

# **SAMPLING FOR PESTICIDE RESIDUES IN CALIFORNIA WELL WATER**

**2014 Update**

Twenty-ninth Annual Report

Pursuant to the  
Pesticide Contamination Prevention Act



California Environmental Protection Agency  
DEPARTMENT OF PESTICIDE REGULATION

**January 2015**

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California Environmental Protection Agency  
California Department of Pesticide Regulation  
Environmental Monitoring Branch  
Ground Water Protection Program  
1001 I Street, Sacramento, California 95814

## ABSTRACT

As required under Food and Agricultural Code (FAC) section 13152(e), this annual report summarizes ground water sampling results for pesticide residues. For calendar year 2013, sampling was conducted by the Department of Pesticide Regulation (DPR), California Department of Public Health (CDPH), State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB). Well locations are described,<sup>1</sup> as are the actions taken by DPR and the SWRCB/RWQCBs to prevent migration of pesticides to ground water from nonpoint agricultural sources and point sources, respectively.

## RESULTS OF WELL SAMPLING FOR PESTICIDE RESIDUES

From January through December 2013, DPR and CDPH sampled wells for one or more of 123 agricultural use pesticides and pesticide degradates (Table i).<sup>2</sup> Twenty-three pesticides/degradates from nonpoint sources were detected, seven of which are not registered for use in California (Table ii).

**Table i.** Summary of well sampling data collected in 2013 by DPR and CDPH.

	DPR	CDPH	† TOTAL	Percent of Total
‡ Pesticides/Degradates Sampled	26	105	123	
Pesticides/Degradates Detected	12	14	23	18.7
‡‡ Wells Sampled	138	2,978	3,116	
Wells with Detections	61	237	298	9.6
Counties Sampled	6	55	55	
Counties with Detections	5	16	18	32.7

† “Total” reflects *unique* values, not a summation of values. For example, of the 58 California counties, three counties were not sampled by any agency, but some were sampled by multiple agencies.

‡ “Pesticides Sampled” and “Pesticides Detected” present the total number of individual pesticides or pesticide degradation products sampled or found in ground water regardless of the number of sampling events or detections that occurred during the reporting period.

‡‡ “Wells Sampled” and “Wells with Detections” present the total number of individual wells sampled or found to contain pesticide residues regardless of the number of sampling events or detections that occurred during the reporting period.

<sup>1</sup> Although DPR is required to provide the locations of sampled wells, DPR summarizes this information by county only to protect well owner privacy. DPR can provide additional location information—including the township, range, and section of the sampled wells—upon request.

<sup>2</sup> Some exceptions to the “agricultural use” status of the sampled pesticides apply; some industrial use pesticides and pesticides that are no longer—or never were—registered for use in California are included due to the varying monitoring goals of reporting agencies.

The following table summarizes the pesticides and pesticide degradates detected in 2013 that fall under DPR regulatory authority (Table ii). DPR responds to detections of pesticides in ground water from nonpoint agricultural sources; the SWRCB/RWQCBs respond to point source detections.

**Table ii.** Pesticides and pesticide degradates detected in 2013: DPR regulatory authority, nonpoint agricultural use. Detection concentrations/drinking water quality standards are in parts per billion (ppb).

Pesticide or Degradate	Wells with Detections	Concentration Range (ppb)	†Drinking Water Quality Standard (ppb)	Regulatory Status
				DPR Response to Detection
<b>1,2-Dichloropropane (1,2-DCP)</b> (propylene dichloride)	7	0.36 – 0.98	CDPH MCL: 5 OEHHA PHG: 0.5 U.S.EPA MCL: 5 U.S.EPA MCLG: 0	Not Registered
<b>ACET (deisopropyl-atrazine or deethyl-simazine)</b> <i>(degradate of atrazine, simazine)</i>	51	0.057 - 1.25	NE	*Parent pesticides are on the GWPL, 3CCR 6800(a). <hr/> All detections were made in GWPAs; pesticide applications in GWPAs are made under the authority of the † <b>Restricted Materials</b> permit program.
<b>Atrazine</b>	1	0.082	CDPH MCL: 1 OEHHA PHG: 0.15 U.S.EPA MCL: 3 U.S.EPA MCLG 3	Pesticide is on the GWPL, 3CCR 6800(a). <hr/> Detection was made in a GWPA.
<b>Azoxystrobin</b>	1	0.06	NE	Pesticide is on the GWPL, 3CCR 6800(b). <hr/> DPR is evaluating this detection as part of study GW13.
<b>Bispyribac-sodium</b>	2	0.05 - 0.1	NE	Pesticide is on the GWPL, 3CCR 6800(b). <hr/> DPR is evaluating these detections as part of study GW13.
<b>Bromacil</b>	18	0.051 - 3.74	U.S.EPA HAL: 70	Pesticide is on the GWPL, 3CCR 6800(a). <hr/> All detections were made in GWPAs.
<b>Carbon disulfide</b>	1	0.74	CDPH NL: 160	Not Registered
<b>Chlorthal-dimethyl acid</b> <i>(dacthal degradates)</i>	10	0.1 - 15	U.S.EPA HAL: 4000	Parent pesticide is not listed on the GWPL. <hr/> DPR no longer performs field studies for dacthal degradates unless they approach health levels.

Pesticide or Degradate	Wells with Detections	Concentration Range (ppb)	†Drinking Water Quality Standard (ppb)	Regulatory Status
				DPR Response to Detection
<b>DACT</b> (diaminochlorotriazine) <i>(degradate of simazine)</i>	56	0.052 - 8.15	NE	Parent pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
<b>Dalapon</b>	1	12	CDPH MCL: 200 OEHHA PHG: 790 USEPA MCL: 200 USEPA MCLG: 200 USEPA HAL: 200	Not Registered
<b>DBCP (1,2-dibromo-3-chloropropane)</b>	208	0.01 - 1.6	CDPH MCL: 0.2 OEHHA PHG: 0.0017 U.S.EPA MCL: 0.2 U.S.EPA MCLG: 0	Not Registered
<b>DEA (deethyl-atrazine)</b> <i>(degradate of atrazine)</i>	4	0.053 - 0.107	NE	Parent pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
<b>Diquat dibromide</b>	2	2.2 - 4.5	CDPH MCL: 20 OEHHA PHG: 15 U.S.EPA MCL: 20 U.S.EPA MCLG: 20	Pesticide is on the GWPL, 3CCR 6800(b). CDPH resampled the detection sites and failed to find diquate dibromide in subsequent samples.
<b>Diuron</b>	9	0.055 - 0.367	NE	Pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
<b>DSMN</b> (desmethyl-norflurazon) <i>(degradate of norflurazon)</i>	28	0.055 – 0.645	NE	Parent pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
<b>Ethylene dibromide (EDB)</b>	8	0.01 - 0.19	CDPH MCL: 0.05 OEHHA PHG: 0.01 U.S.EPA MCL: 0.05 U.S.EPA MCLG: 0	Not Registered
<b>Methyl bromide</b>	1	0.67	U.S.EPA HAL: 10	‡‡ This pesticide is not listed on the GWPL, 3CCR 6800 (a) or (b) but is regulated as a California Restricted Material. CDPH will retest this well according to established policy.

Pesticide or Degradate	Wells with Detections	Concentration Range (ppb)	†Drinking Water Quality Standard (ppb)	Regulatory Status
				DPR Response to Detection
Norflurazon	14	0.054 - 0.407	U.S.EPA HAL: 30	Pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
Orthosulfamuron	2	0.05 - 0.1	NE	This pesticide is not on the GWPL. DPR is evaluating these detections as part of study GW13.
Penoxsulam	1	0.06	NE	This pesticide is on the GWPL, 3CCR 6800(b). DPR is evaluating this detection as part of study GW13.
Simazine	39	0.051 - 0.327	CDPH MCL: 4 OEHHA PHG: 4 U.S.EPA MCL: 4 U.S.EPA MCLG:4	Pesticide is on the GWPL, 3CCR 6800(a). All detections were made in GWPAs.
Tetrachloroethane	1	0.8	NE	Not Registered
Xylene	5	0.58 - 8.6	CDPH MCL: 1,750 OEHHA PHG: 1,800 U.S.EPA MCL & MCLG: 10,000	Not Registered

† Drinking water quality standards: HAL: health advisory level; MCL: maximum contaminant level; MCLG: maximum contaminant level goal; NL: notification level; PHG: public health goal.

\* Pesticides on the Ground Water Protection List (GWPL) 3CCR 6000(a) and (b) are those labeled for agricultural, outdoor institutional, or outdoor industrial use that have the potential to pollute ground water. Sublist 6800(a) includes seven agricultural herbicides that are regulated as ground water contaminants: atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine. Sublist 6800(b) includes 101 pesticides that have the potential to become ground water contaminants based on their mobility, persistence and legal uses.

‡ DPR does not investigate detections that occur within GWPAs for pesticides (or their degradates) that are on the 6800(a) list of known ground water contaminants.<sup>3</sup> Applications of these pesticides in GWPAs are managed by County Agricultural Commissioners via the **Restricted Materials** permit program. This program requires users to modify their pesticide use practices based on soil properties of the GWPA.

‡‡ All pesticides listed under 3CCR 6800(a), when labeled for agricultural, outdoor institutional, or outdoor industrial use, are also listed as California Restricted Materials and regulated accordingly. **Methyl bromide** is, however, listed as a Restricted Material based upon findings other than its detection in ground water.

<sup>3</sup> Schuette, J. 2004. *Summary of Program Policies Specifying When the Director Will Not Determine if a Detection Was the Result of Legal, Agricultural Use ("N" Memorandum)*. Department of Pesticide Regulation, Environmental Monitoring Branch. December 1, 2004.

## **PREFACE**

This report fulfills the requirements of the Pesticide Contamination Prevention Act of 1985 (PCPA) and AB 2701 of 2004. The PCPA required the Department of Pesticide Regulation (DPR) to submit the results of ground water monitoring for pesticide residues in an annual *written* report; AB 2701 amended the PCPA to require DPR to post the report on its Web site.

## **ACKNOWLEDGEMENTS**

The authors wish to thank the reviewers whose unique perspectives and experiences helped ensure the accuracy and readability of this report. We gratefully acknowledge the staff of DPR and cooperating federal, state, local, and private agencies for contributing to the database.

## **DISCLAIMER**

As required by the PCPA, this report describes active ingredients of registered pesticide products that have been found in ground water. DPR provides this information to satisfy legal mandates and provide information to the public. Any discussion of commercially available pesticide products does not constitute an actual or implied endorsement of the products by DPR.

## ABBREVIATIONS

AAL	Archived Advisory Level
AB	Assembly Bill
CAC	County Agricultural Commissioner
CALVUL	California Vulnerability Model
3CCR	Title 3, California Code of Regulations
CDPH	California Department of Public Health
DPR	Department of Pesticide Regulation
E	Estimated Value
FAC	Food and Agriculture Code
GAMA	Groundwater Ambient Monitoring and Assessment Program
GWPA	Ground Water Protection Area
GWPL	Groundwater Protection List
HAL	Health Advisory Level
LLNL	Lawrence Livermore National Laboratory
LEACHM	Leaching Estimation and Chemistry Model
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
µg/L	Micrograms Per Liter
MPE	Multi-Port Extraction
NL	Notification Level
OEHHA	Office of Environmental Health Hazard Assessment
PCPA	Pesticide Contamination Prevention Act
PHG	Public Health Goal
PMZ	Pesticide Management Zone
ppb	Parts Per Billion
RWQCB	Regional Water Quality Control Board
SNV	Specific Numerical Value
SWRCB	State Water Resources Control Board
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey

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## BACKGROUND

### PROTECTING GROUND WATER FROM PESTICIDE CONTAMINATION — THE PCPA

DPR began addressing pesticide contamination of ground water in the early 1980s after the discovery of 1,2-dibromo-3-chloropropane (DBCP) in well water. Subsequent reports of pesticides in ground water led to passage of the Pesticide Contamination Prevention Act (PCPA) of 1985,<sup>4</sup> an act designed to prevent pesticide *pollution*<sup>5</sup> of ground water by *agricultural use*<sup>6</sup> pesticides, with emphasis on the protection of public drinking water supplies. The PCPA authorized establishment of a program<sup>7</sup> to identify pesticides with the potential to pollute ground water, required ground water sampling, directed DPR to maintain a database of wells sampled for pesticides, and required a formal review to determine if use of detected pesticides could be modified to protect ground water.

To implement the PCPA, DPR:

- Obtains physical/chemical/environmental fate data from pesticide registrants to support the registration of agricultural use pesticides and maintains these data in DPR's [Pesticide Chemistry Database](#).
- Uses data in the Pesticide Chemistry Database to establish persistence and mobility threshold values called [specific numerical values](#) (SNV)<sup>8</sup> and evaluates the ground water pollution potential of agricultural use pesticides based (in part) on these values.
- Adds to the [Ground Water Protection List](#) (GWPL)<sup>9</sup> agricultural use pesticides that exceed SNVs (and are applied in specific ways),<sup>10</sup> and pesticides whose use has been modified following their detection in ground water.<sup>11</sup>
- Utilizes contaminant transport modeling tools to evaluate the contamination potential of pesticides prior to their registration for use in California, and to define [Ground Water Protection Areas](#) (GWPA)<sup>12</sup> and prioritize pesticides for monitoring.

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<sup>4</sup> The PCPA added sections 13141-13152 to the Food and Agricultural Code (FAC). Title 3, California Code of Regulations (3CCR) sections 6416-6487.5 and 6800-6804 implement these FAC sections.

<sup>5</sup> FAC section 13142 defines *pollution* as "...the introduction into the groundwaters of the state of an active ingredient, other specified product, or degradation product of an active ingredient of a pesticide above a level, with an adequate margin of safety, that does not cause adverse health effects."

<sup>6</sup> California's definition of "agricultural use" is broad, and includes not only pesticides used in production agriculture, but also on turf (e.g., golf courses, cemeteries) and along rights-of-way.

<sup>7</sup> See DPR's [Ground Water Protection Program](#).

<sup>8</sup> SNV threshold values for all parameters are listed in 3CCR section 6804.

<sup>9</sup> The Ground Water Protection List (3CCR section 6800) is divided into two sublists: Sublist 6800(a) includes seven agricultural herbicides that are regulated as ground water contaminants: atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine. Sublist 6800(b) includes 101 pesticides that have the potential to become ground water contaminants based on their mobility, persistence and legal uses.

<sup>10</sup> Specific application methods include injection into the soil by ground-based application equipment, or applications made by chemigation or followed within 72 hours by flood or furrow irrigation.

<sup>11</sup> Previously detected pesticides on the GWPL (3CCR section 6800[a]) include: atrazine, bentazon, bromacil, norflurazon, prometon, simazine and diuron (except products with less than 7% diuron that are applied to foliage).

<sup>12</sup> See Appendix A for more information on GWPAs.

- Monitors agricultural use pesticides to determine if they have migrated to ground water.
- Evaluates pesticide detections in ground water, including those reported by other agencies.<sup>13</sup>
- Determines whether detection of a pesticide in ground water is the result of *legal* agricultural use<sup>14</sup> and if so, conducts a formal hearing to determine if the pesticide's use can be modified to prevent pollution.
- Develops and adopts mitigation measures to prevent ground water pollution when continued use of a pesticide is allowed.

In addition, DPR:

- Maintains a database of pesticide detections in ground water reported to DPR by local, county, and state agencies.<sup>15</sup>
- Prepares an annual report that summarizes monitoring results and specifies actions taken by DPR and the SWRCB for detections from nonpoint agricultural sources and point sources, respectively.

## **IDENTIFYING POTENTIAL GROUND WATER CONTAMINANTS UNDER THE PCPA**

DPR developed several evaluation procedures to estimate a pesticide's potential to pollute ground water; these procedures are described below.

