

**PESTICIDE CONTAMINATION PREVENTION ACT
ANNUAL REPORT TO THE LEGISLATURE
STATE WATER RESOURCES CONTROL BOARD
November 2007**

Actions taken by the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Boards) to prevent pesticides from migrating to groundwater of the State are as follows:

A. State Water Board

State Water Board staff participated in the following activities:

- Regularly attended meetings sponsored by the Department of Pesticide Regulation (DPR), including the interagency Pesticide Registration and Evaluation Committee (PREC) and Pest Management Advisory Committee (PMAC).
- Participated in ongoing consultations with DPR staff, University of California (UC) scientists, and pesticide manufacturers to design monitoring studies and Best Management Practices (BMPs).
- Participated in discussions with U.S. Geological Survey (USGS) scientists on studies dealing with pesticides and water quality.
- Reviewed, on an ongoing basis, DPR Notices of "Materials Entering Evaluation" and advised DPR on potential water quality impacts of pesticide registration and use decisions.
- Reviewed and commented on DPR's proposed studies on pesticide and water quality pursuant to the Management Agency Agreement (MAA) with DPR.
- In coordination with the USGS and Lawrence Livermore National Laboratory (LLNL), the State Water Board is implementing the Groundwater Ambient Monitoring and Assessment Program (GAMA). The GAMA Program has sampled over 1,400 public water supply wells for various chemicals and contaminants, including pesticides, herbicides and their degradates. The water quality results for the San Diego, North San Francisco, North San Joaquin Valley and Monterey Bay-Salinas Valley Basins - GAMA Study Unit are summarized in Table 12.
- The State Water Board sampled over 182 domestic wells in Tulare County for various chemicals and contaminants, including pesticides, herbicides and their degradates. The results are summarized in Table 13.

B. Regional Water Boards

Actions taken by the Regional Water Boards are identified in Tables 1 – 11.

Table 1. Actions taken by the Regional Water Quality Control Board, North Coast (Region 1), in FY 2006-2007. Region 1 did not generate any new pesticide data this year from any discharger.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Humboldt	U.S. Forest Service Nursery, McKinleyville	Chlorothalonil	USFS monitoring and assessment to prevent discharges to surface water and ground water with RWQCB support.
	Sierra Pacific, Arcata	Pentachlorophenol, Tetrachlorophenol,	Ongoing contamination assessment and cleanup.
	Carlotta Lumber Company	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Beaver Lumber Company, Arcata	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Sun Valley Bulb Farms	Chlorothalonil, Dithiocarbamate	Ongoing monitoring and assessment to prevent discharges to surface water and ground water under RWQCB direction.
	Pacific Lumber Co., Carlotta	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment to prevent discharges to surface water
	Schmidbauer, Arcata	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Schmidbauer, Eureka	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Simpson Plywood Mill (Old), Eureka	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Simpson Mill, Samoa	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
Siskiyou	Hi-Ridge Lumber Company	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Pine Mountain Lumber Company	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	Morgan Door, Roseburg	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.
	J.H. Baxter	Pentachlorophenol, Tetrachlorophenol	Ongoing contamination assessment and cleanup.

Table 2. Actions taken by the Regional Water Quality Control Board, San Francisco Bay (Region 2) in FY 2006-2007, and include updated pesticide data for Alameda County.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Alameda	AmChem/ Henkel Surface Technologies	Chlordane, Heptachlor	RWQCB oversight. Impacted soil removed in 2006 and 2007. Groundwater no longer impacted, but may require long-term monitoring after removal of cap/redevelopment.
	Jones-Hamilton	Pentachlorophenol (PCP), Tetrachlorophenol (TCP)	RWQCB Final Site Cleanup Requirements Order No. 2001-0054 adopted specified time schedule for final remedial actions. Ongoing groundwater monitoring for VOCs, PCP & TCP.
	Port of Oakland (Embarcadero Cove)	Chlordane, Pentachlorophenol, DDT, Endosulfan, 2,3,7,8-TCDD, DDD	Department of Toxic Substances Control (DTSC) has lead and has approved a Remedial Action Plan including continuous ground water monitoring.
	Peerless Southern Pacific Railroad	Pentachlorophenol	City of Berkeley Health Department has lead. Additional soil and ground water investigations required.
	FMC, Newark	EDB	RWQCB Final Site Cleanup Requirements Order No. 2002-0060 adopted. Ongoing groundwater monitoring for VOCs, specified time schedule for final cleanup actions. Ground water cleanup underway.
Contra Costa	Chevron	Endrin, Lindane, Dieldrin, DDT, Arsenic	Submitted closure plan for Class I impoundment. A cut-off wall with a ground water extraction trench around the impoundment has been constructed.
	Levin Metals	Aldrin, 4,4'-DDD, 4,4'-DDE, o,p,-DDT, Dieldrin, BHC	U.S. Environmental Protection Agency (U.S. EPA) lead on-site cleanup. Awaiting report of completion for remedial dredging project.
	FMC, Richmond	DDT, DDD, DDE, Dieldrin, Chlordane, Tedion, Endosulfan, Ethion, Carbophenothion, Heptachlor	California Department of Public Health (DPH) lead on-site cleanup. Cleanup completed. Monitor to assure remaining pollutants do not migrate.
Marin	Former Sonoma Mosquito Abatement District, San Rafael	DDD, DDE, DDT, Dieldrin	DTSC is lead agency. Some soil removal has already taken place (approximately 3000 yd ³ in 1992). Old monitoring wells destroyed. Seven new wells were installed in 1996. DTSC has mailed out draft deed restriction and draft O&M Agreement for site.
Solano	Travis Air Force Base	Aldrin, Heptachlor, Alpha-Chlordane, Heptachlor Epoxide	U.S. EPA leads site cleanup. Groundwater extraction, treatment and monitoring have been ongoing since 2001.

