranges that may contribute to detections of Cr(VI). Anthropogenic (human caused) sources occur as a contaminant in the environment from the discharges of dye and paint pigments, wood preservatives, chrome-plating wastes, and leaching from hazardous waste sites.

Resources: No new resources are anticipated to address this issue.

6.13 Regulation of Recycled Water in a Drought Prone Region

Goal: Allow for expanded water recycling projects while continuing to protect future and maintain current groundwater quality.

Action: Utilize the proposed Water Reclamation Requirements for Recycled Water Use (general order) when it becomes available.

Objective: Expedite processing of request to recycle water.

Concern(s) Addressed: 5.9 Land use planning, 5.10 Legacy Pollutants, 5.11 Water Sustainability

Background: Proposed Water Reclamation Requirements for Recycled Water Use (General Order) will soon be available to replace 2014-0090-DWQ General Water Discharge Requirements for Recycled Water Use. This general order will only apply to treated municipal wastewater for non-potable uses. Potable reuse activities would not be authorized under this General Order.

Resources: No new resources are anticipated to address this issue.

6.14 Groundwater Recharge Utilizing Agricultural Fields

Goal: Allow for groundwater recharge opportunities while continuing to protect groundwater quality.

Action: Review groundwater recharge projects on ILRP sites; coordinate with project proponents and funders to ensure appropriate water quality monitoring is conducted for the pilot projects to assess potential water quality impacts; require practices to ensure protection of groundwater quality.

Objective: Provide regulatory oversight of groundwater recharge projects and ensure protection of groundwater quality.

Concern(s) Addressed: 5.8 Irrigated Lands Regulatory Program – Groundwater, 5.9 Land use planning, 5.10 Legacy Pollutants, 5.11 Water Sustainability

Background: There is significant interest in groundwater recharge projects on agricultural lands. University of California at Davis has started implementing pilot projects on almond and alfalfa sites to evaluate potential impacts to crops; at the same time they are conducting soil sampling to evaluate potential movement of salts and nitrogen pass the top 12 feet of the soil column. Other entities are also interested in groundwater recharge (Sustainable Conservation and Fresno State), and State Board will be providing Prop 1 resources to fund future efforts. We recently received a CEQA document from the Kings River Conservation District regarding an agricultural recharge project.

While we support recharging the depleted groundwater resources, groundwater recharge projects must be conducted in a manner that is protective of groundwater quality in the long term.

Resources: ILRP staff resources will be pulled from surface water and other groundwater activities to review groundwater recharge projects to ensure appropriate practices are implemented and adequate monitoring is required.

6.15 Onsite Wastewater Treatment Systems (OWTS) Policy Implementation – Local Agency Management Plans

Goal: Meet the OWTS Policy requirement of reviewing all Local Agency Management Plans (LAMPs) by May 2017.

Action: Review LAMPs utilizing a completeness checklist developed in cooperation with California Conference of Directors of Environmental Health (CCDEH)

Objective: Allow for the continued use of Onsite Wastewater Treatment Systems, while protecting water quality and public health, in the most effective and practicable manner possible.

Concern(s) Addressed: 5.1 Communication and Coordination between Agencies, 5.3 Education, Outreach, and Research, 5.9 Land use planning, 5.10 Legacy Pollutants

Background: AB 885, creating Section 13291 et. seq. of the California Water Code, legislated statewide minimum 'regulations or standards' (regulations) for onsite sewage treatment systems (including septic systems). AB 885 required the State Water Board to adopt new regulations for discharges from onsite wastewater treatment systems. The State Water Board Onsite Wastewater Treatment Systems (OWTS) Policy became effective 13 May 2013 and was subsequently adopted into the Central Valley Water Board's Basin Plans.

The implementation of the OWTS Policy gives Local Agencies the option to develop and implement performance-based requirements for new and replacement OWTS in LAMPs. Central Valley Water Board staff expects to receive 30 draft LAMPs which will need to be reviewed and approved by May 2017.

Resources: Currently one staff is assigned to complete these reviews. As this is a new program adjustments may need to be made to assist staff with this workload.