### Using Environmental Fate Data to Predict Pesticide Behavior in the Environment

The PCPA required DPR to establish numerical SNV threshold values for six physical/chemical parameters presumed to correlate to the potential of a pesticide to leach to ground water: water solubility, Koc, hydrolysis half-life, aerobic soil metabolism half-life, anaerobic soil metabolism half-life, and field dissipation half-life. Water solubility and Koc are considered indicators of *mobility* within the soil, while the half-lives of hydrolysis, aerobic and anaerobic soil metabolism and field dissipation are considered indicators of the *persistence* of the pesticide in soil.<sup>16</sup> A pesticide is thought to have the potential to leach to ground water if it is both mobile and persistent, and applied in certain ways.

DPR developed SNV threshold values by evaluating nationwide ground water studies and performing a statistical comparison of the physical/chemical attributes of pesticides detected in ground water as a result of legal agricultural use (called *leachers*), and pesticides not detected (*nonleachers*). Analysis showed that data values for water solubility, hydrolysis half-life, Koc, and anaerobic soil metabolism

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<sup>13</sup> See Appendix B for a list of reporting agencies and a discussion of their role in the PCPA process.

<sup>14</sup> Legal agricultural uses include pesticide applications made in accordance with the registered label.

<sup>15</sup> See Appendix C for more information on the Well Inventory Database.

<sup>16</sup> Although DPR has not yet established an SNV for field dissipation data, these data are used in modeling procedures to assess the leaching potential of new products proposed for registration.

half-life were significantly different for leachers and nonleachers (Wilkerson and Kim, 1986).<sup>17</sup> However, leacher and nonleacher aerobic soil metabolism data values were not significantly different.<sup>18</sup>

After establishing SNV numerical thresholds,<sup>19</sup> DPR scientists used the data to characterize a pesticide's behavior in the environment by comparing SNV values with values for each pesticide. Pesticides that exceed SNVs (and are applied in specific ways) are placed on the GWPL and monitored to determine if they are present in ground water as a result of their legal agricultural use.

### Using Computer Modeling Tools to Predict Pesticide Contamination Potential

In addition to evaluating the contamination potential of agricultural use pesticides through comparison of SNV values, DPR scientists use two models to enhance the effectiveness of DPR's ground water protection program:<sup>20</sup>

- **LEACHM**, the *leaching estimation and chemistry model* (Hutson and Wagenet, 1992) is a pesticide fate and transport modeling tool used to evaluate the leaching potential of a pesticide prior to registration for use in California. The model enables DPR scientists to predict a pesticide's movement through the root zone of a leaching-vulnerable soil (Spurlock, 2000), and determine the probability of occurrence of predicted well water concentrations (Troiano and Clayton, 2009) based upon mobility and persistence data, label information, climate data, and label recommended irrigation practices. If the pesticide is deemed a potential ground water contaminate following this evaluation, the registrant is required to take steps—such as amending the product label or committing to a stewardship program—to mitigate the potential threat to ground water before DPR will approve the pesticide for use in California. If mitigation is not possible, California registration is denied.
- **CALVUL**, the *California vulnerability model* is used to evaluate areas of California that are vulnerable to pesticide contamination based on soil type and depth to ground water. If pesticide use on a given section of land is deemed likely to facilitate ground water contamination, the section is designated a GWPA.<sup>21</sup>

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<sup>17</sup> An evaluation of the SNVs for these properties resulted in the identification of 90 percent of the chemicals found in ground water due to legal agricultural use.

<sup>18</sup> Because the PCPA requires DPR to establish an SNV for each physical/chemical parameter, and because soil metabolism half-life appears to be an ineffective predictor of a pesticide's ground water contamination potential, the SNV for aerobic soil metabolism half-life was set at a value that minimized its importance in the discrimination procedure.

<sup>19</sup> SNV numerical threshold values are reevaluated periodically, often through an evaluation of field dissipation studies. (In these studies, pesticides are applied to bare or cropped fields and soil is sampled at various depths to measure pesticide movement and persistence in the field under "real-world" conditions.)

<sup>20</sup> The data used in these models are maintained in DPR's Pesticide Chemistry Database. The database includes pesticide mobility and persistence data submitted by pesticide registrants.

<sup>21</sup> To use a pesticide regulated as a ground water contaminate in a GWPA, users must obtain a Restricted Materials permit from their County Agricultural Commissioner. These permits specify the enforceable management practices required for use in each type of GWPA. For more information on GWPAs, see Appendix A.

## MONITORING FOR PESTICIDES—PRIORITIZING THE CANDIDATES

Pesticides that are believed to have the potential to contaminate ground water enter the pool of pesticides ranked for annual monitoring.<sup>22</sup> This ranking enables DPR to direct limited resources toward monitoring pesticides that pose the greatest risk to ground water. DPR assigns higher priority to agricultural use pesticides currently registered for use in California that are:

- On the GWPL.<sup>23</sup>
- Reported as detections in ground water by public agencies, such as the SWRCB and CDPH. (See Appendix B for a list of reporting agencies.)
- Believed to have a higher likelihood of contaminating ground water based on computer simulated transport modeling.
- Used intensively or whose use is increasing (coupled with other risk factors such as persistence and mobility in soil).
- Injected into the soil by ground-based application equipment, or applied by chemigation or followed within 72 hours by flood or furrow irrigation.

DPR also assigns a higher priority to pesticides that:

- Have prior detections in California (or nationwide).
- Have not previously been monitored in California.

## RESPONDING TO PESTICIDE DETECTIONS IN GROUND WATER

DPR conducts sampling to confirm detections of agricultural use pesticides, but does not conduct additional sampling if the detected pesticide is: 1) not registered for use in California; 2) reported in error or is an invalid detection due to unacceptable analytical variability; 3) not detected in follow-up samples taken by the reporting agency; 4) detected at a concentration below DPR's Response Threshold (less than 80 percent of DPR's analytical reporting limit); 5) regulated as a ground water contaminant under 3CCR section 6800(a) and detected in a GWPA (where use of the pesticide is regulated); 6) registered for use as a pesticide but also occurs naturally (such as copper); or 7) detected in a private well that DPR does not have permission to sample. DPR will defer sampling and place a pesticide on a "watch list" if the pesticide was detected at less than 80 percent of DPR's analytical reporting limit, or if DPR is unable to develop an analytical method that meets the criteria necessary to validate the detection.

If detections indicate a pesticide's legal agricultural use pollutes ground water, the findings are subject to a public [formal review process](#) to determine if the pesticide's use can continue under modified

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<sup>22</sup> For more information on pesticide monitoring ranking see: Clayton, M. 2011, *Selection of Pesticide Active Ingredients for Future Analytical Method Development and Ground Water Monitoring*. Available at: [http://www.cdpr.ca.gov/docs/emon/pubs/chapreps/analysis\\_memos/ai\\_priorities\\_2011\\_2304-ross.pdf](http://www.cdpr.ca.gov/docs/emon/pubs/chapreps/analysis_memos/ai_priorities_2011_2304-ross.pdf)

<sup>23</sup> DPR samples ground water for pesticides on the GWPL to: 1) determine if pesticides identified as potential contaminants have migrated to ground water as a result of their legal agricultural use; 2) expand Ground Water Protection Areas (GWPA) if additional detections are made; and 3) assess the effectiveness of mitigation measures used in the GWPA.

conditions.<sup>24</sup> If it is determined use can be modified so there is a high probability continued use will not pollute, DPR adds the pesticide to the GWPL and requires applicators to adopt mitigation measures when using the pesticide in GWPAs. Detections of agricultural use pesticides (or their degradates) that do not trigger the formal review process are placed on a “watch list” and tracked by DPR for changes in detection concentration or frequency.<sup>25</sup>

If the detected pesticide is added to the GWPL and regulated as a ground water contaminant under 3CCR section 6800(a)—and the well is located in a GWPA—current regulation of use is believed to constitute an adequate response to new detections unless concentrations are high enough to indicate existing mitigation measures are not adequate to prevent pollution. If the well is *not* located in a GWPA, DPR may establish a GWPA that includes the well site under the following circumstances: 1) the well is in a section of land that is adjacent to an existing GWPA; or 2) the pesticide is detected in two or more wells within a four section area that is not adjacent to an existing GWPA.

#### Areas of Non-Authorization

State law does not authorize DPR to regulate pesticide use when detections in ground water are the result of manufacturing processes, accidental spills/releases, or illegal disposal; DPR refers these detections to SWRCB for further investigation. If pesticides are found in ground water due to a nonagricultural use—such as residential use in urban areas—the detections are reviewed under DPR’s formal pesticide registration [reevaluation](#) process.

#### **ASSESSING THE EFFECTIVENESS OF MITIGATION MEASURES**

In 1999, DPR established a well monitoring network to evaluate baseline pesticide concentrations and to measure the effectiveness of ground water protection regulations. Currently, DPR’s well monitoring network includes 68 shallow, domestic wells located in runoff and leaching GWPAs in Fresno and Tulare counties.<sup>26</sup> Preliminary analysis suggests that regulatory action taken by DPR has resulted in measurable decreases in both detection frequencies and well water concentrations for many regulated pesticides (Garretson, 1999 and 2012).

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<sup>24</sup> Pesticides reviewed under the public review process include aldicarb, atrazine, bentazon, bromacil, diuron, hexazinone, norflurazon, prometon, and simazine. With the exception of aldicarb and hexazinone, it was determined that the agricultural use of these pesticides could be modified so that there would be a high probability that their continued use would not pollute ground water. In 1988, statewide use restrictions were adopted for aldicarb; in 2010, it was determined hexazinone had not polluted or threatened to pollute ground water in the state (based on the low detected concentrations), but continued hexazinone monitoring was recommended to ensure concentrations do not increase.

<sup>25</sup> There are seven registered pesticides and 11 degradates that did not trigger the formal review process.

<sup>26</sup> Sampling by DPR showed that all of the wells in the network contained residues of pesticides that were regulated as ground water contaminants: simazine, bromacil, and diuron.

## **SAMPLING RESULTS**

### **DETECTIONS OF REGISTERED PESTICIDES AND RELATED DEGRADATES**

In 2013, ground water samples were analyzed for one or more of 123 agricultural use pesticides/pesticide degradates collected from wells in 55 counties by DPR and CDPH.<sup>27</sup> Three counties—San Francisco, Sierra and Trinity—were not sampled by any agency in calendar year 2013. Sampling efforts yielded detections of 23 agricultural use pesticides/degradates from nonpoint sources; seven pesticides detected are not registered for use in California.

SWRCB/RWQCB sampling results for point source detections of pesticides, and related remediation and prevention measures, are listed in tables 3 through 5.

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<sup>27</sup> Some exceptions to the “agricultural use” status of the sampled pesticides apply; some industrial use pesticides and pesticides that are no longer—or never were—registered for use in California are included due to the varying monitoring goals of reporting agencies.

**Table 1.** Pesticides and pesticide degradates sampled in calendar year 2013 — nonpoint source monitoring results from all reporting agencies.

Key:  Pesticides detected  Pesticides detected but not registered for use in California

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
1,2-DCP (1,2-Dichloropropane) (propylene dichloride)	5291 33	2370 7	54 5	0 - 0.5	0.36 – 0.98	CDPH MCL – 5 OEHHA PHG – 0.5 USEPA MCL – 5 USEPA MCLG - 0	CDPH
1,2,4-Trichlorobenzene	5288 --	2370 --	54	0 - 0.5	--	CDPH MCL – 5 OEHHA PHG – 5 USEPA MCL – 70 USEPA MCLG – 70 USEPA HAL – 70	CDPH
1,3-D (1,3-dichloropropene) (telone)	5889 --	1505 --	48 --	0 - 0.5	--	CDPH MCL – 0.5 OEHHA PHG – 0.2	CDPH
2,4-D (2,4-dichlorophenoxy-acetic acid)	738 --	587 --	35 --	0 - 10	--	CDPH MCL – 70 OEHHA PHG – 20 USEPA MCL – 70 USEPA MCLG – 70	DPR CDPH
2,4-Dinitrophenol	2 --	2 --	1 --	5	--	---	CDPH
2,4,5-T (2,4,5-trichloro phenoxy acetic acid)	244 --	223 --	27 --	0 - 2	--	USEPA HAL – 70.0	CDPH
2,4,6-trichlorophenol	13 --	7 --	1 --	5	--	---	CDPH
4(2,4-DB) dimethylamine salt	80 --	78 --	14 --	0 - 10	--	---	CDPH
ACET (deisopropyl-atrazine or deethyl-simazine) (degradate of atrazine/simazine)	67 51	67 51	2 2	0.05	0.057 - 1.25	---	DPR
Acetochlor	104 --	62 --	8 --	0 - 0.1	--	---	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Acifluorfen, sodium salt	84 --	67 --	9 --	0 - 1	--	---	CDPH
Acrolein	8 --	8 --	3 --	0	--	---	CDPH
Acrylonitrile	31 --	31 --	7 --	0 - 5	--	---	CDPH
Alachlor	1243 --	965 --	37 --	0 - 1	--	CDPH MCL – 2 OEHHA PHG – 4 USEPA MCL – 2 USEPA MCLG – 0	CDPH
Aldicarb	520 --	401 --	29 --	0 - 3	--	CDPH AAL – 7 USEPA MCL – 3 USEPA MCLG – 1	CDPH
Aldicarb sulfone (degradate)	520 --	401 --	29 --	0 - 4	--	USEPA MCL – 3 USEPA MCLG – 1 USEPA HAL – 7	CDPH
Aldicarb sulfoxide (degradate)	520 --	401 --	29 --	0 - 3	--	USEPA MCL – 4 USEPA MCLG – 1 USEPA HAL – 7	CDPH
Aldrin	449 --	350 --	30 --	0 - 0.08	--	CDPH AAL – 0.002	CDPH
Atrazine	1447 1	1165 1	37 1	0 - 0.5	0.082	CDPH MCL – 1 OEHHA PHG – 0.15 USEPA MCL – 3 USEPA MCLG – 3	DPR CDPH
Azoxystrobin	71 1	71 1	4 1	0.05	0.06	---	DPR

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Azoxystrobin acid (degradate)	71 --	71 --	4 --	0.05	--	---	DPR
Azoxystrobin Z (degradate)	71 --	71 --	4 --	0.05	--	---	DPR
Barban	2 --	1 --	1 --	0	--	---	CDPH
Bensufuron methyl	80 --	71 --	4 --	0.05	--	---	DPR
Bentazon	663 --	512 --	32 --	0 - 2	--	CDPH MCL – 18 OEHPA PHG – 200 USEPA HAL – 200	CDPH
BHC (other than gamma isomer)	133 --	46 --	11 --	0.01 - 0.2	--	---	CDPH
Bispyribac-sodium	80 3	71 2	4 2	0.05	0.05 - 0.1	---	DPR
Bromacil	806 18	606 18	31 2	0 - 10	0.051 - 3.74	USEPA HAL – 70	DPR CDPH
Butachlor	730 --	531 --	31 --	0 - 1	--	---	CDPH
Captan	23 --	22 --	3 --	0.1	--	CDPH ANL – 15	CDPH
Carbaryl	522 --	401 --	29 --	0 - 5	--	CDPH ANL – 700	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Carbofuran	631 --	489 --	33 --	0 - 5	--	CDPH MCL – 18 OEHHA PHG – 1.7 USEPA MCL – 40 USEPA MCLG – 40	CDPH
Carbon disulfide	929 1	327 1	21 1	0.05	0.74	CDPH NL - 160	CDPH
Carbophenothion	23 --	22 --	3 --	0	--	---	CDPH
Chlordane	528 --	421 --	32 --	0 - 0.1	--	CDPH MCL – 0.1 OEHHA PHG – 0.03 USEPA MCL – USEPA MCLG – 0	CDPH
Chlorobenzilate	10 --	10 --	4 --	5	--	---	CDPH
Chloroneb	10 --	10 --	4 --	0.5	--	---	CDPH
Chloroethalonil	172 --	158 --	23 --	0 - 5	--	USEPA HAL – 500	CDPH
Chlorpropham	29 --	27 --	5 --	0	--	---	CDPH
Chlorpyrifos	11 --	11 --	3 --	0 - 1	--	USEPA HAL – 2	CDPH
Chlorthal-dimethyl (dacthal/DCPA)	10 --	10 --	4 --	0.04	--	USEPA HAL – 70.0	CDPH
Chlorthal-dimethyl acid (dacthal degradate)	253 15	165 10	13 3	0 - 2	0.1 - 15	U.S.EPA HAL: 4000	CDPH
Clomazone	80 --	71 --	4 --	0.05	--	---	DPR
Cyanazine	37 --	36 --	5 --	0 - 150	--	---	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
DACT (diaminochlorotriazine) (degradate of simazine)	67	67	2	0.05	0.052 - 8.15	---	DPR
	56	56	2				
Dalapon	624	495	32	0 - 10	12	CDPH MCL – 200 OEHHA PHG – 790 USEPA MCL – 200 USEPA MCLG – 200 USEPA HAL – 200	CDPH
	1	1	1				
DBCP (1,2-dibromo-3-chloropropane)	2863	1181	35	0 – 0.01	0.01 – 1.6	CDPH MCL – 0.2 OEHHA PHG – 0.0017 USEPA MCL – 0.2 USEPA MCLG - 0	CDPH
	1143	208	11				
DDD (dichloro diphenyl dichloro ethane) (degradate of DDT)	41	37	9	0.01 - 0.05	--	---	CDPH
	--	--	--				
DDE (dichloro diphenyl dichloro ethylene) (degradate of DDT)	44	40	10	0.01 - 0.8	--	---	CDPH
	--	--	--				
DDT (dichloro diphenyl trichloro ethane)	41	37	9	0.01 - 0.05	--	---	CDPH
	--	--	--				
DEA (deethyl-atrazine) (degradate of atrazine)	67	67	2	0.05	0.053 - 0.107	---	DPR
	4	4	2				
Diazinon	634	442	28	0 - 2	--	CDPH NL – 1.2 U.S. EPA HAL– 1	CDPH
	--	--	--				
Dicamba	541	423	30	0 - 1.5	--	U.S. EPA HAL – 4000	CDPH
	--	--	--				
Dichlorprop, butoxyethanol ester	54	52	13	0 - 1	--	---	CDPH
	--	--	--				
Dieldrin	390	322	30	0 - 0.02	--	CDPH AAL – 0.002	CDPH
	--	--	--				