Table 3. Actions taken by the Central Coast Regional Water Quality Control Board (Region 3) in FY 2006-2007

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Monterey	Monterey Soil Service, King City	EDB and DBCP	Monitored natural attenuation is used at the site for low-level residual concentrations of EDB and DBCP in groundwater. Groundwater monitoring activities continued throughout FY 2006/2007.
Santa Clara	Castle-Veg-Tech, Morgan Hill	Toxaphene, Endrin, Lindane, Endosulfan	The Dischargers are currently out of compliance. The Central Coast Water Board initiated enforcement in FY 2006/2007. Enforcement is expected to continue into FY 2007/2008.
Santa Cruz	WFS-Greengro, Watsonville	1,2-DCP	Monitored natural attenuation is used for low level residual 1,2-DCP in groundwater. Groundwater monitoring activities continued in FY 2006/2007.

Table 4. Actions taken by the Regional Water Quality Control Board, Los Angeles (Region 4), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
No pesticides were detected at any landfill in the Los Angeles Region that is required to submit ground water monitoring reports to the Regional Board.			

Table 5. Actions taken by the Regional Water Quality Control Board, Central Valley (Region 5, Sacramento), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Colusa	Moore Aviation	Atrazine	Plume contracted to less than 100 square feet. Soils have been remediated. Site was granted no further action in 2005.
Merced	Merced Municipal Airport	Alachlor, Captan, Carbophenothion (trithion), DDT (total) Dicofol (Kethane), Dieldrin, Endosulfan I, II, Endosulfan sulfate, Endrin, Endrin aldehyde, Endrin ketone, Heptachlor epoxide, Methoxychlor, Toxaphene,	Health Assessment completed. Feasibility study submitted. Groundwater treatment using HRC underway.
	J.R. Simplot, Winton	1,2-DCP, 1,2,3-TCP	Organo-chlorine contaminated soil removed, soil vapor extraction removed some volatile compounds. Pilot studies using HRC and groundwater extraction/treatment system using methanol was conducted in 2007 to treat VOCs.
	Western Farm Service, Merced	1,2-DCP, DBCP, dinoseb, dalapon, DDT, dieldrin, toxaphene, 2,4-D, chlordane	Organo-chlorine contaminated soils were removed. A pilot study for in-situ remediation of groundwater using Hydrogen Releasing Compound (HRC) shows promise for the technology.
Sacramento	Sacramento Army Depot	Diazinon, Dursban	Assessment report requested. Federal Superfund work in progress. Cleanup of pesticides completed.
	Natomas Air Park	Dicofol, DDE, DDT, Endosulfan, Toxaphene, Dieldrin Endrin	Contaminated soils were excavated and disposed of off-site. Groundwater investigation is underway
	Western Farm Service, Walnut Grove	Aldrin, beta-BHC, gamma-BHC, DDD, DDE, dieldrin, heptachlor epoxide, endosulfan, disultoton, 1,2-DCP	Investigation continuing. Pesticides are associated with a drainage collection area.
San Joaquin	Occidental Chemical, Lathrop	EDB, DBCP, Sulfolane	Groundwater cleanup underway pursuant to stipulation and judgment approving settlement (1981). Currently implementing groundwater treatment system optimization, monitoring and reporting program.
	Continental Grain Company	Carbon Tetrachloride, chloroform, 1,2-DCP, 1,2-DCA, tetrachloroethane	A pilot study evaluating zero-valent iron for in-situ treatment of groundwater was successful. Groundwater recirculation is proposed to accelerate treatment.
	John Taylor Fertilizers, Stockton	Dinoseb, 1,2,3-TCP, 1,2-DCP, bromacil	Soil investigation did not identify on-site source areas for these groundwater contaminants. Investigation underway

