

3.11 Ground Water Program Activities ('Regionwide')

The Region includes over 1,581 square miles of ground water basins. Ground waters in the Region supply high quality drinking water and irrigation water, as well as industrial service supply, wildlife habitat supply and aquaculture supply watershed. Ground waters in the Region also provide a source of freshwater for the replenishment of inland lakes and streams of varying salinity.

Historic and ongoing agricultural, urban, and industrial activities can, and have, degraded and contaminated the quality of ground water. Discharges to ground water from these activities include: underground and aboveground tanks and sump leaks, agricultural and industrial chemical spills, landfill leachate, septic system failures, and chemical seepage via shallow drainage wells and abandoned wells.

Minor to severe ground water overdraft has occurred in portions of the Region. Such overdraft can impact beneficial uses of associated surface waters such as wetlands and springs, can concentrate trace chemicals, including naturally occurring salts and contaminants resulting from human activities. Overdraft can lead to land subsidence and surface soil cracking. Some soil types, once compacted, can never again hold as much water upon rewatering of the aquifer. Increased ground water pumping in overdrafted aquifers can draw pollutants towards wells. Imported water used for ground water recharge, if it is of naturally lower quality than local ground waters, is considered as a discharge. Discharges from some types of construction projects (e.g., placement of fill in wetlands) can reduce ground water recharge.

As impacts on ground water quality from these discharges are often long-term, difficult and costly to remediate, prompt and expedient efforts to clean up and contain the source areas must be undertaken. Activities that may potentially affect ground waters must be managed to ensure that ground water quality is protected. Permitted discharges to land (e.g., landfills, sewage ponds) are closely regulated under existing laws and regulations to maintain and to protect ground water quality for beneficial uses. Another category of discharges to land is individual waste disposal systems (e.g., septic systems). In most instances, the RWQCB has waived its independent regulation of septic systems provided that local governments regulate them pursuant to RWQCB guidelines.

Discharges of hazardous and non-hazardous waste, and the waste management units at which the wastes are discharged (e.g., landfills, surface impoundments) are regulated by the RWQCB through waste discharge requirements to properly contain the wastes, and to ensure that effective monitoring is undertaken to protect water resources of the Region. Some of these waste discharges are also concurrently regulated by other State and local agencies. In addition to implementing local ordinances, local agencies implement the State's solid waste management programs with the concurrence of the California Integrated Waste Management Board (CIWMB). The CIWMB also has direct responsibility for review and approval of plans for closure and post-closure maintenance of solid waste landfills. The Department of Toxic Substances Control (DTSC) issues permits for all hazardous waste management, treatment, storage, and disposal facilities. The SWRCB, RWQCB, CIWMB and DTSC coordinate on concurrent regulation of these discharges.

Hazardous and non-hazardous wastes are regulated through California Code of Regulations, Title 23, Chapter 15 (see Section 3.8 of this Chapter), Resource Conservation and Recovery Act, Toxic Pits Cleanup Act; and Solid Waste Assessment Tests. Other RWQCB programs for ground water protection include Underground Storage Tanks (see Section 3.16), Aboveground Storage Tanks (see Section 3.13), Spills, Leaks, Investigation, and Cleanup (SLIC) (see Section 3.15), Department of Defense Cleanups (see Section 3.14), and Federal Superfund Program.

Ongoing and Planned Tasks for FY 02/03 to FY 06/07 (task cost estimates will be included in a future WMI Chapter update.)

- Continue to coordinate on concurrent regulation of wastes with potential impacts to ground water with the SWRCB, CIWMB and DTSC.
- Continue to coordinate with CIWMB and local agencies on Chapter 15 tasks.

- Continue Underground Storage Tanks program tasks with emphasis on MTBE releases in areas, which recharge aquifers used for municipal supply, consistent with Governor's Executive Order D-5-99, and according to the Region's priority system for directing resources.
- Continue Aboveground Storage Tanks program tasks
- Continue Spills, Leaks, Investigation, and Cleanup program tasks
- Continue Department of Defense program tasks
- Develop ground water objectives for individual ground water basins (only a limited number of numerical objectives for ground water in the Region have been completed)
- Implement SWRCB Resolutions 68-16 and 92-49
- For ground water overdraft and related water quality problems, the RWQCB will consider issuance of waste discharge requirements for ground water recharge with imported water, which is of lower quality than local ground water, and for projects involving the discharge of waste, which would interfere with ground water recharge. It will consider monitoring ground water extraction in contaminated basins to ensure that pumping patterns do not cause the migration of pollutants within the basins.
- Encourage the use of BMPs to minimize potential water quality impacts from agricultural practices such as irrigation, pesticide and fertilizer use, and confined animal operations. Coordinate with U.S. Natural Resources Conservation Service, Resource Conservation Districts, and U.C. Cooperative Extension Farm Advisors to promote BMPs.
- Develop a basic ground water database for the Region with information on hydrogeology, soil characteristics, ground water location and level, ground water quality, ground water movement, water well location and construction, ground water extractions, land use, waste discharges, potential and existing pollution sources, and extent of contamination.
- Conduct ground water monitoring to determine to what extent ground water beneficial uses and water quality are threatened, and to evaluate the effectiveness of any actions to protect water quality.
- In areas of high septic system density, monitor nitrate and chloride levels to detect any degradation in water quality.
- Encourage the formation of local ground water management districts to regulate ground water recharge and irrigation practices.
- Encourage the use of BMPs to minimize water use for agricultural, landscape and turf irrigation, and encourage the use of reclaimed water wherever feasible without impacting beneficial uses.
- Consider holding public fact finding hearings on specific ground water quality/quantity problems (the hearing could result in recommendations for SWRCB action.
- Complete tasks as required under the Source Water Assessment Program (SWAP)
- More comprehensive review of discharge and clean-up activities in areas identified as recharge areas.

Ambient Ground Water Monitoring Needs

See *Section 3.3 Monitoring* for description of ambient ground water tasks

Mojave -- The RWQCB staff have started sampling with much stakeholder participation. Funds are needed to continue.

Antelope Valley -- This area is the site of numerous ground water recharge projects. It is also subject to degradation from agricultural activities.

Owens Valley -- The RWQCB will attempt to coordinate chemical sampling with the Inyo County Water Department and the Los Angeles Department of Water and Power.

Twin Lakes -- Sampling wells were installed several years ago to monitor possible ground water problems from septic systems. These wells have not been sampled for several years. Current sampling could provide ambient ground water information for possible use in the development of TMDL for Bridgeport Reservoir.

Lake Tahoe Ground Water Basin -- This is a critical vulnerable area where ambient ground water monitoring can supplement existing monitoring well information.

- Many gas stations are located within capture zones of municipal and private drinking water wells. These stations have had spills or leaks and have contaminated the ground water near a well.
- The RWQCB has been investigating the source of PCE ground water contamination for many years with little success. There are a number of existing monitoring wells associated with UST releases that could be sampled and analyzed for PCE at minimal additional costs.
- Analyses of ground water from the existing monitoring well network for nutrients, specifically phosphorus and nitrogen (nitrate) would be extremely useful for the Lake Tahoe clarity model and the TMDL for Lake Tahoe. Very little data on nutrients in ground water has been collected. Since many wells exist, data could be collected without installing any more wells.