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Dimethoate	739 --	539 --	31 --	0 - 10	--	CDPH AAL – 1	CDPH
Dinoseb	638 --	498 --	32 --	0 - 2	--	CDPH MCL – 7 OEHHA PHG – 14 USEPA MCL – 7 USEPA MCLG – 7	CDPH
Diphenamid	27 --	26 --	4 --	100	--	---	CDPH
Diquat dibromide	601 2	466 2	31 2	0 - 4	2.2 - 4.5	CDPH MCL – 20 OEHHA PHG – 15 USEPA MCL – 20 USEPA MCLG – 20	CDPH
Disulfoton	27 --	26 --	4 --	0	--	---	CDPH
Diuron	89 9	84 9	7 2	0 - 1	0.055 - 0.367	---	DPR CDPH
DSMN (desmethyl norflurazon) (degradate of norflurazon)	67 28	67 28	2 2	0.05	0.055 - 0.645	---	DPR
EDB (ethylene dibromide)	2471 40	1149 8	36 3	0 - 0.02	0.01 - 0.19	CDPH MCL – 0.05 OEHHA PHG – 0.01 USEPA MCL – 0.05 USEPA MCLG – 0	CDPH
Endosulfan	82 --	37 --	9 --	0.01 - 0.05	--	---	CDPH
Endosulfan sulfate (degradate)	41 --	37 --	9 --	0.01 - 0.05	--	---	CDPH
Endothall	507 --	411 --	28 --	0 - 45	--	CDPH MCL – 100 OEHHA PHG – 580 USEPA MCL – 100 USEPA MCLG – 100 USEPA HAL – 50.0	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
<b>Endrin</b>	533 --	425 --	32 --	0 - 0.1	--	CDPH MCL – 2 OEHHA PHG – 1.8 USEPA MCL – 2 USEPA MCLG – 2 USEPA HAL – 2	CDPH
<b>Endrin aldehyde</b>	41 --	37 --	9 --	0.01 - 0.05	--	---	CDPH
<b>EPTC (S-ethyl-dipropylthiocarbamate)</b>	110 --	70 --	7 --	0 - 0.1	--	---	CDPH
<b>Ethion</b>	2 --	2 --	1 --	0	--	---	CDPH
<b>Fluometuron</b>	2 --	1 --	1 --	0	--	USEPA MCL – 0 USEPA HAL – 90	CDPH
<b>Glyphosate</b>	429 --	335 --	29 --	0 - 25	--	CDPR MCL – 700 OEHHA PHG – 900 USEPA MCL – 700 USEPA MCLG – 700	CDPH
<b>Halosulfuron-methyl</b>	80 --	71 --	4 --	0.05	--	---	DPR
<b>Heptachlor</b>	507 --	412 --	32 --	0 - 0.01	--	CDPH MCL – 0.01 OEHHA PHG – 0.008 USEPA MCL – 0.4 MCLG – 0	CDPH
<b>Heptachlor epoxide</b>	507 --	412 --	32 --	0 - 0.01	--	CDPH MCL – 0.01 OEHHA PHG – 0.006 USEPA MCL – 0.2 USEPA MCLG – 0	CDPH
<b>Hexachlorobenzene</b>	608 --	469 --	32 --	0 - 0.5	--	---	CDPH
<b>Hexazinone</b>	67 --	67 --	2 --	0.05	--	U.S. EPA HAL – 400	DPR

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Hydroxycarbofuran (degradate)	520 --	401 --	29 --	0 - 3	--	---	CDPH
Lindane (gamma-BHC)	600 --	460 --	32 --	0 - 0.2	--	CDPH MCL – 0.2 OEHHA PHG – 0.032 U.S. EPA MCL – 0.2 U.S. EPA MCLG – 0.2	CDPH
Linuron	7 --	3 --	2 --	0	--	---	CDPH
Malathion	176 --	93 --	2 --	0	--	CDPH AAL – 160 U.S. EPA HAL – 500	CDPH
MCPA, dimethylamine salt	2 --	2 --	2 --	10	--	---	CDPH
MCPP 2-(4-chloro-2-methylphenoxy) propionic acid	2 --	2 --	2 --	10	--	---	CDPH
Methiocarb	337 --	244 --	19 --	0 - 5	--	---	CDPH
Methomyl	522 --	401 --	29 --	0 - 2	--	U.S. EPA HAL – 200	CDPH
Methoxychlor	598 --	458 --	32 --	0 - 10	--	CDPH MCL – 30 OEHHA PHG – 0.09 U.S. EPA HAL – 40 U.S. EPA MCL – 40 U.S. EPA MCLG – 40	CDPH
Methyl bromide	2899 1	1489 1	53 1	0 - 2.5	0.67	U.S. EPA HAL – 10	CDPH
Methyl parathion	176 --	93 --	2 --	0	--	---	CDPH
Metolachlor	742 --	542 --	31 --	0 - 10	--	U.S. EPA HAL – 700	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Metribuzin	741 --	541 --	31 --	0 - 1	--	---	CDPH
Molinate	1094 --	836 --	37 --	0 - 2	--	CDPH MCL – 20 OEHHA PHG – 1	DPR CDPH
Monuron	2 --	1 --	1 --	0	--	---	CDPH
Naphthalene	3515 --	1605 --	50 --	0 - 0.5	--	CDPH NL – 17 U.S. EPA HAL – 100	CDPH
Neburon	2 --	1 --	1 --	0	--	---	CDPH
Norflurazon	67 14	67 14	2 2	0.05	0.054 - 0.407	U.S. EPA HAL – 30[10]	DPR
Ortho-dichlorobenzene	5289 --	2370 --	54 --	0 - 0.5	--	CDPH MCL – 600 OEHHA PHG – 600 U.S. EPA MCL – 600 U.S. EPA MCLG – 600 U.S. EPA HAL – 600	CDPH
Orthosulfamuron	80 3	71 2	4 2	0.05 - 0.1	0.05 - 0.1	---	DPR
Oxamyl	604 --	473 --	31 --	0 - 20	--	CDPH MCL – 50 OEHHA PHG – 26 U.S. EPA MCL – 200 U.S. EPA MCLG – 200	CDPH
Paraquat dichloride	5 --	5 --	2 --	20	--	U.S. EPA HAL – 30	CDPH
Parathion / Ethyl parathion	176 --	93 --	2 --	0.02	--	---	CDPH
PCNB (pentachloronitrobenzene)	2 --	2 --	1 --	0.1	--	---	CDPH
Penoxsulam	80 2	71 1	4 1	0.05	0.06	---	DPR

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
Permethrin	10 --	10 --	4 --	0.2	--	---	CDPH
Permethrin, other related compounds	10 --	10 --	4 --	0.2	--	---	CDPH
Picloram	623 --	494 --	32 --	0 - 1	--	CDPH MCL – 500 OEHHA PHG – 500 U.S. EPA MCL – 500 U.S. EPA MCLG – 500	CDPH
Prometon	294 --	209 --	12 --	0 - 0.5	--	U.S. EPA HAL – 400	DPR CDPH
Prometryn	296 --	211 --	22 --	0 - 2	--	---	CDPH
Propachlor	776 --	560 --	30 --	0 - 1	--	CDPH NL – 90	CDPH
Propanil	80 --	71 --	4 --	0.05	--	---	DPR
Propham	2 --	1 --	1 --	0	--	U.S. EPA HAL – 100	CDPH
Propiconazole	80 --	71 --	4 --	0.05	--	---	DPR
Propoxur	339 --	245 --	20 --	0 - 5	--	U.S. EPA HAL – 3	CDPH
Siduron	2 --	1 --	1 --	0	--	---	CDPH
Silvex	624 --	495 --	32 --	0 - 1	--	CDPH MCL – 50 OEHHA PHG – 25 USEPA MCL – 50 USEPA MCLG – 50 USEPA HAL – 50	CDPH

Pesticide or Degradate	Samples Taken	Wells Sampled	Counties Sampled	‡Reporting Limit (ppb)	Detected Concentration Range (ppb)	†Drinking Water Quality Standards or Advisories (ppb)	Reporting Agency
	Positive Samples	Wells with Detections	Counties with Detections				
<b>Simazine</b>	1449 39	1167 39	37 2	0 - 1	0.051 - 0.327	CDPH MCL – 4 OEHHA PHG – 4 U.S. EPA MCL – 4 U.S. EPA MCLG – 4	DPR CDPH
<b>Terbacil</b>	124 --	84 --	9 --	0 - 0.1	--	---	CDPH
<b>Terbutryn</b>	11 --	10 --	3 --	0.5	--	---	CDPH
<b>Tetrachloroethane</b>	5287 1	2371 1	54 1	0 - 0.5	0.8	---	CDPH
<b>Thiobencarb</b>	1391 --	1018 --	38 --	0 - 1	--	CDPH MCL – 70 OEHHA PHG – 70	DPR CDPH
<b>Toxaphene</b>	535 --	426 --	32 --	0 - 1	--	CDPH MCL – 3 OEHHA PHG – 0.03 U.S. EPA MCL – 3 U.S. EPA MCLG – 0	CDPH
<b>Triclopyr, triethylamine salt</b>	80 --	71 --	4 --	0.05	--	---	DPR
<b>Trifluralin</b>	163 --	152 --	22 --	0 - 0.04	--	U.S. EPA HAL – 10	CDPH
<b>Xylene</b>	5277 5	2371 5	54 4	0 - 1.5	0.58 - 8.6	CDPH MCL – 1,750 OEHHA PHG – 1,800 U.S. EPA MCL – 10,000 U.S. MCLG – 10,000	CDPH

‡ Some detection values listed in this table are below the reporting limit. Each reporting agency determines the value they will report, regardless of “accepted” reporting limits. For instance, the SWRCB may report *estimated values*, which can be below reporting limits.

† Drinking water quality standards: AAL: archived advisory level; HAL: health advisory level; MCL: maximum contaminant level; MCLG: maximum contaminant level goal; NL: notification level; PHG: public health goal.

## RESPONSES TO PESTICIDE DETECTIONS – DPR, SWRCB, RWQCBs

As required under the PCPA (FAC section 13152[e][4]), this section of the annual report describes actions taken by DPR (Table 2) and the SWRCB/RWQCBs (tables 3 - 5) to mitigate the detection of pesticides found in ground water during calendar year 2013.

### DPR RESPONSE TO DETECTIONS

Of the 23 agricultural use pesticides/degradates detected in 2013 from nonpoint sources, nine are pesticides (or degradates of the parent compound) listed in 3CCR 6800(a) and regulated as ground water contaminants within GWPAs; four pesticides/degradates are listed in 3CCR 6800(b) as potential ground water contaminants, seven are not registered for use in California, and three are not listed under 3CCR 6800(a) or (b) (Table 2).

**Table 2.** DPR Response to pesticides and pesticide degradates detected in ground water in calendar year 2013.

Pesticide	Wells with Detections	Registration Status / DPR Detection Response
1,2-Dichloropropane (1,2-DCP) (propylene dichloride)	7	Not registered for use in California.
ACET (deisopropyl-atrazine or deethyl-simazine) (atrazine/simazine degradate)	51	<sup>†</sup> Degradate of active ingredients on the GWPL: atrazine/simazine, (3CCR 6800[a]) All detections were made in GWPAs; pesticide applications in GWPAs are made under the authority of the <sup>‡</sup> <b>Restricted Materials</b> permit program.
Atrazine	1	On the GWPL (3CCR 6800[a]). Detection was in a GWPA.
Azoxystrobin	1	On the GWPL (3CCR 6800[b]). DPR is evaluating this detection under study GW13.
Bispyribac-sodium	2	On the GWPL, 3CCR 6800(b). DPR is evaluating these detections as part of study GW13.
Bromacil	18	On the GWPL (3CCR 6800[a]). All detections were in GWPAs.
Carbon disulfide	1	Not registered for use in California.

Pesticide	Wells with Detections	Registration Status / DPR Detection Response
Chlorthal-dimethyl acid (dacthal degradates)	10	The parent pesticide is not listed on the GWPL. DPR no longer performs field studies for dacthal degradates unless they approach health levels (U.S. EPA HAL of 4,000 ppb).
DACT (simazine degradate)	56	Degradate of active ingredient on the GWPL: simazine, (3CCR 6800[a]). All detections were in GWPAs.
Dalapon	1	Not registered for use in California.
DBCP (1,2-dibromo-3-chloropropane)	208	Not registered for use in California.
DEA (deethyl-atrazine) (atrazine degradate)	4	Degradate of active ingredient on the GWPL: atrazine, (3CCR 6800[a]). All detections were in GWPAs.
Diquat dibromide	2	On the GWPL (3CCR 6800[b]). CDPH resampled the detection sites and failed to find diquat dibromide in subsequent samples.
Diuron	9	On the GWPL (3CCR 6800[a]). All detections were in GWPAs.
DSMN (desmethyl-norflurazon) (degradate of norflurazon)	28	Degradate of active ingredient on the GWPL: norflurazon, (3CCR 6800[a]). All detections were in GWPAs.
Ethylene dibromide (EDB)	8	Not registered for use in California.
Methyl bromide	1	This pesticide is not listed on the GWPL, but is regulated as a California Restricted Material. CDPH will retest this well according to established policy.
Norflurazon	14	On the GWPL (3CCR 6800[a]). All detections were in GWPAs.
Orthosulfamuron	2	This pesticide is not on the GWPL. DPR is evaluating these detections under study GW13.
Penoxsulam	1	On the GWPL, 3CCR 6800(b). DPR is evaluating this detection under study GW13.

Pesticide	Wells with Detections	Registration Status / DPR Detection Response
Simazine	39	On the GWPL (3CCR 6800[a]). All detections were in GWPAs.
Tetrachloroethane	1	Not registered for use in California.
Xylene	5	Not registered for use in California.

† Pesticides on the Ground Water Protection List (GWPL) 3CCR 6000(a) and (b) are those labeled for agricultural, outdoor institutional, or outdoor industrial use that have the potential to pollute ground water. Sublist 6800(a) includes seven agricultural herbicides—atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine—that are regulated as ground water contaminants. Sublist 6800(b) includes 101 pesticides that have the potential to become ground water contaminants based on their mobility, persistence and legal uses.