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	Defense Depot, Tracy	Dieldrin, Simazine	A Record of Decision (ROD) was finalized in February 1998; it includes soil cleanup levels for simazine and dieldrin, and a ground water cleanup level for dieldrin. Pump and treat has been implemented for main dieldrin plume. Currently, investigating small dieldrin plume in NW corner of Depot that may also require remedial actions.
San Joaquin	Sharpe Army Depot, Stockton	Bromacil	Limited monitoring continues. Remedial actions may not be warranted.
	U.S. Navy Computer and telecommunications Station, San Diego Detachment	DDD, DDE, DDT, Heptachlor Epoxide, alachlor	Assessment ongoing. Soil removal actions have occurred and more are planned. Groundwater assessment underway.
	Western Farm Service, Stockton (former Pure Gro/Brea)	1,2-DCP, Chloroform, Bromoform, 1,1-DCA, Dibromochloromethane, bromochloromethane, bromodichloromethane	Some soil was removed; two source soil areas are capped. Semi-annual groundwater monitoring and long-term cap maintenance is continuing. Health risk assessment is complete. A pilot study evaluating zero-valent iron for in-situ groundwater treatment is underway in 2006 and 2007.
	Former Oxychem/Simplot/PureGro, Stockton	1,2-DCP, Chlorobenzene, 1,1,2-TCA, Mevinphos, Fensulfothion, Dinoseb, Dicamba, 2,4,5-T, Atrazine, Monuron, Carbaryl, Carbofuran, Protham, Diuron, Propoxur, 2,4-DB, bromacil, chloromethane, tebuthiuron, simazine, methiocarb, MCP, fenuron, chloroform, dichloroprop, EDB.	Primary soil source area remediated with thermal destruction. Phytoremediation in progress to treat trace constituents in soil and nitrate in groundwater
	Cal Farm Supply	b-BHC, nitrate	Soils were remediated. Nitrate uptake by safflower cropping ongoing.
	Western Farm Service, Vernalis	DBCP, EDB, diuron, methiocarb, diazinon, aldrin, 1,2-DCP	Pilot project using hydrogen release compound for in-situ remediation successful and expanded in 2007.
	Solano	John Taylor Fertilizer, Dixon	DDT, tebuthiuron
TSI, Dixon		DDT, DDE, 1,2-DCP, 1,2,3-TCP, endrin, endosulfan, methoxychlor, toxaphene, trifluralin	Some contaminated soil was removed. Crop uptake is remediating nitrate and ammonium off-site. VOCs are being removed from the soil column with soil vapor extraction.
Stanislaus	Chemurgic Agricultural Chemicals	BHC	Excavation of areas with elevated BHC in soil completed by December 1995. Groundwater remediation by extraction and carbon filtration with monitoring ongoing.
	Geer Road Landfill	1,1-DCA, 1,1,1-TCA, TCE, Chloridazon, Freons	Ground water cleanup underway.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	Western Farm Service, Modesto	DBCP, EDB, 1,2-DCP, chlorpyrifos, DDT, disulfoton, 2,4,5-TP	Remedial work to excavate areas with elevated pollutant concentrations in soil completed. An engineered cap is being installed over a majority of the site.
	Shell Agricultural Research Facility	Cyanazine, Atrazine, Chloroform, DBCP,	Groundwater being treated with carbon absorption for organic compounds. Soil has been remediated.
Sutter	Bowles Flying Service	2,4-D, Thiobencarb, Diuron, Metalaxyl, Molinate, Simazine	Cease and Desist Order issued under the TPCA program. On DTSC's list as needing a Preliminary Endangerment Assessment. Monitoring wells installed.
	PureGro, Robbins	Alachlor, aldrin, dicofol, monuron, diphenamid, 1,2-DCA, 1,2-DCP	MRP issued for quarterly ground water monitoring. Trees were planted on the site to phytoremediate the groundwater. Results are inconclusive at this point
	John Taylor Fertilizers, Yuba City	1,2-DCP, 1,2,3-TCP, 1,2-DCB, chlorobenzene, DBCP	Soil excavation completed, in-situ groundwater remediation using hydrogen-releasing compound is underway.
Yolo	Frontier Fertilizer Company, Davis	EDB, DCP, DBCP, Carbon tetrachloride	DTSC is lead agency. Thermal treatment of VOCs in vadose zone is selected remedy, with continuation of groundwater pump and treat.
	U.C. Davis, Pesticide applicator site	Chlorpyrifos, Dicamba, Atrazine, Aldrin, Simazine, Dieldrin, Endrin, DDT	Contaminated soil removed, groundwater treatment nearing completion, no further action being considered.
	J.R. Simplot, Courtland	1,2,3-TCP, 2,4,5-TP,	Phytoremediation underway for soil & groundwater remediation.