If the detected pesticide is regulated as a ground water contaminant under 3CCR 6800(a)—and the well is located in a GWPA where the use of the pesticide is regulated—current regulation of use is believed to constitute an adequate response to new detections *unless* concentrations are high enough to indicate existing mitigation measures are not adequate to prevent *pollution*. (Pollution is defined in FAC section 13142 as “...the introduction into the groundwaters of the state...a pesticide above a level, with an adequate margin of safety, that does not cause adverse health effects.”)

‡ DPR does not investigate detections that occur within GWPAs for pesticides (or their degradates) that are on the 6800(a) list of known ground water contaminants.<sup>28</sup> Applications of these pesticides in GWPAs are managed by County Agricultural Commissioners via the **Restricted Materials** permit program. This program requires users to modify their pesticide use practices based on soil properties of the GWPA.

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<sup>28</sup> Schuette, J. 2004. *Summary of Program Policies Specifying When the Director Will Not Determine if a Detection Was the Result of Legal, Agricultural Use* (“N” Memorandum). Department of Pesticide Regulation, Environmental Monitoring Branch. December 1, 2004.

## **SWRCB AND RWQCB RESPONSE TO DETECTIONS**

As required by the PCPA (FAC section 13152[e][4]), this section of the report—prepared by SWRCB and the RWQCBs—describes recent actions taken to prevent pesticides from point sources from migrating to California’s ground water.

### State Water Resources Control Board

State Water Resources Control Board staff participated in the following activities:

- Regularly attended meetings sponsored by DPR, including the interagency Pesticide Registration and Evaluation Committee and Pest Management Advisory Committee meetings.
- Participated in ongoing consultations with DPR staff, University of California scientists, and pesticide manufacturers to design monitoring studies and Best Management Practices.
- Participated in discussions with United States 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 with DPR.
- In coordination with the USGS and the Lawrence Livermore National Laboratory (LLNL), the SWRCB is implementing the Groundwater Ambient Monitoring and Assessment Program (GAMA). To date, the GAMA Priority Basins Project has sampled over 2,300—mostly public water supply wells—for various chemicals, including pesticides, herbicides and their degradates.

Regional Water Quality Control Boards

The information below summarizes by county the preventative monitoring, assessment, cleanup, and other actions taken by the nine RWQCBs to address pesticide contamination of ground water.

During the period from January 2013 to December 2013, no new pesticide detections were reported in ground water quality monitoring reports submitted by the RWQCBs. Regions 5, 6, and 8 reported preventive or cleanup actions (tables 3 - 5).

*Region 5 – Central Valley Regional Water Quality Control Board – Fresno*

**Table 3.** Remediation and preventative actions taken by the RWQCB, Central Valley (Region 5, Fresno) in 2013.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
<b>Fresno</b>	CPS (PureGro), Oxalis	1,2-DCP 1,2,3-Trichloropropane (1,2,3-TCP) nitrate	Approximately 1,950 cubic yards of impacted soil excavated and disposed of off-site in the Western Area of the site. Horizontal and vertical injection wells installed in excavated area for possible use in future groundwater remediation. Additional downgradient monitoring wells are being installed to further define downgradient limits of groundwater plume. Feasibility study for remediation of groundwater is being prepared.
<b>Kern</b>	Western Farm Service, Delano Facility	DDT Toxaphene Dinoseb Dicamba	Additional downgradient monitoring wells being installed for further plume definition. Injection and monitoring wells for pilot study have been installed. Pilot study being prepared to determine feasibility of in-situ injection treatment to reduce pesticide concentrations in groundwater. Pilot study should commence by the end of 2014.
	CPS Bakersfield Norris Rd	1,2-DCP 1,2,3-TCP	Semi-annual monitoring is performed to assess whether further plume definition is warranted and what remedial options, if required, are appropriate for the site.
<b>Madera</b>	Western Farm Service, Inc., Madera Facility	Dinoseb DBCP Dieldrin	Long-term monitoring continues, and replacement of dry monitoring wells is in progress.
<b>Tulare</b>	Crop Prod. Services - Cutler	DBCP 1,2,3-TCP nitrate	Additional Site Assessment Work Plan was implemented. Waiting on submittal of summary report to determine if more assessment is required, or if remediation is needed.

Region 6 – Lahontan Regional Water Quality Control Board

**Table 4.** Preventative actions taken by the RWQCB, Lahontan (Region 6) in 2013.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
<b>El Dorado</b>	Lake Tahoe Basin Weed Coordinating Group (Interagency)	Triclopyr Aminopyralid Rimsulfuron	Preventative actions taken by Water Board under agreement with the Lake Tahoe Basin Weed Coordinating Group governing terrestrial herbicide applications in the Lake Tahoe Basin for control of noxious and invasive weeds.
	USFS-Lake Tahoe Basin Management Unit (LTBMU)	Aminopyralid Chlorsulfuron Glyphosate Aminopyralid and Triclopyr premix	Preventative actions taken by Water Board under agreement with the Lake Tahoe Basin Weed Coordinating Group governing terrestrial herbicide applications in the Lake Tahoe Basin for control of noxious weeds.
<b>San Bernardino</b>	Former George Air Force Base	Dieldrin	Groundwater monitoring wells are being sampled to continue to track contaminant locations and concentration. No municipal supply wells have been found to contain dieldrin.
	China Lake Naval Weapons Center	DDD DDE DDT Dieldrin Chlordane	Groundwater is monitored, and is not used for drinking water in the area east of China Lake Playa.
<b>Placer</b>	Resort at Squaw Creek Golf Course	Clopyralid	Key wells, up-gradient, within the course, and downgradient, are being monitored with a focus on detection of nutrients and pesticides in the shallow aquifer prior to affecting any potential municipal supplies located nearby.
	Lake Tahoe Basin Weed Coordinating Group (Interagency)	Triclopyr Aminopyralid Rimsulfuron	Preventative actions taken by Water Board under agreement with the Lake Tahoe Basin Weed Coordinating Group governing terrestrial herbicide applications in the Lake Tahoe Basin for control of noxious and invasive weeds.
	USFS-Lake Tahoe Basin Management Unit (LTBMU)	Aminopyralid Chlorsulfuron Glyphosate Aminopyralid and Triclopyr premix	Preventative actions taken by Water Board under agreement with the Lake Tahoe Basin Weed Coordinating Group governing terrestrial herbicide applications in the Lake Tahoe Basin for control of noxious weeds.
<b>All counties in Region 6</b> (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 (revised waiver adopted by the Regional Board in April 2014), applicants must notify the Regional Board at least 30 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.

*Region 8 – Santa Ana Regional Water Quality Control Board*

**Table 5.** Preventative actions taken by the RWQCB, Santa Ana (Region 8) in 2013.

COUNTY	SITE	PESTICIDE	PREVENTION ACTION
Orange	Essex Portfolio LP (Former Great Lakes Chemical Corporation, Irvine)	EDB	Because of decreasing concentrations of groundwater contamination in some areas of the site, some of the Multi-Port Extraction (MPE) points and all of the extraction wells have also been turned off. One monitoring well is detecting EDB at concentration of an approximately 130 micrograms per liter (µg/L). Quarterly groundwater monitoring for on-site and off-site wells continues.

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# APPENDIX A

## GROUND WATER PROTECTION AREAS (GWPA)

Ground Water Protection Areas (GWPA)s are one square mile sections of land where use of specific pesticides<sup>29</sup> is regulated through implementation of mandatory mitigation measures. Approximately 2.4 million acres are designated GWPA)s (Figure A-1).

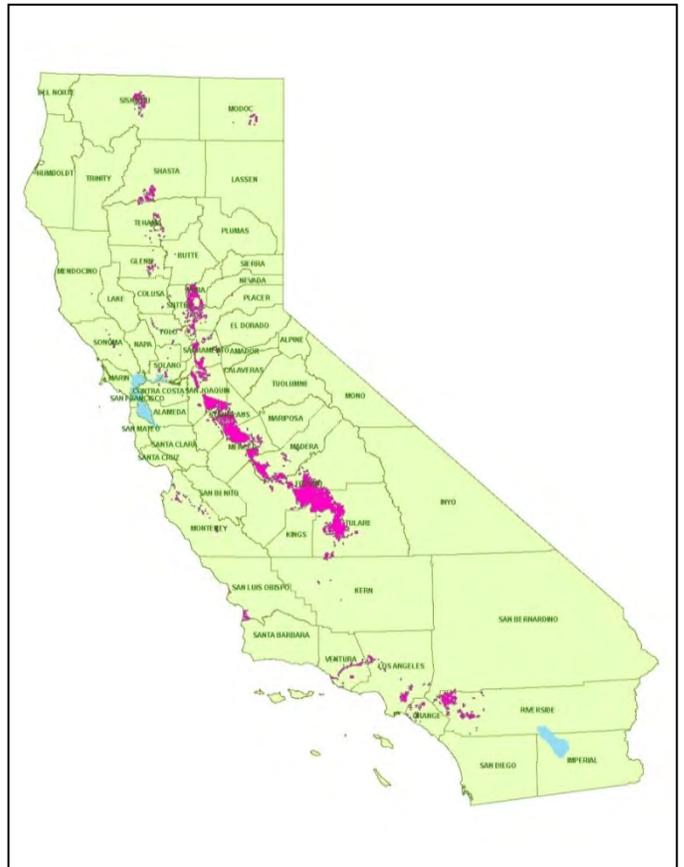
By 2004, establishment of GWPA)s was based largely upon modeling efforts that used soil type and depth to ground water data to identify areas vulnerable to ground water contamination, although all of the former (and draft) Pesticide Management Zones<sup>30</sup> developed by DPR from 1989 to 1999 were also designated GWPA)s.

### History of PMZ and GWPA Development

Early research conducted by DPR scientists enabled DPR to identify two important soil conditions that contributed to ground water contamination: 1) coarse-textured soils where *leaching* is the predominant contamination pathway (Troiano et al., 1993); and 2) hardpan soil layers where *runoff* from the application site into dry wells or into areas with high infiltration rates is the predominant contamination pathway (Braun and Hawkins, 1991). Depth to ground water was identified as another factor that contributed to contamination when it was discovered pesticide detections were more frequent in areas of shallow ground water (Troiano et al., 1999).

Based on this research, the empirical model (CALVUL) was used to identify areas vulnerable to ground water contamination by using depth to ground water and soils data to identify what are now known as GWPA)s.<sup>31</sup>

**Figure A-1.** Ground Water Protection Areas.



<sup>29</sup> These pesticides include those listed in 3CCR section 6800[a]: atrazine, bentazon, bromacil, norflurazon, prometon, simazine and diuron (except for products with less than 7% diuron that are applied to foliage).

<sup>30</sup> A PMZ was defined as a square mile section of land sensitive to ground water pollution as indicated by detections of one or more pesticides listed in 3CCR section 6800(a).

<sup>31</sup> GWPA)s are classified in regulation as sections of land characterized by either coarse-textured or hardpan soils with a ten-year spring-averaged annual estimated depth to ground water of 70 feet or less.

### Criteria for GWPA Designation

GWPAs for leaching or runoff pathways were established based on the following criteria (Troiano et al., 2000; Marade and Troiano, 2000):

- If a section of land had an estimated depth to ground water of 70 feet or less and the predominant soil type was characterized as coarse textured, it was identified as a leaching GWPA. If the section had an estimated depth to ground water of 70 feet or less and the soil contained a hardpan layer, it was identified as a runoff GWPA.
- If a section had both leaching and runoff characteristics (coarse-textured soil with a hardpan layer), it was identified as a leaching GWPA if the mean hardpan depth was greater than 48 inches, or as a runoff GWPA if the mean hardpan depth was less than 48 inches.
- If a section did not meet the above criteria but was previously identified as a Pesticide Management Zone (PMZ), it was classified as a leaching or runoff GWPA as follows:
  - If the predominant soil in the section was coarse-textured it was classified as a leaching GWPA, otherwise the section was classified as a runoff GWPA.
  - If the PMZ lacked soil survey data it was assigned a GWPA pathway based on soil condition information provided by local agencies. DPR also assessed agronomic practices in the section to determine whether leaching or runoff was the apparent pathway for recharge of water to ground water.

DPR establishes new GWPAs based on the following criteria:

- Identification of vulnerable areas using the CALVUL modeling approach.
- Detections of AIs listed in 3CCR section 6800(a) or their degradation products in:
  - One well in a section that is adjacent to a GWPA; or
  - Two or more wells within a four section area that is not adjacent to an existing GWPA.

Utilization of the CALVUL model enabled DPR to increase the area under regulation from 313,000 acres (the acreage identified as PMZs) to about 2.4 million acres (PMZs plus GWPAs). Currently, there are 1,673 sections of land (1.1 million acres) identified as leaching GWPAs, where the mitigation measures are designed to prevent over-irrigation, and 2,015 sections of land (1.3 million acres) identified as runoff GWPAs, where mitigation measures are designed to either prevent or manage offsite movement of contaminated runoff. Fifty-four sections of land (35,000 acres) are identified as partial leaching and partial runoff GWPAs.

### Pesticide Use in GWPAs

Users of a 3CCR section 6800(a) listed pesticide in a GWPA are required to modify their pesticide use practices based on predominant soil properties of the GWPA. Users must obtain a [Restricted Materials](#) permit from their County Agricultural Commissioner (CAC); the permit specifies the enforceable management practices required in each type of GWPA. The permittee must notify the CAC within 24 to 48 hours prior to application to give the CAC an opportunity to inspect the site. Pre-application site inspections allow CACs to determine whether the use modifications are protective and—if they are not—to revise the permit appropriately. CACs also conduct application inspections to ensure compliance with permit and pesticide label requirements.<sup>32</sup>

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<sup>32</sup> More information on how DPR and CACs regulate the use of ground water contaminants in vulnerable areas is available at: <[http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp\\_id\\_gwpa.htm](http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_id_gwpa.htm)>.

## APPENDIX B

### PRINCIPAL SAMPLING AGENCIES

While approximately 45 agencies submit well monitoring data to DPR, the primary sampling agencies are CDPH, SWRCB and DPR. Each agency that participates in ground water sampling for pesticides does so to satisfy their unique regulatory responsibilities. These specific responsibilities define for each agency the pesticides selected for monitoring, the type and sensitivity of laboratory analyses, the well types sampled, sampling locations, and sampling frequency. For instance, DPR primarily samples shallow, domestic wells in areas where agricultural pesticides are used; CDPH requires public water systems to monitor drinking water supply wells for an established list of pesticides and degradates, (regardless of whether they were used near wells); SWRCB assesses the overall quality of ground water used for consumption (regardless of the frequency or intensity of pesticide use near target wells).

#### **CALIFORNIA DEPARTMENT OF PUBLIC HEALTH**

CDPH is responsible for enforcement of federal and California Safe Drinking Water acts to ensure delivery of safe drinking water. To meet this goal, CDPH oversees approximately 7,500 [public water systems](#) and establishes health protective drinking water standards. These standards, known as [maximum contaminant levels](#) (MCL), are developed by evaluating not only the health risks presented by a chemical, but by assessing the technical and economic factors related to its use (such as detection capabilities, and treatment efficacy and cost). CDPH establishes a contaminant's MCL at a level as close to the [public health goal](#)<sup>33</sup> (PHG) established by the Office of Environmental Health Hazard Assessment (OEHHA) as is technically and economically feasible, placing primary emphasis on the protection of public health (see the [MCL process](#)).

CDPH compiles and evaluates drinking water quality data collected by public water systems and—as required by the PCPA—submits pesticide monitoring results to DPR for inclusion in this annual report.<sup>34</sup>

#### **STATE WATER RESOURCES CONTROL BOARD**

The SWRCB monitors ground water as a function of its Groundwater Ambient Monitoring and Assessment Program (GAMA).<sup>35</sup> This program is designed to improve ground water quality and increase public availability of ground water quality information. The SWRCB expanded the GAMA Program following implementation of the [Groundwater Quality Monitoring Act of 2001](#) (Part 2.76 [commencing with Section 10780], Division 6 of the Water Code). This law resulted in a [publicly accepted plan](#) to monitor and assess “priority basins”—basins that account for over 90 percent of ground water used in California. The GAMA Program includes four projects:

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<sup>33</sup> Public Health Goals are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods.

<sup>34</sup> For more information about drinking water safety and regulation in California, go to the CDPH Web site at [www.cdph.ca.gov](http://www.cdph.ca.gov).

<sup>35</sup> For more information about SWRCB's GAMA Program, go to [www.swrcb.ca.gov](http://www.swrcb.ca.gov)

- The [GAMA Priority Basin Project](#) requires monitoring for dozens of chemicals at very low detection limits. Monitoring and assessments of priority basins are to be completed every ten years, with trend monitoring every three years. SWRCB is collaborating with the United States Geological Survey (USGS) and Lawrence Livermore National Laboratory (LLNL) to implement the GAMA Priority Basin Project.
- The [GAMA Domestic Well Project](#) entails sampling in several county-focused areas in coordination with local environmental health departments. It also includes an education component that provides information about water quality issues to domestic well users.
- The [GAMA Special Studies Project](#) partners with LLNL to conduct ground water studies to evaluate nitrate, wastewater, and ground water recharge issues. LLNL scientists use tools that include Tritium-Helium age dating and computer modeling. The University of California, Davis, also contributes to GAMA Special Studies.
- The [GeoTracker GAMA](#) information management system enables users (scientists, regulators, water managers, educators and the public) to access millions of data records from the SWRCB/RWQCBs, Department of Water Resources, CDPH, DPR and USGS. GeoTracker GAMA provides access to a Google map-based database that provides the results of ground water quality testing, ground water level evaluations, environmental monitoring well logs, and links to published reports.

#### **DEPARTMENT OF PESTICIDE REGULATION**

DPR samples ground water as a function of its Ground Water Protection Program established under the PCPA. (See the **Background** section of this report for a detailed description of DPR's program.)

#### **OTHER SAMPLING AGENCIES**

Other agencies that may also sample for pesticides in the environment include the U.S. Environmental Protection Agency and state agencies such as the Air Resources Board and Department of Fish and Wildlife.

## APPENDIX C

### THE WELL INVENTORY DATABASE

**Figure C-1.** Wells in the DPR Well Inventory Database.

In the early 1980s, DPR established the Well Inventory Database (under the authority granted in FAC section 13152[c]) and began collecting data from public agencies that sampled ground water for pesticides. The database currently contains over two million sample analyses, including monitoring data from over 25,000 public and private wells sampled for over 360 different pesticides and pesticide degradates (Figure C-1). Although approximately 45 agencies have submitted data for inclusion in the database, most of the data comes from the CDPH, SWRCB, and DPR.

The Well Inventory Database includes the following information:

- State well numbers assigned by the Department of Water Resources
- Well location, including latitude and longitude, township, range and section
- Well type
- Sampling agency
- Analyzing laboratory
- Sample date and type (e.g., initial or confirmation sample)
- Chemical analyzed
- Sample results, in parts per billion (ppb)

Well sampling data can be obtained by contacting DPR's Ground Water Protection Program at 916-324-4039. Due to privacy concerns, DPR does not release well owner information or the specific locations of sampled wells.



## APPENDIX D

### WELL SAMPLING RESULTS SUMMARIZED BY COUNTY AND PESTICIDE

The results of wells sampled for pesticides and pesticide degradates in each county sampled are listed in this appendix. Three counties—San Francisco, Sierra and Trinity—were not sampled by any agency in calendar year 2013.

Each county table lists the pesticides/degradates that were sampled, the number of wells sampled for each pesticide/degradate, the number of wells with detections, and the detected concentration in parts per billion (ppb). A well with more than one pesticide or pesticide degradate detected will appear more than once in a county table.

The links in the table below allow you to navigate to a specific county. Clicking on the county name at the top of each county table will take you back to this menu.

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<a href="#">Alameda</a>	<a href="#">Marin</a>	<a href="#">San Mateo</a>
<a href="#">Alpine</a>	<a href="#">Mariposa</a>	<a href="#">Santa Barbara</a>
<a href="#">Amador</a>	<a href="#">Mendocino</a>	<a href="#">Santa Clara</a>
<a href="#">Butte</a>	<a href="#">Merced</a>	<a href="#">Santa Cruz</a>
<a href="#">Calaveras</a>	<a href="#">Modoc</a>	<a href="#">Shasta</a>
<a href="#">Colusa</a>	<a href="#">Mono</a>	<a href="#">Sierra</a>
<a href="#">Contra Costa</a>	<a href="#">Monterey</a>	<a href="#">Siskiyou</a>
<a href="#">Del Norte</a>	<a href="#">Napa</a>	<a href="#">Solano</a>
<a href="#">El Dorado</a>	<a href="#">Nevada</a>	<a href="#">Sonoma</a>
<a href="#">Fresno</a>	<a href="#">Orange</a>	<a href="#">Stanislaus</a>
<a href="#">Glenn</a>	<a href="#">Placer</a>	<a href="#">Sutter</a>
<a href="#">Humboldt</a>	<a href="#">Plumas</a>	<a href="#">Tehama</a>
<a href="#">Imperial</a>	<a href="#">Riverside</a>	<a href="#">Trinity</a>
<a href="#">Inyo</a>	<a href="#">Sacramento</a>	<a href="#">Tulare</a>
<a href="#">Kern</a>	<a href="#">San Benito</a>	<a href="#">Tuolumne</a>
<a href="#">Kings</a>	<a href="#">San Bernardino</a>	<a href="#">Ventura</a>
<a href="#">Lake</a>	<a href="#">San Diego</a>	<a href="#">Yolo</a>
<a href="#">Lassen</a>	<a href="#">San Francisco</a>	<a href="#">Yuba</a>
<a href="#">Los Angeles</a>	<a href="#">San Joaquin</a>	
<a href="#">Madera</a>	<a href="#">San Luis Obispo</a>	

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<a href="#">Alameda</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	23		
	1,2-DCP	23		
	1,3-D (telone)	15		
	2,4-D	15		
	Alachlor	15		
	Atrazine	15		
	Bentazon	15		
	Carbofuran	15		
	Chlordane	17		
	Dalapon	15		
	DBCP	18		
	Dinoseb	15		
	Diquat dibromide	15		
	Endothall	15		
	Endrin	15		
	Ethylene dibromide	18		
	Glyphosate	15		
	Heptachlor	15		
	Heptachlor epoxide	15		
	Hexachlorobenzene	15		
	Lindane (gamma-BHC)	15		
	Methoxychlor	15		
	Methyl bromide	3		
	Molinate	15		
	Naphthalene	8		
	Ortho-dichlorobenzene	23		
	Oxamyl	15		
	Picloram	15		
	Silvex	15		
	Simazine	15		
	Tetrachloroethane	23		
	Thiobencarb	15		
	Toxaphene	17		
	Xylene	23		

<a href="#">Alpine</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	1,3-D (telone)	1		
	Methyl bromide	1		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Tetrachloroethane	1		
	Xylene	1		

<u>Amador</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	1,3-D (telone)	1		
	DBCP	1		
	Ethylene dibromide	1		
	Methyl bromide	1		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Tetrachloroethane	1		
	Xylene	1		

<u>Butte</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	48		
	1,2-DCP	48		
	1,3-D (telone)	9		
	2,4,5-T	2		
	2,4-D	27		
	4(2,4-DB), dimethylamine salt	2		
	Acifluorfen, sodium salt	2		
	Alachlor	1		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Atrazine	2		
	Azoxystrobin	24		
	Azoxystrobin acid (degradate)	24		
	Azoxystrobin Z (degradate)	24		
	Bensufuron methyl	24		
	Bentazon	2		
	Bromacil	1		
	Butachlor	1		
	Carbaryl	2		
	Carbofuran	2		
	Clomazone	24		
	Dacthal degradates	2		
	Dalapon	2		
	Dicamba	2		
	Dichlorprop, butoxyethanol ester	2		
	Dimethoate	1		
	Dinoseb	2		
	Glyphosate	4		
	Halosulfuron-methyl	24		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Methiocarb	2		

<b><u>Butte</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Methomyl	2		
	Methyl bromide	15	1	0.67
	Metolachlor	1		
	Metribuzin	1		
	Molinate	25		
	Naphthalene	43		
	Ortho-dichlorobenzene	48		
	Orthosulfamuron	24		
	Orthosulfamuron	24		
	Oxamyl	2		
	Penoxsulam	24	1	0.06
	Picloram	2		
	Propachlor	1		
	Propanil	24		
	Propiconazole	24		
	Propoxur	2		
	Silvex	2		
	Simazine	1		
	Tetrachloroethane	48		
	Thiobencarb	25		
	Triclopyr, Triethylamine salt	24		
	Xylene	48	1	0.6

<b><u>Calaveras</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	1,3-D (telone)	1		
	Methyl bromide	1		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Tetrachloroethane	1		
	Xylene	1		

<b><u>Colusa</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	1,3-D (telone)	1		
	2,4-D	9		
	Atrazine	2		
	Azoxystrobin	8		
	Azoxystrobin acid (degradate)	8		
	Azoxystrobin Z (degradate)	8		
	Bensufuron methyl	8		

<a href="#">Colusa</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Carbofuran	2		
	Clomazone	8		
	Glyphosate	1		
	Halosulfuron-methyl	8		
	Methyl bromide	1		
	Molinate	11		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Orthosulfamuron	8	1	0.05
	Orthosulfamuron	8		
	Penoxsulam	8		
	Propanil	8		
	Propiconazole	8		
	Simazine	3		
	Tetrachloroethane	1		
	Thiobencarb	11		
	Triclopyr, Triethylamine salt	8		
	Xylene	1		

<a href="#">Contra Costa</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	8		
	1,2-DCP	8		
	1,3-D (telone)	5		
	2,4,5-T	1		
	2,4-D	4		
	Alachlor	4		
	Aldicarb	3		
	Aldicarb sulfone (degradate)	3		
	Aldicarb sulfoxide (degradate)	3		
	Aldrin	4		
	Atrazine	4		
	Bentazon	4		
	Bromacil	4		
	Butachlor	4		
	Carbaryl	3		
	Carbofuran	3		
	Carbon disulfide	5		
	Chlordane	4		
	Dacthal degradates	3		
	Dalapon	4		
	DBCP	4		
	Diazinon	4		
	Dicamba	4		
	Dieldrin	4		
	Dimethoate	4		

<u>Contra Costa</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Dinoseb	4		
	Diquat dibromide	3		
	Diuron	3		
	Endothall	3		
	Endrin	4		
	Ethylene dibromide	4		
	Glyphosate	3		
	Heptachlor	4		
	Heptachlor epoxide	4		
	Hexachlorobenzene	4		
	Hydroxycarbofuran ( Carbofuran degradate)	3		
	Lindane (gamma-BHC)	4		
	Methiocarb	3		
	Methomyl	3		
	Methoxychlor	4		
	Methyl bromide	7		
	Metolachlor	4		
	Metribuzin	4		
	Molinate	4		
	Naphthalene	7		
	Ortho-dichlorobenzene	8		
	Oxamyl	3		
	Picloram	4		
	Prometryn	1		
	Propachlor	4		
	Propoxur	3		
	Silvex	4		
	Simazine	4		
	Tetrachloroethane	8		
	Thiobencarb	4		
	Toxaphene	4		
	Xylene	8		

<u>Del Norte</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	2		
	1,2-DCP	2		
	1,3-D (telone)	2		
	Methyl bromide	2		
	Naphthalene	2		
	Ortho-dichlorobenzene	2		
	Tetrachloroethane	2		
	Xylene	2		

<u>El Dorado</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	14		
	1,2-DCP	14		
	1,3-D (telone)	12		
	2,4,5-T	1		
	2,4-D	1		
	Alachlor	1		
	Aldicarb	1		
	Aldicarb sulfone (degradate)	1		
	Aldicarb sulfoxide (degradate)	1		
	Aldrin	1		
	Atrazine	1		
	Bentazon	1		
	Bromacil	1		
	Butachlor	1		
	Carbaryl	1		
	Carbofuran	1		
	Chlordane	1		
	Chlorothalonil	1		
	Dalapon	1		
	DBCP	1		
	Diazinon	1		
	Dicamba	1		
	Dieldrin	1		
	Dimethoate	1		
	Dinoseb	1		
	Diquat dibromide	4		
	Endothall	1		
	Endrin	1		
	Ethylene dibromide	1		
	Glyphosate	1		
	Heptachlor	1		
	Heptachlor epoxide	1		
	Hexachlorobenzene	1		
	Hydroxycarbofuran ( Carbofuran degradate)	1		
	Lindane (gamma-BHC)	1		
	Methomyl	1		
	Methoxychlor	1		
	Methyl bromide	12		
	Metolachlor	1		
	Metribuzin	1		
	Molinate	1		
	Naphthalene	12		
	Ortho-dichlorobenzene	14		
	Oxamyl	1		
	Picloram	1		
	Propachlor	1		

<u>El Dorado</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Silvex	1		
	Simazine	1		
	Tetrachloroethane	14		
	Thiobencarb	1		
	Toxaphene	1		
	Trifluralin	1		
	Xylene	14		

<u>Fresno</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	74		
	1,2-DCP	74		
	1,3-D (telone)	64		
	2,4,5-T	19		
	2,4-D	19		
	4(2,4-DB), dimethylamine salt	1		
	ACET (degradate)	48	36	0.057 - 0.89
	Alachlor	73		
	Aldicarb	15		
	Aldicarb sulfone (degradate)	15		
	Aldicarb sulfoxide (degradate)	15		
	Aldrin	16		
	Atrazine	121		
	Bentazon	19		
	Bromacil	87	9	0.056 - 3.74
	Butachlor	39		
	Carbaryl	15		
	Carbofuran	15		
	Carbon disulfide	1		
	Chlordane	16		
	Chlorothalonil	16		
	Chlorpyrifos	1		
	DACT (degradate)	48	41	0.052 - 3.13
	Dalapon	19	1	12
	DBCP	118	82	0.01 - 0.9
	DEA (degradate)	48	3	0.053 - 0.107
	Diazinon	38		
	Dicamba	19		
	Dichlorprop, butoxyethanol ester	1		
	Dieldrin	16		
	Dimethoate	39		
	Dinoseb	19		
	Diquat dibromide	1		
	Diuron	48	8	0.055 - 0.225
	DSMN (degradate)	48	19	0.056 - 0.621
	Endothall	17		

<b><u>Fresno</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Endrin	16		
	Ethylene dibromide	107	4	0.02 - 0.14
	Glyphosate	1		
	Heptachlor	16		
	Heptachlor epoxide	16		
	Hexachlorobenzene	16		
	Hexazinone	48		
	Hydroxycarbofuran ( Carbofuran degradate)	15		
	Lindane (gamma-BHC)	16		
	Methiocarb	1		
	Methomyl	15		
	Methoxychlor	16		
	Methyl bromide	67		
	Metolachlor	39		
	Metribuzin	39		
	Molinate	39		
	Naphthalene	71		
	Norflurazon	48	9	0.058 - 0.336
	Ortho-dichlorobenzene	74		
	Oxamyl	15		
	Picloram	19		
	Prometon	48		
	Prometryn	9		
	Propachlor	39		
	Propoxur	1		
	Silvex	19		
	Simazine	121	29	0.051 - 0.139
	Tetrachloroethane	74		
	Thiobencarb	41		
	Toxaphene	16		
	Trifluralin	16		
	Xylene	74		

<b><u>Glenn</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	8		
	1,2-DCP	8		
	2,4-D	31		
	Azoxystrobin	31	1	0.06
	Azoxystrobin acid (degradate)	31		
	Azoxystrobin Z (degradate)	31		
	Bensufuron methyl	31		
	Clomazone	31		
	Halosulfuron-methyl	31		
	Methyl bromide	1		