Table 6. Actions taken by the Regional Water Quality Control Board, Central Valley (Region 5, Fresno), in FY 2006-2007

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Fresno	Blue Hills Disposal Site, County of Fresno	Dicamba, 2,4-D, Silvex	DTSC lead. Corrective action underway.
	Thompson Hayward Agriculture & Nutrition	Alpha-BHC, Beta-BHC, Gamma-BHC, Dieldrin, DBCP, Diphenamid, Heptachlor, Heptachlor Epoxide	DTSC lead. Site has been certified by DTSC and de-listed as a USEPA NPL site. Remedial Action Plan Implemented. Implementation of Operation, Maintenance, and Monitoring Plan and Agreement. Cap completed. Semi-annual reports being submitted. Dieldrin detected at low concentration in groundwater confirmation samples. Concentrations below remediation goal. DTSC now preparing 5 year review of the site.
	J.R. Simplot, Helm Facility	Dieldrin	Long-term groundwater monitoring.
	FMC Corporation, Fresno Facility	1,2,3-TCP, Aldrin, Dieldrin, DDT, DDD, DDE, Heptachlor, Lindane, Toxaphene, Ethyl Parathion, Malathion, Ethion, Endosulfan, Dimethoate, Furadan, Dinitroresol, Dinoseb (DNBP)	DTSC lead. Discharge area capped and undergoing remediation, using SVE. 1,2,3-TCP in groundwater is driving new off-site extraction well installation, expanding the original two-well extraction system. Groundwater pilot test results show enhanced reductive dechlorination is cost prohibitive – will continue using SVE and pump & treat as primary plume control tool.
	Britz, Inc., Five Points	Toxaphene, DDT, DNBP	State Superfund site (DTSC lead). Deed restriction in place. Natural attenuation. Operation and Maintenance Plan in place. On-site remediation included capping site and constructing an engineered drainage system to contain run-off from the site.
	Fresno County Wells	DBCP, EDB, 1,2-D	Pesticides detected in 146 wells (AB 1803 sampling).
	Coalinga Airport	DDT, DDE, Ethion, Toxaphene, 2,4-D, Dinoseb, Malathion, Parathion, Merphos	DTSC lead on the site. Pesticides found in soil. Additional assessment proposed and work plan approved.
	Spain Air	Ethion, DEF, Parathion, Trithion, Dinoseb, Paraquat, DDE, DDT, Endosulfan II	Assessment needed.
	PureGro, Oxalis	1,2-Dichloropropane, 1,2,3-TCP, nitrate	Western Area soil assessment complete. Monitoring new wells for 4 quarters to set baseline prior to cleanup workplan submittal.
	Eagle Field (FUDS)	2,4-D, Pentachlorophenol,	Pesticides detected from groundwater grab samples. Additional assessment is needed.
	Broadview Water District – Bullard Avenue Air Strip	DDT Toxaphene	Pesticides detected from groundwater grab samples. Assessment in progress.
	Baptiste Property	DDT Toxaphene	Pesticides detected in soil samples. Assessment in progress.
	Mike Perez Property	DDT Toxaphene	Pesticides detected from groundwater grab samples. Assessment in progress.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	Former Unocal - Whitesbridge Rd, Kerman	DDT, Toxaphene and Dieldrin	Initial soil investigation completed. Additional investigation has been requested and work plan is being prepared.
Kern	Brown & Bryant, Inc., Arvin	1,2-D, 1,3-D, DBCP, Dinoseb, EDB, carbaryl	Federal Superfund site (DTSC lead). U.S. EPA has prepared Remedial Information Feasibility Study Report.
	Brown and Bryant, Inc., Shafter	DDE, DDT, Dinoseb, VOCs, (DCP, ethylene dibromide)	State Superfund site (DTSC lead). The site has been conducting a supplemental risk assessment during 2005. A Remedial Action Plan (Soil Excavation and Deed Restriction) was submitted in October 2007.
	Western Farm Service, Delano Facility	DDT, Toxaphene, Dinoseb, Dicamba	Assessment on-going, long-term monitoring on-going, impacted soils have been capped.
	Puregro Company, Bakersfield	DBCP, Toxaphene	DTSC lead. Additional soil sampling conducted this year to obtain additional data to close up data-gaps. Health-Risk assessment currently being drafted.
	Dick Garriott Crop Dusting, Bakersfield	Chlordane, DDE, DDT, PCNB, Endosulfan I & II, Methoxychlor, Carbofuran, Carbaryl, Bufencarb, DEF, Tedion, Diazinon, Chlorpyrifos, Ethyl Parathion, Diuron, Dinoseb, Dicamba	CAO issued in 1993. Hydrogeological Assessment Report completed in 1993. Work in progress to determine extent of groundwater degradation. Additional groundwater monitoring wells proposed to determine extent of degradation. Title 27 cap also proposed.
	USDA, Shafter	Dichlobenil, EPTC, Prometryne, DDT, DDE, DDD, Dieldrin, Toxaphene, Silvex, PCP, Chlorpropham, Ametryn, Atrazine	USEPA lead. Developing a closure plan. Soil remediation and dry well abandonment were requested in 1996 but have not been completed.
	Kern County Wells	DBCP, 1,2-D, EDB	Pesticides detected in 57 wells (AB 1803 sampling). No assessment underway.
Kings	Lemoore N.A.S.	Unspecified	Investigation ongoing.
	Blair Field	2,4-D, Dicofol, Diazinon, Propargite	Assessment needed.
	Blair Aviation	Trifluralin, Mevinphos, Phorate	Contamination assessment needed.
	Lakeland Dusters	DDT, Toxaphene	Contaminated soils excavated and stockpiled on site. Remediation underway.
Madera	Chowchilla Municipal Airport	Dieldrin, Alpha-BHC, Endosulfan, PCNB, DDT, DDE, Lindane	Contamination assessment needed.
	Madera Municipal Airport	DDT, DDE, Toxaphene, Dicofol, Endrin	Impacted soils have been capped. Long-term monitoring on going.
	Western Farm Service, Inc., Madera Facility	Dinoseb, DBCP, Dieldrin	Impoundment closed. Impacted soils have been capped. Long-term monitoring on going.
	Madera County Wells	DBCP	DBCP detected in two wells (AB 1803 sampling). No assessment underway.
Tulare	Mefford Field, City of Tulare	p,p'-DDT, p,p'-DDE, 2,4,5-TCP, Dicamba, DNBP, Diuron	Contamination assessment and mitigation reports needed.
	Tulare Airport	2,4-D, DNBP	Assessment needed.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	Kaweah Crop Dusters	DDT, 2,4-D, 2,4,5-T, Methoxychlor	DHS Remedial Action Order issued January 1984. Cleanup ongoing.
	Tulare County Wells	1,2-D	Detected in wells through AB 1803 sampling. No assessment underway.

Table 7. Actions taken by the Regional Water Quality Control Board, Central Valley (Region 5, Redding), in FY 2006-2007.

Butte	L.P, Remanufacturing Facility, Chico	Pentachlorophenol Tetrachlorophenol	DTSC is lead agency. Waste Discharge Requirements adopted in 1996 for groundwater treatment and reinjection. Groundwater extraction and treatment ceased in Feb 03. Verification groundwater monitoring underway to determine effectiveness of natural attenuation. Deed restriction in place prohibiting groundwater use without DTSC approval.
Tehama	L.P, Sawmill, Red Bluff	Pentachlorophenol	Bioremediation of excavated soil stockpile and groundwater monitoring continues.
	L.P, VG Mill & Jamb, Red Bluff	Pentachlorophenol Tetrachlorophenol Stoddard Solvent	CAO Order 98-712. Soils cleaned up. Pilot project using ozone for in-situ groundwater remediation underway.

Table 8. Actions taken by the Regional Water Quality Control Board, Lahontan (Region 6), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Inyo	Amargosa River at Upper Canyon	Triclopyr	In March 2004, two surface water samples collected from the Amargosa River and analyzed as part of the Region's ambient water quality monitoring program showed triclopyr at concentrations of 0.06 and 0.07 µg/L. If triclopyr is again detected, Regional Board staff will investigate possible sources.
San Bernardino	George Air Force Base	Dieldrin	A number of groundwater monitoring wells in the vicinity of the Westwinds Golf Course test positive with low levels of dieldrin. Some wells are above the CA State Department of Health Services Notification Level for dieldrin. The Air Force conducted further site assessment, including surface soil sampling to evaluate potential sources and installation of groundwater monitoring wells to define the lateral extent of dieldrin in groundwater. Groundwater monitoring continues to evaluate concentration trends. The Air Force is seeking funds to conduct additional site assessment and establish the vertical extent of dieldrin in groundwater and determine its potential to migrate into deeper waters. This site is adjacent to large municipal supply wells for the City of Adelanto. To date, those wells have not been found to contain dieldrin.
	China Lake Naval Weapons Center	4,4' DDD 4,4' DDE 4,4' DDT Dieldrin Chlordane	Sites 31 and 32 Pesticide Storage area and Golf Course Pesticide Handling area at China Lake contained pesticides in soil and low concentrations in ground water. Area was cleaned up, contaminated soil source was removed and disposed appropriately. Ground water is monitored, and is not used for drinking water in the area east of China Lake Playa.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Placer	Resort at Squaw Creek Golf Course	Clopyralid	Resort at Squaw Creek Golf Course proposed use of clopyralid for clover control. The golf course is under Waste Discharge Requirements (WDR), which allow only for conditional use of chemicals, including herbicides, which are approved by the Regional Board. Clopyralid was not on the list of approved herbicides. The mobility of clopyralid in soils and groundwater is much higher than other herbicides allowed under the permit. Regional Water Board staff worked with the discharger and the Resort at Squaw Creek Technical Advisory Group to develop an herbicide application plan that was protective of water quality and beneficial uses for both surface water and groundwater. Main features of the permit include: (1) Establishment of herbicide application exclusion zones around each local drinking water well, using the California Department of Health Services Drinking Water Assessment and Protection fixed radius equation; (2) implementation of a comprehensive groundwater monitoring program for clopyralid; and (3) use of approved herbicide application rates and application methods only. In June 2006, the Regional Board approved an amended WDR to allow implementation of the herbicide application plan.
All counties in Region 6 (includes all or parts of Modoc, Lassen, Plumas, Sierra, Nevada, Placer, El Dorado, Alpine, Mono, Inyo, San Bernardino, Kern, Los Angeles Counties)	Region wide	Herbicides	To qualify for the waiver under the Timber Harvest Activities Waiver Policy (adopted in January 2003; renewed February 2007), applicants must notify the Regional Board at least 90 days in advance of any proposed herbicide application, and provide specific information about the proposed herbicide use. They must also adhere to any monitoring program prescribed by the Executive Officer.