<b><u>Glenn</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Molinate	31		
	Naphthalene	7		
	Ortho-dichlorobenzene	8		
	Orthosulfamuron	31	1	0.1
	Orthosulfamuron	31		
	Penoxsulam	31		
	Propanil	31		
	Propiconazole	31		
	Tetrachloroethane	8		
	Thiobencarb	31		
	Triclopyr, Triethylamine salt	31		
	Xylene	8		

<b><u>Humboldt</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	3		
	1,2-DCP	3		
	1,3-D (telone)	3		
	Methyl bromide	3		
	Naphthalene	3		
	Ortho-dichlorobenzene	3		
	Tetrachloroethane	3		
	Xylene	3		

<b><u>Imperial</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	1,3-D (telone)	1		
	Methyl bromide	1		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Tetrachloroethane	1		
	Thiobencarb	1		
	Xylene	1		

<b><u>Inyo</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-DCP	1		
	2,4-D	2		
	Alachlor	2		
	Atrazine	2		
	Bentazon	2		

<u>Inyo</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Carbofuran	2		
	Carbon disulfide	1		
	Chlordane	2		
	Dalapon	2		
	DBCP	3		
	Dinoseb	2		
	Diquat dibromide	2		
	Endothall	2		
	Endrin	2		
	Ethylene dibromide	3		
	Glyphosate	2		
	Heptachlor	2		
	Heptachlor epoxide	2		
	Hexachlorobenzene	2		
	Lindane (gamma-BHC)	2		
	Methoxychlor	2		
	Molinate	2		
	Ortho-dichlorobenzene	1		
	Oxamyl	2		
	Picloram	2		
	Silvex	2		
	Simazine	2		
	Tetrachloroethane	1		
	Thiobencarb	2		
	Toxaphene	2		
	Xylene	1		

<u>Kern</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	150		
	1,2-DCP	150	2	0.63 - 0.96
	1,3-D (telone)	44		
	2,4,5-T	3		
	2,4-D	7		
	4(2,4-DB), dimethylamine salt	1		
	Alachlor	120		
	Aldicarb	5		
	Aldicarb sulfone (degradate)	5		
	Aldicarb sulfoxide (degradate)	5		
	Aldrin	7		
	Atrazine	136		
	Bentazon	6		
	BHC (other than gamma isomer)	7		
	Bromacil	67		
	Butachlor	60		
	Carbaryl	5		

<a href="#">Kern</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Carbofuran	5		
	Carbon disulfide	10		
	Chlordane	9		
	Chlorothalonil	6		
	Dalapon	7		
	DBCP	106	18	0.01 - 1.6
	Diazinon	13		
	Dicamba	4		
	Dichlorprop, butoxyethanol ester	1		
	Dieldrin	7		
	Dimethoate	67		
	Dinoseb	8		
	Diquat dibromide	2		
	Endothall	8		
	Endrin	9		
	Ethylene dibromide	97	2	0.02 - 0.19
	Glyphosate	2		
	Heptachlor	7		
	Heptachlor epoxide	7		
	Hexachlorobenzene	14		
	Hydroxycarbofuran ( Carbofuran degradate)	5		
	Lindane (gamma-BHC)	14		
	MCPA, dimethylamine salt	1		
	MCPP	1		
	Methiocarb	1		
	Methomyl	5		
	Methoxychlor	14		
	Methyl bromide	52		
	Metolachlor	68		
	Metribuzin	67		
	Molinate	73		
	Naphthalene	123		
	Ortho-dichlorobenzene	150		
	Oxamyl	5		
	Picloram	7		
	Prometon	7		
	Prometryn	7		
	Propachlor	61		
	Propoxur	1		
	Silvex	7		
	Simazine	136		
	Terbutryn	7		
	Tetrachloroethane	150		
	Thiobencarb	74		
	Toxaphene	8		
	Trifluralin	6		

<a href="#">Kern</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Xylene	152	1	0.58

<a href="#">Kings</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	16		
	1,2-DCP	16		
	1,3-D (telone)	16		
	Alachlor	14		
	Aldrin	8		
	Atrazine	14		
	Chlordane	8		
	Chlorothalonil	8		
	DBCP	13		
	Dieldrin	8		
	Endrin	8		
	Ethylene dibromide	13		
	Heptachlor	8		
	Heptachlor epoxide	8		
	Hexachlorobenzene	8		
	Lindane (gamma-BHC)	8		
	Methoxychlor	8		
	Methyl bromide	16		
	Naphthalene	16		
	Ortho-dichlorobenzene	16		
	Simazine	14		
	Tetrachloroethane	16		
	Toxaphene	8		
	Trifluralin	8		
	Xylene	16		
	1,2,4-Trichlorobenzene	16		
	1,2-D	16		
	1,3-D (telone)	16		
	Alachlor	14		
	Aldrin	8		
	Atrazine	14		
	Chlordane	8		
	Chlorothalonil	8		
	DBCP	13		
	Dieldrin	8		
	Endrin	8		
	Ethylene dibromide	13		
	Heptachlor	8		
	Heptachlor epoxide	8		
	Hexachlorobenzene	8		
	Lindane (gamma-BHC)	8		
	Methoxychlor	8		

<u>Kings</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Methyl bromide	16		
	Naphthalene	16		
	Ortho-dichlorobenzene	16		
	Simazine	14		
	Tetrachloroethane	16		
	Toxaphene	8		
	Trifluralin	8		
	Xylene	16		

<u>Lake</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	3		
	1,2-DCP	3		
	1,3-D (telone)	2		
	2,4,5-T	6		
	2,4-D	6		
	4(2,4-DB), dimethylamine salt	6		
	Acifluorfen, sodium salt	4		
	Acrylonitrile	2		
	Alachlor	6		
	Aldicarb	6		
	Aldicarb sulfone (degradate)	6		
	Aldicarb sulfoxide (degradate)	6		
	Aldrin	2		
	Atrazine	10		
	Bentazon	6		
	BHC (other than gamma isomer)	2		
	Bromacil	6		
	Butachlor	6		
	Carbaryl	6		
	Carbofuran	7		
	Carbon disulfide	2		
	Chlordane	2		
	Chlorobenzilate	2		
	Chloroneb	2		
	Chlorothalonil	2		
	Chlorthal-dimethyl (dacthal / DCPA)	2		
	Dalapon	6		
	DDD	2		
	DDE (degradate)	2		
	DDT	2		
	Dicamba	6		
	Dichlorprop, butoxyethanol ester	4		
	Dieldrin	2		
	Dimethoate	6		
	Dinoseb	6		

<u>Lake</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Diquat dibromide	4		
	Endosulfan	2		
	Endosulfan sulfate (degradate)	2		
	Endothall	5		
	Endrin	2		
	Endrin aldehyde	2		
	Ethylene dibromide	1		
	Heptachlor	2		
	Heptachlor epoxide	2		
	Hexachlorobenzene	2		
	Hydroxycarbofuran ( Carbofuran degradate)	6		
	Lindane (gamma-BHC)	2		
	Methiocarb	6		
	Methomyl	6		
	Methoxychlor	2		
	Methyl bromide	3		
	Metolachlor	6		
	Metribuzin	6		
	Molinate	6		
	Naphthalene	2		
	Ortho-dichlorobenzene	3		
	Oxamyl	7		
	Permethrin	2		
	Permethrin, other related compounds	2		
	Picloram	6		
	Prometryn	6		
	Propachlor	6		
	Propoxur	6		
	Silvex	6		
	Simazine	10		
	Tetrachloroethane	3		
	Thiobencarb	6		
	Toxaphene	2		
	Trifluralin	2		
	Xylene	3		

<u>Lassen</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	2		
	1,2-DCP	2		
	1,3-D (telone)	1		
	Methyl bromide	2		
	Naphthalene	1		
	Ortho-dichlorobenzene	2		
	Tetrachloroethane	2		

<u>Lassen</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Xylene	2		

<u>Los Angeles</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	665		
	1,2-DCP	665	1	0.51
	1,3-D (telone)	468		
	2,4,5-T	18		
	2,4,6-trichlorophenol	7		
	2,4-D	65		
	2,4-Dinitrophenol	2		
	4(2,4-DB), dimethylamine salt	5		
	Acetochlor	2		
	Acifluorfen, sodium salt	16		
	Acrolein	4		
	Acrylonitrile	8		
	Alachlor	88		
	Aldicarb	43		
	Aldicarb sulfone (degradate)	43		
	Aldicarb sulfoxide (degradate)	43		
	Aldrin	36		
	Atrazine	86		
	Bentazon	65		
	BHC (other than gamma isomer)	7		
	Bromacil	54		
	Butachlor	54		
	Captan	6		
	Carbaryl	43		
	Carbofuran	58		
	Carbon disulfide	169	1	0.74
	Carbophenothion	6		
	Chlordane	63		
	Chlorothalonil	5		
	Chlorpropham	6		
	Cyanazine	6		
	Dacthal degradates	47	1	0.2 - 0.42
	Dalapon	63		
	DBCP	67	1	0.01 - 0.02
	DDD	7		
	DDE (degradate)	7		
	DDT	7		
	Diazinon	54		
	Dicamba	49		
	Dichlorprop, butoxyethanol ester	5		
	Dieldrin	36		
	Dimethoate	54		

<a href="#">Los Angeles</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Dinoseb	65		
	Diphenamid	6		
	Diquat dibromide	54		
	Disulfoton	6		
	Endosulfan	7		
	Endosulfan sulfate (degradate)	7		
	Endothall	54		
	Endrin	63		
	Endrin aldehyde	7		
	EPTC	6		
	Ethion	2		
	Ethylene dibromide	66		
	Glyphosate	53		
	Heptachlor	52		
	Heptachlor epoxide	52		
	Hexachlorobenzene	57		
	Hydroxycarbofuran ( Carbofuran degradate)	43		
	Lindane (gamma-BHC)	63		
	Malathion	1		
	Methiocarb	39		
	Methomyl	43		
	Methoxychlor	61		
	Methyl bromide	367		
	Methyl parathion	1		
	Metolachlor	54		
	Metribuzin	54		
	Molinate	83		
	Naphthalene	362		
	Ortho-dichlorobenzene	665		
	Oxamyl	58		
	Paraquat dichloride	1		
	Parathion or ethyl parathion	1		
	PCNB	2		
	Picloram	63		
	Prometon	7		
	Prometryn	7		
	Propachlor	53		
	Propoxur	39		
	Silvex	63		
	Simazine	86		
	Terbacil	6		
	Tetrachloroethane	665		
	Thiobencarb	252		
	Toxaphene	65		
	Trifluralin	5		
	Xylene	665		

<u>Madera</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	23		
	1,2-DCP	23		
	1,3-D (telone)	18		
	2,4,5-T	2		
	2,4-D	2		
	Alachlor	32		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Aldrin	4		
	Atrazine	32		
	Bentazon	2		
	Bromacil	2		
	Butachlor	4		
	Carbaryl	2		
	Carbofuran	2		
	Chlordane	2		
	Chlorothalonil	2		
	Dalapon	2		
	DBCP	29	6	0.01 - 0.16
	Diazinon	2		
	Dicamba	2		
	Dieldrin	4		
	Dimethoate	2		
	Dinoseb	2		
	Diquat dibromide	2		
	Endothall	2		
	Endrin	4		
	Ethylene dibromide	28		
	Glyphosate	2		
	Heptachlor	4		
	Heptachlor epoxide	4		
	Hexachlorobenzene	4		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Lindane (gamma-BHC)	4		
	Methomyl	2		
	Methoxychlor	4		
	Methyl bromide	20		
	Metolachlor	4		
	Metribuzin	4		
	Molinate	5		
	Naphthalene	17		
	Ortho-dichlorobenzene	23		
	Oxamyl	2		
	Picloram	2		

<u>Madera</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Propachlor	4		
	Silvex	2		
	Simazine	32		
	Tetrachloroethane	23		
	Thiobencarb	5		
	Toxaphene	2		
	Trifluralin	2		
	Xylene	23		

<u>Marin</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	3		
	1,2-DCP	3		
	2,4,5-T	3		
	2,4-D	3		
	4(2,4-DB), dimethylamine salt	3		
	Alachlor	1		
	Aldrin	1		
	Bentazon	3		
	Carbofuran	2		
	Chlordane	1		
	Dalapon	3		
	DBCP	3		
	Dicamba	3		
	Dieldrin	1		
	Dinoseb	3		
	Diquat dibromide	1		
	Endrin	1		
	Ethylene dibromide	4		
	Heptachlor	1		
	Heptachlor epoxide	1		
	Hexachlorobenzene	1		
	Lindane (gamma-BHC)	1		
	Methoxychlor	1		
	Methyl bromide	1		
	Naphthalene	2		
	Ortho-dichlorobenzene	3		
	Picloram	3		
	Silvex	3		
	Tetrachloroethane	3		
	Toxaphene	1		
	Xylene	3		

<u>Mariposa</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	2		
	1,2-DCP	2		
	1,3-D (telone)	1		
	Acetochlor	3		
	Alachlor	6		
	Atrazine	6		
	Bromacil	3		
	Butachlor	3		
	Cyanazine	3		
	Diazinon	3		
	Dimethoate	3		
	Methyl bromide	2		
	Metolachlor	3		
	Metribuzin	3		
	Molinate	3		
	Naphthalene	2		
	Ortho-dichlorobenzene	2		
	Prometon	3		
	Prometryn	3		
	Simazine	6		
	Terbacil	3		
	Tetrachloroethane	2		
	Thiobencarb	3		
	Xylene	2		
	1,2,4-Trichlorobenzene	2		
	1,2-D	2		
	1,3-D (telone)	1		
	Acetochlor	3		
	Alachlor	6		
	Atrazine	6		
	Bromacil	3		
	Butachlor	3		
	Cyanazine	3		
	Diazinon	3		
	Dimethoate	3		
	Methyl bromide	2		
	Metolachlor	3		
	Metribuzin	3		
	Molinate	3		
	Naphthalene	2		
	Ortho-dichlorobenzene	2		
	Prometon	3		
	Prometryn	3		
	Simazine	6		
	Terbacil	3		
	Tetrachloroethane	2		
	Thiobencarb	3		

<u>Mariposa</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Xylene	2		

<u>Mendocino</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	9		
	1,2-DCP	9		
	1,3-D (telone)	8		
	2,4,5-T	8		
	2,4-D	9		
	4(2,4-DB), dimethylamine salt	8		
	Acifluorfen, sodium salt	8		
	Acrylonitrile	7		
	Alachlor	8		
	Aldicarb	6		
	Aldicarb sulfone (degradate)	6		
	Aldicarb sulfoxide (degradate)	6		
	Aldrin	1		
	Atrazine	8		
	Bentazon	9		
	BHC (other than gamma isomer)	1		
	Bromacil	6		
	Butachlor	6		
	Carbaryl	6		
	Carbofuran	8		
	Carbon disulfide	7		
	Chlordane	5		
	Chlorobenzilate	1		
	Chloroneb	1		
	Chlorothalonil	1		
	Chlorthal-dimethyl (dacthal / DCPA)	1		
	Dalapon	9		
	DBCP	5		
	DDD	1		
	DDE (degradate)	1		
	DDT	1		
	Dicamba	8		
	Dichlorprop, butoxyethanol ester	8		
	Dieldrin	1		
	Dimethoate	6		
	Dinoseb	9		
	Diquat dibromide	9		
	Endosulfan	1		
	Endosulfan sulfate (degradate)	1		
	Endothall	8		
	Endrin	5		
	Endrin aldehyde	1		

<u>Mendocino</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Ethylene dibromide	5		
	Heptachlor	5		
	Heptachlor epoxide	5		
	Hexachlorobenzene	5		
	Hydroxycarbofuran ( Carbofuran degradate)	6		
	Lindane (gamma-BHC)	5		
	Methiocarb	6		
	Methomyl	6		
	Methoxychlor	5		
	Methyl bromide	8		
	Metolachlor	6		
	Metribuzin	6		
	Molinate	8		
	Naphthalene	8		
	Ortho-dichlorobenzene	9		
	Oxamyl	8		
	Permethrin	1		
	Permethrin, other related compounds	1		
	Picloram	9		
	Prometryn	6		
	Propachlor	7		
	Propoxur	6		
	Silvex	9		
	Simazine	8		
	Tetrachloroethane	9		
	Thiobencarb	8		
	Toxaphene	5		
	Trifluralin	1		
	Xylene	9		