Table 9. Actions taken by the Regional Water Quality Control Board, Colorado River Basin (Region 7), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Imperial	Central Brave Agricultural Service	4,4'-DDE, Endosulfan	Recalcitrant Discharger. Referred to Attorney General for nonpayment of fees.
	J.R. Simplot Company, Sandin Siding Facility	Dieldrin, 4,4'-DDT, Endrin	CAO issued. Site in remediation. Risk base corrective action in-progress (site closed in 2001)
Riverside	West Coast Flying	Endosulfan I & II, Disulfoton	Recalcitrant discharger. Referred to Attorney General for nonpayment of fees.
	Woten Aviation Services	Disyston, DEF, Ethyl Parathion, Methyl Parathion	CAO issued. U.S. EPA has lead in cleanup.
	Foster Gardner, Inc., Coachella Facility	1,2-Dichloroethane, 1,2-D, Ethylene Dibromide	CAO issued October 1991 by RWQCB. Imminent and Substantial Endangerment Order issued by DTSC on August 21, 1992. Cleanup on going.
	Coachella Valley Mosquito Abatement District	DDT	Under investigation. Pesticide contamination insignificant, UST Cleanup only. (site closed in 2001) Site reopened in 2006, barrels discover low levels DDT. Remedial action asphalt cap w deed restriction scheduled for mid 2008.
	Crop Production Services, Blythe (Formerly Pure Gro MW-24)	1,2-Dichloropropane	Undergoing cleanup.

Table 10. Actions taken by the Regional Water Quality Control Board, Santa Ana (Region 8), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Orange	Great Lakes Chemical Corporation (formerly Great Western Savings), Irvine	1,2-D, EDB, 1,2-DCE	On-site full-scale multi-phase vacuum extraction system is continuing. GLCC now discharges to County Sanitation District of Orange County under Special Purpose Discharge Permit as of 12/2001. GLCC was issued a CAO by RWQCB on 4/17/97 for off-site remediation of impacted groundwater. GLCC is operating an on-and off-site groundwater extraction and treatment system. The full treatment system has been operating continuously since December 2001. Waste Discharge Requirements (Order No. 0025) was rescinded in April 2002. Treated groundwater is discharged to sewer line.
Riverside	Sunnymead Mutual Water Company (North and South Well)	DBCP	Both wells were sold to Eastern Municipal Water District in February 1991. Customers are being served by the new District from other supply sources. North Well has been completely rehabilitated. South Well will be used for emergency purposes only.
	Arlington Basin	DBCP	Construction of a 7-MGD reverse osmosis plant with partial flow through a GAC unit for treatment of TDS, NO ₃ and DBCP was completed in September 1990. About 1.0 MGD of groundwater is treated and 0.5 MGD is bypassed. Treated water is mixed with the bypassed water and discharged to the Arlington Channel for ground water recharge purposes by the Orange County Water District. Salt brine (0.2 MGD) is discharged to the Santa Ana Regional Interceptor, which discharges to the ocean via the Orange County Sanitation District. A second parallel transmission line has been completed to bring extracted groundwater from three wells to the reverse osmosis unit. Sale of this water to Cities of Norco and Jurupa Community Services District.
	City of Corona (Well 8, mun.)	Simazine	Well has been completely rehabilitated. Simazine was not detected in the sampling after rehabilitation work. No further action being taken. Trace of TCE has been detected in recent sampling. No further action being taken.
	Home Gardens County Water District (Wells 2 & 3, mun.)	DBCP, Simazine	Water purveyor has closed these wells and is now purchasing water from the City of Riverside.
	City of Riverside, Twin Spring, mun.	DBCP	Well is out of service
	City of Corona (Well 17, mun.)	Simazine, DBCP	Well has been abandoned. A new well (17A) has been drilled and is in use. Trace of DBCP was detected in March 1991 sampling. Trace of TCE has been detected in recent sampling of the new well.
	City of Riverside (Russell "B", mun.)	Simazine, DBCP	Well has been abandoned and replaced with a new well. (Russell "C")
	City of Riverside (Garner "B", mun.)	DBCP	A 3,200 gpm GAC treatment system has been installed (Garner B Treatment Plant)
	City of Riverside (Russell "C", mun)	DBCP	A 3,200 gpm GAC treatment system has been installed (Garner B Treatment Plant)