<u>Merced</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	26		
	1,2-DCP	26		
	1,3-D (telone)	16		
	Alachlor	23		
	Aldrin	1		
	Atrazine	23		
	Bromacil	8		
	Butachlor	8		
	Chlordane	1		
	Chlorothalonil	1		
	DBCP	24	7	0.01 - 0.16
	Diazinon	8		
	Dieldrin	1		

<b><u>Merced</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Dimethoate	8		
	Endrin	1		
	Ethylene dibromide	21		
	Heptachlor	1		
	Heptachlor epoxide	1		
	Hexachlorobenzene	1		
	Lindane (gamma-BHC)	1		
	Methoxychlor	1		
	Methyl bromide	26		
	Metolachlor	8		
	Metribuzin	8		
	Molinate	8		
	Naphthalene	24		
	Ortho-dichlorobenzene	26		
	Prometryn	2		
	Propachlor	6		
	Simazine	23		
	Tetrachloroethane	26		
	Thiobencarb	8		
	Toxaphene	1		
	Trifluralin	1		
	Xylene	26		

<b><u>Modoc</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	5		
	1,2-DCP	5		
	1,3-D (telone)	1		
	Methyl bromide	5		
	Naphthalene	1		
	Ortho-dichlorobenzene	5		
	Tetrachloroethane	5		
	Xylene	5		

<b><u>Mono</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	DBCP	1		
	Ethylene dibromide	1		

<b><u>Monterey</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	56		
	1,2-D	56		
	1,3-D (telone)	22		

<u>Monterey</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	2,4,5-T	8		
	2,4-D	51		
	4(2,4-DB), dimethylamine salt	2		
	Acetochlor	28		
	Alachlor	52		
	Aldicarb	45		
	Aldicarb sulfone (degradate)	45		
	Aldicarb sulfoxide (degradate)	45		
	Aldrin	31		
	Atrazine	53		
	Bentazon	50		
	BHC (other than gamma isomer)	2		
	Bromacil	47		
	Butachlor	45		
	Carbaryl	45		
	Carbofuran	50		
	Carbon disulfide	5		
	Chlordane	3		
	Chlorpyrifos	7		
	Dacthal degradates	31	8	0.3 - 15
	Dalapon	47		
	DBCP	4	1	0.18
	Diazinon	43		
	Dicamba	45		
	Dichlorprop, butoxyethanol ester	3		
	Dieldrin	3		
	Dimethoate	47		
	Dinoseb	47		
	Diquat dibromide	52		
	Endothall	3		
	Endrin	3		
	EPTC	28		
	Ethylene dibromide	4		
	Glyphosate	3		
	Heptachlor	3		
	Heptachlor epoxide	3		
	Hexachlorobenzene	33		
	Hydroxycarbofuran ( Carbofuran degradate)	45		
	Lindane (gamma-BHC)	33		
	Methiocarb	39		
	Methomyl	45		
	Methoxychlor	33		
	Methyl bromide	24		
	Metolachlor	47		
	Metribuzin	47		
	Molinate	49		

<u>Monterey</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Naphthalene	43		
	Ortho-dichlorobenzene	56		
	Oxamyl	47		
	Picloram	47		
	Prometon	2		
	Prometryn	10		
	Propachlor	45		
	Propoxur	39		
	Silvex	47		
	Simazine	53		
	Terbacil	28		
	Terbutryn	2		
	Tetrachloroethane	56		
	Thiobencarb	49		
	Toxaphene	3		
	Xylene	56		

<u>Napa</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	8		
	1,2-D	8		
	1,3-D (telone)	2		
	2,4,5-T	6		
	2,4-D	10		
	4(2,4-DB), dimethylamine salt	6		
	Acetochlor	1		
	Acifluorfen, sodium salt	1		
	Acrylonitrile	2		
	Alachlor	10		
	Aldicarb	9		
	Aldicarb sulfone (degradate)	9		
	Aldicarb sulfoxide (degradate)	9		
	Aldrin	10		
	Atrazine	11		
	Bentazon	10		
	BHC (other than gamma isomer)	1		
	Bromacil	2		
	Butachlor	2		
	Carbaryl	9		
	Carbofuran	9		
	Carbon disulfide	2		
	Chlordane	10		
	Chlorobenzilate	1		
	Chloroneb	1		
	Chlorothalonil	1		
	Chlorthal-dimethyl (dacthal / DCPA)	1		

<a href="#">Napa</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Dacthal degradates	4		
	Dalapon	10		
	DBCP	1		
	DDD	1		
	DDE (degradate)	1		
	DDT	1		
	Diazinon	1		
	Dicamba	10		
	Dichlorprop, butoxyethanol ester	1		
	Dieldrin	10		
	Dimethoate	2		
	Dinoseb	10		
	Diquat dibromide	10		
	Endosulfan	1		
	Endosulfan sulfate (degradate)	1		
	Endothall	10		
	Endrin	10		
	Endrin aldehyde	1		
	EPTC	1		
	Ethylene dibromide	6		
	Glyphosate	2		
	Heptachlor	10		
	Heptachlor epoxide	10		
	Hexachlorobenzene	7		
	Hydroxycarbofuran ( Carbofuran degradate)	9		
	Lindane (gamma-BHC)	10		
	Methiocarb	9		
	Methomyl	9		
	Methoxychlor	10		
	Methyl bromide	4		
	Metolachlor	2		
	Metribuzin	2		
	Molinate	2		
	Naphthalene	3		
	Ortho-dichlorobenzene	8		
	Oxamyl	9		
	Permethrin	1		
	Permethrin, other related compounds	1		
	Picloram	10		
	Prometryn	1		
	Propachlor	2		
	Propoxur	9		
	Silvex	10		
	Simazine	11		
	Terbacil	1		
	Tetrachloroethane	8		

<a href="#">Napa</a>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Thiobencarb	2		
	Toxaphene	10		
	Trifluralin	1		
	Xylene	8		

<a href="#">Nevada</a>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	1		
	1,2-D	1		
	1,3-D (telone)	1		
	Carbon disulfide	1		
	Methyl bromide	1		
	Naphthalene	1		
	Ortho-dichlorobenzene	1		
	Tetrachloroethane	1		
	Xylene	1		

<a href="#">Orange</a>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	169		
	1,2-DCP	169		
	1,3-D (telone)	168		
	2,4-D	5		
	Acetochlor	2		
	Acrolein	1		
	Acrylonitrile	1		
	Alachlor	95		
	Aldicarb	4		
	Aldicarb sulfone (degradate)	4		
	Aldicarb sulfoxide (degradate)	4		
	Aldrin	3		
	Atrazine	95		
	Bentazon	5		
	BHC (other than gamma isomer)	3		
	Bromacil	92		
	Butachlor	92		
	Carbaryl	4		
	Carbofuran	5		
	Chlordane	6		
	Chlorothalonil	3		
	Dacthal degradates	2		
	Dalapon	5		
	DBCP	171		
	DDD	3		
	DDE (degradate)	3		

<u>Orange</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	DDT	3		
	Diazinon	92		
	Dicamba	4		
	Dieldrin	3		
	Dimethoate	92		
	Dinoseb	5		
	Diquat dibromide	5		
	Diuron	2		
	Endosulfan	3		
	Endosulfan sulfate (degradate)	3		
	Endothall	6		
	Endrin	6		
	Endrin aldehyde	3		
	Ethylene dibromide	171		
	Glyphosate	4		
	Heptachlor	6		
	Heptachlor epoxide	6		
	Hexachlorobenzene	6		
	Hydroxycarbofuran ( Carbofuran degradate)	4		
	Lindane (gamma-BHC)	6		
	Linuron	2		
	Malathion	92		
	Methiocarb	2		
	Methomyl	4		
	Methoxychlor	6		
	Methyl bromide	168		
	Methyl parathion	92		
	Metolachlor	92		
	Metribuzin	92		
	Molinate	95		
	Naphthalene	168		
	Ortho-dichlorobenzene	169		
	Oxamyl	5		
	Paraquat dichloride	4		
	Parathion or ethyl parathion	92		
	Picloram	5		
	Prometon	92		
	Prometryn	92		
	Propachlor	92		
	Propoxur	2		
	Silvex	5		
	Simazine	96		
	Tetrachloroethane	169		
	Thiobencarb	95		
	Toxaphene	6		
	Xylene	169		

<u>Placer</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	7		
	1,2-DCP	7		
	1,3-D (telone)	6		
	2,4,5-T	2		
	2,4-D	2		
	Alachlor	2		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Aldrin	2		
	Atrazine	2		
	Bentazon	2		
	Bromacil	2		
	Butachlor	2		
	Carbaryl	2		
	Carbofuran	2		
	Chlordane	2		
	Chlorothalonil	2		
	Dalapon	2		
	DBCP	2		
	Diazinon	2		
	Dicamba	2		
	Dieldrin	2		
	Dimethoate	2		
	Dinoseb	2		
	Diquat dibromide	2		
	Endothall	2		
	Endrin	2		
	Ethylene dibromide	2		
	Glyphosate	2		
	Heptachlor	2		
	Heptachlor epoxide	2		
	Hexachlorobenzene	2		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Lindane (gamma-BHC)	2		
	Methomyl	2		
	Methoxychlor	2		
	Methyl bromide	7		
	Metolachlor	2		
	Metribuzin	2		
	Molinate	2		
	Naphthalene	6		
	Ortho-dichlorobenzene	7		
	Oxamyl	2		
	Picloram	2		

<b><u>Placer</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Propachlor	2		
	Silvex	2		
	Simazine	2		
	Tetrachloroethane	7		
	Thiobencarb	2		
	Toxaphene	2		
	Trifluralin	2		
	Xylene	7		

<b><u>Plumas</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	4		
	1,2-DCP	4		
	1,3-D (telone)	3		
	Methyl bromide	4		
	Naphthalene	3		
	Ortho-dichlorobenzene	4		
	Tetrachloroethane	4		
	Xylene	4		

<b><u>Riverside</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	131		
	1,2-DCP	131		
	1,3-D (telone)	98		
	2,4-D	42		
	Alachlor	47		
	Aldicarb	37		
	Aldicarb sulfone (degradate)	37		
	Aldicarb sulfoxide (degradate)	37		
	Aldrin	37		
	Atrazine	99		
	Bentazon	42		
	Carbaryl	37		
	Carbofuran	42		
	Carbon disulfide	24		
	Chlordane	42		
	Dalapon	42		
	DBCP	65	5	0.02 - 0.57
	DDE (degradate)	3		
	Dicamba	37		
	Dieldrin	37		
	Dinoseb	42		
	Diquat dibromide	41		
	Endothall	41		

<a href="#">Riverside</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Endrin	42		
	Ethylene dibromide	65		
	Glyphosate	41		
	Heptachlor	42		
	Heptachlor epoxide	42		
	Hexachlorobenzene	47		
	Hydroxycarbofuran ( Carbofuran degradate)	37		
	Lindane (gamma-BHC)	42		
	Methiocarb	37		
	Methomyl	37		
	Methoxychlor	42		
	Methyl bromide	98		
	Molinate	52		
	Naphthalene	98		
	Ortho-dichlorobenzene	131		
	Oxamyl	42		
	Picloram	42		
	Propachlor	37		
	Propoxur	37		
	Silvex	42		
	Simazine	99		
	Tetrachloroethane	131		
	Thiobencarb	52		
	Toxaphene	42		
	Xylene	131		

<a href="#">Sacramento</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	126		
	1,2-DCP	126		
	1,3-D (telone)	61		
	2,4,5-T	40		
	2,4-D	58		
	Acifluorfen, sodium salt	13		
	Alachlor	58		
	Aldicarb	58		
	Aldicarb sulfone (degradate)	58		
	Aldicarb sulfoxide (degradate)	58		
	Aldrin	40		
	Atrazine	58		
	Bentazon	58		
	Bromacil	40		
	Butachlor	40		
	Carbaryl	58		
	Carbofuran	58		

<u>Sacramento</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Chlordane	58		
	Chlorothalonil	40		
	Dacthal degradates	14		
	Dalapon	58		
	DBCP	61		
	Diazinon	40		
	Dicamba	58		
	Dieldrin	40		
	Dimethoate	40		
	Dinoseb	58		
	Diquat dibromide	58		
	Endothall	58		
	Endrin	58		
	Ethylene dibromide	61		
	Glyphosate	58		
	Heptachlor	58		
	Heptachlor epoxide	58		
	Hexachlorobenzene	58		
	Hydroxycarbofuran ( Carbofuran degradate)	58		
	Lindane (gamma-BHC)	58		
	Methomyl	58		
	Methoxychlor	58		
	Methyl bromide	48		
	Metolachlor	40		
	Metribuzin	40		
	Molinate	58		
	Naphthalene	48		
	Ortho-dichlorobenzene	126		
	Oxamyl	58		
	Picloram	58		
	Propachlor	40		
	Silvex	58		
	Simazine	58		
	Tetrachloroethane	126		
	Thiobencarb	58		
	Toxaphene	58		
	Trifluralin	40		
	Xylene	126		

<u>San Benito</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	7		
	1,2-DCP	7		
	1,3-D (telone)	5		
	2,4,5-T	4		

<u>San Benito</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	2,4-D	5		
	Alachlor	4		
	Aldicarb	4		
	Aldicarb sulfone (degradate)	4		
	Aldicarb sulfoxide (degradate)	4		
	Atrazine	4		
	Bentazon	5		
	Bromacil	2		
	Butachlor	2		
	Carbaryl	4		
	Carbofuran	5		
	Dalapon	5		
	Diazinon	2		
	Dicamba	4		
	Dimethoate	2		
	Dinoseb	5		
	Diquat dibromide	5		
	Hydroxycarbofuran ( Carbofuran degradate)	4		
	Methomyl	4		
	Methyl bromide	5		
	Metolachlor	2		
	Metribuzin	2		
	Molinate	3		
	Naphthalene	5		
	Ortho-dichlorobenzene	7		
	Oxamyl	5		
	Picloram	5		
	Propachlor	2		
	Silvex	5		
	Simazine	4		
	Tetrachloroethane	7		
	Thiobencarb	3		
	Xylene	7		

<u>San Bernardino</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	190		
	1,2-DCP	190	1	0.36 - 0.51
	1,3-D (telone)	116		
	2,4,5-T	12		
	2,4-D	45		
	4(2,4-DB), dimethylamine salt	12		
	Acetochlor	2		
	Acifluorfen, sodium salt	12		
	Alachlor	60		

<a href="#">San Bernardino</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Aldicarb	32		
	Aldicarb sulfone (degradate)	32		
	Aldicarb sulfoxide (degradate)	32		
	Aldrin	39		
	Atrazine	76		
	Bentazon	45		
	BHC (other than gamma isomer)	12		
	Bromacil	15		
	Butachlor	15		
	Captan	12		
	Carbaryl	32		
	Carbofuran	41		
	Carbon disulfide	35		
	Carbophenothion	12		
	Chlordane	50		
	Chlorothalonil	12		
	Chlorpropham	12		
	Cyanazine	12		
	Dacthal degradates	20		
	Dalapon	45		
	DBCP	166	24	0.01 - 0.34
	DDD	12		
	DDE (degradate)	12		
	DDT	12		
	Diazinon	15		
	Dicamba	35		
	Dichlorprop, butoxyethanol ester	12		
	Dieldrin	39		
	Dimethoate	15		
	Dinoseb	45		
	Diphenamid	12		
	Diquat dibromide	43		
	Disulfoton	12		
	Endosulfan	12		
	Endosulfan sulfate (degradate)	12		
	Endothall	44		
	Endrin	50		
	Endrin aldehyde	12		
	EPTC	14		
	Ethylene dibromide	157		
	Glyphosate	41		
	Heptachlor	50		
	Heptachlor epoxide	50		
	Hexachlorobenzene	64		
	Hydroxycarbofuran ( Carbofuran degradate)	32		
	Lindane (gamma-BHC)	50		