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	City of Riverside (1st Street)	DBCP	Well is not being used due to high concentrations of DBCP. No mitigation measures in effect.
Riverside	City of Riverside (Electric Street, mun.)	DBCP	A 9,000 gpm GAC treatment system has been installed (Palmyrita Treatment Plant)
	City of Riverside (Palmyrita, mun.)	DBCP	A 9,000 gpm GAC treatment system has been installed (Palmyrita Treatment Plant)
	City of Riverside (3 wells, mun.)	DBCP	Water from Hunt Wells No. 6, 10, and 11 is being blended with other wells in the area.
	City of Riverside (3 wells, emergency, Downtown Riverside)	DBCP	No mitigation measures in effect. These three wells are also contaminated with industrial organic solvents.
	Riverside County Hall Of Records, (pr)	DBCP	No mitigation measures in effect. Volatile organic chemicals such as TCE and PCE have also been found. Well is used for emergency purposes only.
	Loma Linda University, Arlington, (Wells 1 & 2, mun.)	DBCP	The University water supply system is tied into the City of Riverside domestic water supply distribution system. These two wells are used for irrigation purposes at the school.
	City of Riverside (Moor-Griffith, mun.)	DBCP	A 9,000 gpm GAC treatment system has been installed (Palmyrita Treatment Plant)
	Lake Hemet MWD (Wells A and B, mun.)	DBCP	The District is using well "A" for irrigation purposes. Well "B" is being used by a local farmer for irrigation purposes.
San Bernardino	Victoria Farms MWC (Well 01 & 03, mun.)	DBCP	Water purveyor has closed these wells and is now purchasing water from the City of San Bernardino.
	Gage System Wells (16 wells, mun.) Raub Wells (4 wells, mun.)	DBCP	The City of Riverside and the Gage Canal Company operate the Gage System, which consists of sixteen wells located along the Santa Ana River. These wells are being blended for domestic use. Trace amounts of radon have been detected in some of these wells. The City installed three deep wells in the area to increase blending capacity. Two GAC treatment systems (total of six wells) have been in operation since February 2000 for removal of VOCs and DBCP. Additional GAC system came on line (June 2006) for treatment of groundwater (four Raub wells). These units are located at the leading edge of an existing TCE plume. Raub treated groundwater is pumped into Gage System transmission line.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
	Bunker Hill Basin: Crafton/Redlands area (36 wells)	DBCP	The City of Redlands started construction of an 8.5-MGD granular activated carbon (GAC) treatment system in September 1991. This GAC system treats groundwater from two wells. Treated water is being put into the local water supply distribution system. Funding for this system is from the STATE WATER BOARD (\$2.8 million) and bond money through the State Expenditure Plan (\$1.9 million) that is managed by DTSC. The system has been off line since July 1997 due to presence of perchlorate above Action Level in both production wells. The Department of Health Services is reviewing effectiveness of tailored carbon system for removal of VOCs and perchlorate. Lockheed Martin has provided \$3.7 million for the cleanup of groundwater supplies that the City has been conducting since 1985.
	South San Bernardino Company Water District (4 wells, mun.)	DBCP	All four wells are out of service. The City of San Bernardino Water Department purchased the water district in July 1991. The City now supplies all the customers in the area.
	Cucamonga VWD (15 wells, mun.)	DBCP	Five wells are inactive. Ten wells are active and water is being blended with other supply wells. Water is being purchased from Metropolitan Water District (MWD).
	Monte Vista CWD (3 wells, mun.)	DBCP	One well has been abandoned. Two wells are active and water is being blended with other supply wells. Water is being purchased from MWD.
	City of Upland (13wells)	DBCP	Five wells have been abandoned. Four wells are currently on standby. Four wells are active and water is being blended with other supply wells.
	City of Loma Linda (6 wells, mun.)	DBCP	Two wells have been abandoned. One well is out of operation due to high nitrates. Four new deep wells have been on line since 2002.

Table 11. Actions taken by the Regional Water Quality Control Board, San Diego (Region 9), in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
San Diego	City of Oceanside Water Utility District (Well No. 12-11S/ 4W-18L1 S)	1,2-DCP (1,2-Dicloropropane)	This backup drinking water well is located in the San Luis Rey River Valley. Up to 2.3 µg/L has been detected in this well. The City of Oceanside is continuing monitoring of this well and reports to the State's DHS.
	San Diego Naval Station	GW1-3 - 4,4'-DDT=0.019 ug/l; Endrin=0.015 ug/l; Methoxychlor=0.032 ug/l GW1-4 - 4,4'-DDT=0.012 ug/l; Endrin=0.017 ug/l; Methoxychlor=0.016 ug/l MW5 – Endrin=0.01 ug/l	Pesticides have been detected in monitoring wells at detection limits. Concentrations are indicative of surface application rather than disposal practices. Currently under investigation by DTSC and RWQCB. Possible ecological threat to San Diego Bay.
	MCB Camp Pendleton	1111-MW4 =4,4'-DDD at 0.02 µg/L ; 1A1-MW-1 =4,4'DDD at 0.01 µg/L ; 09S/07W-11K01 = dalapon=0.83 µg/L; 23W-07A,B,C = dalapon=0.43-1.7µg/L; 1111MW-3 = 4,4-DDD=0.03 µg/L; 4,4-DDE=0.08 µg/L; 4,4-DDT=0.04µg/L; 06GWCW1193 = 4,4-DDT=0.74 µg/L; 06GW09A392 = 4,4-DDD=0.52 µg/L	Ground water monitoring activities will be conducted to determine fluctuations of pesticide concentrations with time across the site. Most concentrations detected in ground water to date do not exceed established concentrations that are protective of human health and the environment. Two instances exceed MCLs and they were detected in 1992 and 1993 only. Currently under investigation by DTSC and RWQCB.

Table 12. Action taken by the State Water Resources Control Board in FY 2006-2007.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
San Diego, Riverside, and Orange Counties	Various GAMA monitoring sites	Pesticides, Herbicides, and Degradates	The GAMA Program has sampled over 1,200 public supply wells for various chemicals, including pesticides, herbicides and their degradates. Fifty-eight wells were sampled in the San Diego GAMA Study Unit. Out of 122 pesticides, herbicides and degradates analyzed, Simazine, deethylatrazine, prometon, and atrazine were the most frequently detected at maximum concentrations of 0.181, 0.013, 0.03 and 0.85 µg/L respectively. Seventeen other pesticides, herbicides, and degradates were detected (no concentrations were detected above drinking water standards). The San Diego GAMA Study Unit Data Summary Report is available at www.waterboards.ca.gov/gama .
Napa, Sonoma, Marine and Solano Counties	Various GAMA monitoring sites	Pesticides, Herbicides, and Degradates	Eighty-nine public supply wells were sampled in the North San Francisco Study Unit. Out of 122 pesticides, herbicides and degradates analyzed, Simazine was the most frequently detected at maximum concentration of 0.052 µg/L. Chlordiamino-s-triazine and deisopropyl atrazine were both found in two wells at estimated concentration of E0.01 µg/L.
San Joaquin, Sacramento, Stanislaus and Contra Costa Counties	Various GAMA monitoring sites	Pesticides, Herbicides, and Degradates	Seventy public supply, irrigation, domestic and monitoring wells were sampled in the North San Joaquin Study Unit. Out of 122 pesticides, herbicides and degradates analyzed, fifteen were detected. The most frequently detected was Simazine at maximum concentration of 0.058 µg/L. Atrazine, Metachlor, Hexazinone, Tebuthiuron, Diphenamid, Deethylatrazine, 2,6-diethylaniline, and 3,4-Dichloroaniline were also found at maximum concentrations of 0.081, 0.012, 0.066, 0.03, 0.02, 0.046, 0.004, and 0.045 µg/L, respectively. Two herbicides: DBCP and 1,2-Dibromoethane were found at respective concentration of 1.43 and 0.14 µg/L, which are above MCL for these chemicals.
Monterey, Santa Cruz, San Luis Obispo Counties	Various GAMA monitoring sites	Pesticides, Herbicides, and Degradates	Ninety four public wells and 3 monitoring wells were sampled in the Monterey Bay and Salinas Valley Basins. Out of 122 pesticides, herbicides and degradates analyzed, nine were detected. The most frequently detected was Simazine at maximum concentration of 0.02 µg/L. Deethylatrazine, Atrazine, Dacthal, Metolachlor, Deisopropyl atrazine, Dieldrin, Prometone and Terbutyl azine were found at estimated concentrations of E0.01, 0.035, E0.004, E0.007, E0.004, E0.006, E0.01, and E0.01 µg/L, respectively.
Tulare County	Domestic Wells	Pesticides, Herbicides, and Degradates	One hundred eighty two domestic wells were sampled in Tulare County. Delta Laboratory analyzed water samples for DBCP only. DBCP was found in 26 wells at maximum concentration of 1.63 µg/L. Additionally, LLNL analyzed water samples from 19 wells for CDFA list of pesticides and degradates. The most frequently detected were Simazine, Diuron and Bromacil at maximum concentrations of 0.158, 0.75 and 1.021 µg/L, respectively. The most frequently detected degradates were Deisopropyl Atrazine and Deethyl Atrazine at maximum concentrations of 0.732 and 0.05 µg/L,

			respectively. Less frequently detected pesticides and degradates were Atrazine(0.037µg/L), Cyanazine (0.012µg/L), Norflurazon(1.39µg/L), Hexazinone (0.027µg/L), Desmethylnorflurazon(0.323 µg/L), Primodone (0.07 µg/L, Metolachlor(0.077 µg/L), and Diamino Chlorotriazine (0.099 µg/L).
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