<u>San Bernardino</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Methiocarb	32		
	Methomyl	32		
	Methoxychlor	50		
	Methyl bromide	116		
	Metolachlor	15		
	Metribuzin	15		
	Molinate	73		
	Naphthalene	116		
	Ortho-dichlorobenzene	190		
	Oxamyl	41		
	Picloram	45		
	Prometon	12		
	Prometryn	12		
	Propachlor	32		
	Propoxur	32		
	Silvex	45		
	Simazine	77		
	Terbacil	14		
	Tetrachloroethane	190	1	0.8
	Thiobencarb	73		
	Toxaphene	50		
	Trifluralin	12		
	Xylene	189		

<u>San Diego</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	16		
	1,2-DCP	16	1	0.59 - 0.66
	1,3-D (telone)	11		
	2,4,5-T	4		
	2,4-D	9		
	4(2,4-DB), dimethylamine salt	4		
	Acifluorfen, sodium salt	4		
	Alachlor	9		
	Aldicarb	9		
	Aldicarb sulfone (degradate)	9		
	Aldicarb sulfoxide (degradate)	9		
	Aldrin	8		
	Atrazine	10		
	Bentazon	9		
	BHC (other than gamma isomer)	4		
	Bromacil	4		
	Butachlor	4		
	Captan	4		
	Carbaryl	9		
	Carbofuran	10		

<a href="#">San Diego</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Carbon disulfide	11		
	Carbophenothion	4		
	Chlordane	9		
	Chlorothalonil	4		
	Chlorpropham	4		
	Cyanazine	4		
	Dacthal degradates	4		
	Dalapon	9		
	DBCP	13		
	DDD	4		
	DDE (degradate)	4		
	DDT	4		
	Diazinon	4		
	Dicamba	8		
	Dichlorprop, butoxyethanol ester	4		
	Dieldrin	8		
	Dimethoate	4		
	Dinoseb	9		
	Diphenamid	4		
	Diquat dibromide	5		
	Disulfoton	4		
	Endosulfan	4		
	Endosulfan sulfate (degradate)	4		
	Endothall	6		
	Endrin	9		
	Endrin aldehyde	4		
	EPTC	4		
	Ethylene dibromide	5		
	Glyphosate	8		
	Heptachlor	9		
	Heptachlor epoxide	9		
	Hexachlorobenzene	10		
	Hydroxycarbofuran ( Carbofuran degradate)	9		
	Lindane (gamma-BHC)	9		
	Methiocarb	7		
	Methomyl	9		
	Methoxychlor	9		
	Methyl bromide	14		
	Metolachlor	4		
	Metribuzin	4		
	Molinate	9		
	Naphthalene	14		
	Ortho-dichlorobenzene	16		
	Oxamyl	10		
	Picloram	9		
	Prometon	4		

<a href="#">San Diego</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Prometryn	4		
	Propachlor	8		
	Propoxur	7		
	Silvex	9		
	Simazine	10		
	Terbacil	4		
	Tetrachloroethane	16		
	Thiobencarb	9		
	Toxaphene	9		
	Trifluralin	4		
	Xylene	16		

<a href="#">San Francisco</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Not Sampled			

<a href="#">San Joaquin</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	52		
	1,2-DCP	52		
	1,3-D (telone)	32		
	2,4,5-T	3		
	2,4-D	4		
	4(2,4-DB), dimethylamine salt	3		
	Alachlor	7		
	Aldicarb	3		
	Aldicarb sulfone (degradate)	3		
	Aldicarb sulfoxide (degradate)	3		
	Aldrin	5		
	Atrazine	11		
	Bentazon	4		
	Bromacil	3		
	Butachlor	3		
	Carbaryl	3		
	Carbofuran	4		
	Carbon disulfide	4		
	Chlordane	6		
	Chlorothalonil	5		
	Chlorpyrifos	3		
	Dalapon	4		
	DBCP	47	15	0.01 - 1.1
	Diazinon	3		
	Dicamba	3		
	Dichlorprop, butoxyethanol ester	3		
	Dieldrin	5		

<a href="#"><u>San Joaquin</u></a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Dimethoate	3		
	Dinoseb	4		
	Diquat dibromide	4	1	4.5
	Endothall	3		
	Endrin	6		
	Ethylene dibromide	46	2	0.01 - 0.04
	Glyphosate	2		
	Heptachlor	6		
	Heptachlor epoxide	6		
	Hexachlorobenzene	6		
	Hydroxycarbofuran ( Carbofuran degradate)	3		
	Lindane (gamma-BHC)	6		
	Methiocarb	3		
	Methomyl	3		
	Methoxychlor	6		
	Methyl bromide	29		
	Metolachlor	3		
	Metribuzin	3		
	Molinate	7		
	Naphthalene	28		
	Ortho-dichlorobenzene	52		
	Oxamyl	4		
	Picloram	4		
	Prometryn	3		
	Propachlor	3		
	Propoxur	3		
	Silvex	4		
	Simazine	11		
	Tetrachloroethane	52		
	Thiobencarb	13		
	Toxaphene	6		
	Trifluralin	4		
	Xylene	52		

<a href="#"><u>San Luis Obispo</u></a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	46		
	1,2-DCP	46		
	1,3-D (telone)	18		
	Alachlor	3		
	Atrazine	8		
	Carbon disulfide	5		
	DBCP	1		
	Ethylene dibromide	2		
	Glyphosate	8		

<a href="#">San Luis Obispo</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Methyl bromide	18		
	Naphthalene	18		
	Ortho-dichlorobenzene	46		
	Simazine	8		
	Tetrachloroethane	46		
	Xylene	46		

<a href="#">San Mateo</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	12		
	1,2-DCP	12	2	0.53 - 0.98
	1,3-D (telone)	4		
	2,4,5-T	5		
	2,4-D	11		
	Alachlor	11		
	Aldicarb	5		
	Aldicarb sulfone (degradate)	5		
	Aldicarb sulfoxide (degradate)	5		
	Aldrin	5		
	Atrazine	11		
	Barban	1		
	Bentazon	11		
	Bromacil	5		
	Butachlor	5		
	Carbaryl	5		
	Carbofuran	9		
	Carbon disulfide	1		
	Chlordane	9		
	Chlorothalonil	5		
	Chlorpropham	1		
	Dalapon	11		
	DBCP	10		
	Diazinon	5		
	Dicamba	5		
	Dieldrin	5		
	Dimethoate	5		
	Dinoseb	11		
	Diquat dibromide	9	1	2.2
	Diuron	2		
	Endothall	9		
	Endrin	9		
	Ethylene dibromide	10		
	Fluometuron	1		
	Glyphosate	9		
	Heptachlor	9		
	Heptachlor epoxide	9		

<a href="#">San Mateo</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Hexachlorobenzene	9		
	Hydroxycarbofuran ( Carbofuran degradate)	5		
	Lindane (gamma-BHC)	9		
	Linuron	1		
	Methomyl	5		
	Methoxychlor	9		
	Methyl bromide	5		
	Metolachlor	5		
	Metribuzin	5		
	Molinate	11		
	Monuron	1		
	Naphthalene	6		
	Neburon	1		
	Ortho-dichlorobenzene	12		
	Oxamyl	9		
	Picloram	11		
	Propachlor	5		
	Propham	1		
	Propoxur	1		
	Siduron	1		
	Silvex	11		
	Simazine	11		
	Tetrachloroethane	12		
	Thiobencarb	11		
	Toxaphene	9		
	Trifluralin	5		
	Xylene	12		

<a href="#">Santa Barbara</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	26		
	1,2-DCP	26		
	1,3-D (telone)	20		
	2,4-D	6		
	Alachlor	16		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Aldrin	2		
	Atrazine	26		
	Bentazon	6		
	Bromacil	6		
	Butachlor	6		
	Carbaryl	2		
	Carbofuran	6		

<a href="#">Santa Barbara</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Carbon disulfide	3		
	Chlordane	2		
	Chlorpropham	4		
	Dacthal degradates	2		
	Dalapon	6		
	DBCP	7		
	Diazinon	6		
	Dicamba	2		
	Dieldrin	2		
	Dimethoate	6		
	Dinoseb	6		
	Diphenamid	4		
	Diquat dibromide	6		
	Disulfoton	4		
	Endothall	6		
	Endrin	6		
	EPTC	4		
	Ethylene dibromide	7		
	Glyphosate	6		
	Heptachlor	6		
	Heptachlor epoxide	6		
	Hexachlorobenzene	6		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Lindane (gamma-BHC)	6		
	Methiocarb	2		
	Methomyl	2		
	Methoxychlor	6		
	Methyl bromide	21		
	Metolachlor	6		
	Metribuzin	6		
	Molinate	15		
	Naphthalene	21		
	Ortho-dichlorobenzene	26		
	Oxamyl	6		
	Picloram	6		
	Prometon	4		
	Prometryn	6		
	Propachlor	2		
	Propoxur	2		
	Silvex	6		
	Simazine	26		
	Terbacil	4		
	Tetrachloroethane	26		
	Thiobencarb	15		
	Toxaphene	6		
	Xylene	27	2	1.9 - 8.6

<u>Santa Clara</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	107		
	1,2-DCP	107		
	1,3-D (telone)	41		
	2,4,5-T	5		
	2,4-D	33		
	Acetochlor	13		
	Alachlor	36		
	Aldicarb	30		
	Aldicarb sulfone (degradate)	30		
	Aldicarb sulfoxide (degradate)	30		
	Aldrin	30		
	Atrazine	34		
	Bentazon	33		
	Bromacil	30		
	Butachlor	30		
	Carbaryl	30		
	Carbofuran	33		
	Carbon disulfide	24		
	Chlordane	35		
	Chlorothalonil	5		
	Dacthal degradates	25	1	0.1
	Dalapon	33		
	DBCP	34		
	Diazinon	30		
	Dicamba	30		
	Dieldrin	30		
	Dimethoate	30		
	Dinoseb	33		
	Diquat dibromide	34		
	Endothall	33		
	Endrin	35		
	EPTC	13		
	Ethylene dibromide	34		
	Glyphosate	34		
	Heptachlor	35		
	Heptachlor epoxide	35		
	Hexachlorobenzene	33		
	Hydroxycarbofuran ( Carbofuran degradate)	30		
	Lindane (gamma-BHC)	35		
	Methiocarb	25		
	Methomyl	30		
	Methoxychlor	35		
	Methyl bromide	38		
	Metolachlor	30		
	Metribuzin	30		

<u>Santa Clara</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Molinate	33		
	Naphthalene	47		
	Ortho-dichlorobenzene	107		
	Oxamyl	33		
	Picloram	33		
	Propachlor	30		
	Propoxur	25		
	Silvex	33		
	Simazine	34		
	Terbacil	13		
	Tetrachloroethane	107		
	Thiobencarb	33		
	Toxaphene	35		
	Trifluralin	5		
	Xylene	107		

<u>Santa Cruz</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	16		
	1,2-DCP	16		
	1,3-D (telone)	12		
	2,4,5-T	6		
	2,4-D	22		
	Alachlor	23		
	Aldicarb	7		
	Aldicarb sulfone (degradate)	7		
	Aldicarb sulfoxide (degradate)	7		
	Aldrin	2		
	Atrazine	23		
	Bentazon	22		
	Bromacil	6		
	Butachlor	6		
	Carbaryl	7		
	Carbofuran	21		
	Carbon disulfide	8		
	Chlordane	2		
	Dacthal degradates	2		
	Dalapon	9		
	DBCP	3		
	Diazinon	6		
	Dicamba	8		
	Dieldrin	2		
	Dimethoate	6		
	Dinoseb	9		
	Diquat dibromide	23		
	Endothall	3		

<a href="#">Santa Cruz</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Endrin	2		
	Ethylene dibromide	3		
	Heptachlor	2		
	Heptachlor epoxide	2		
	Hexachlorobenzene	2		
	Hydroxycarbofuran ( Carbofuran degradate)	7		
	Lindane (gamma-BHC)	2		
	Methiocarb	2		
	Methomyl	7		
	Methoxychlor	2		
	Methyl bromide	13		
	Metolachlor	6		
	Metribuzin	6		
	Molinate	9		
	Naphthalene	13		
	Ortho-dichlorobenzene	16		
	Oxamyl	8		
	Picloram	9		
	Propachlor	6		
	Propoxur	2		
	Silvex	9		
	Simazine	23		
	Tetrachloroethane	16		
	Thiobencarb	9		
	Toxaphene	2		
	Xylene	16		

<a href="#">Shasta</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	10		
	1,2-DCP	10		
	Methyl bromide	10		
	Ortho-dichlorobenzene	10		
	Tetrachloroethane	10		
	Xylene	10		

<a href="#">Sierra</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Not Sampled			

<a href="#">Siskiyou</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	5		

<a href="#">Siskiyou</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2-DCP	5		
	Methyl bromide	5		
	Ortho-dichlorobenzene	5		
	Tetrachloroethane	5		
	Xylene	5		

<a href="#">Solano</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	9		
	1,2-DCP	9		
	1,3-D (telone)	4		
	2,4,5-T	3		
	2,4-D	4		
	Alachlor	4		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Aldrin	4		
	Atrazine	4		
	Bentazon	4		
	Bromacil	3		
	Butachlor	3		
	Carbaryl	2		
	Carbofuran	2		
	Chlordane	4		
	Chlorothalonil	1		
	Dalapon	4		
	DBCP	4		
	Diazinon	3		
	Dicamba	3		
	Dieldrin	4		
	Dimethoate	3		
	Dinoseb	4		
	Diquat dibromide	4		
	Endothall	4		
	Endrin	4		
	Ethylene dibromide	4		
	Glyphosate	2		
	Heptachlor	4		
	Heptachlor epoxide	4		
	Hexachlorobenzene	4		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Lindane (gamma-BHC)	4		
	Methomyl	2		
	Methoxychlor	4		

<a href="#">Solano</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Methyl bromide	4		
	Metolachlor	3		
	Metribuzin	3		
	Molinate	4		
	Naphthalene	7		
	Ortho-dichlorobenzene	9		
	Oxamyl	2		
	Picloram	4		
	Prometryn	2		
	Propachlor	3		
	Silvex	4		
	Simazine	4		
	Tetrachloroethane	9		
	Thiobencarb	4		
	Toxaphene	4		
	Trifluralin	1		
	Xylene	9		

<a href="#">Sonoma</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	22		
	1,2-DCP	22		
	1,3-D (telone)	8		
	2,4,5-T	33		
	2,4-D	43		
	4(2,4-DB), dimethylamine salt	24		
	Acifluorfen, sodium salt	7		
	Acrylonitrile	8		
	Alachlor	27		
	Aldicarb	39		
	Aldicarb sulfone (degradate)	39		
	Aldicarb sulfoxide (degradate)	39		
	Aldrin	17		
	Atrazine	45		
	Bentazon	43		
	BHC (other than gamma isomer)	6		
	Bromacil	18		
	Butachlor	18		
	Carbaryl	39		
	Carbofuran	40		
	Carbon disulfide	8		
	Chlordane	18		
	Chlorobenzilate	6		
	Chloroneb	6		
	Chlorothalonil	9		
	Chlorthal-dimethyl (dacthal / DCPA)	6		

<a href="#">Sonoma</a>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Dacthal degradates	9		
	Dalapon	43		
	DBCP	8		
	DDD	6		
	DDE (degradate)	6		
	DDT	6		
	Diazinon	8		
	Dicamba	42		
	Dichlorprop, butoxyethanol ester	7		
	Dieldrin	17		
	Dimethoate	18		
	Dinoseb	43		
	Diquat dibromide	41		
	Diuron	6		
	Endosulfan	6		
	Endosulfan sulfate (degradate)	6		
	Endothall	39		
	Endrin	18		
	Endrin aldehyde	6		
	Ethylene dibromide	15		
	Glyphosate	7		
	Heptachlor	18		
	Heptachlor epoxide	18		
	Hexachlorobenzene	18		
	Hydroxycarbofuran ( Carbofuran degradate)	39		
	Lindane (gamma-BHC)	18		
	Methiocarb	26		
	Methomyl	39		
	Methoxychlor	18		
	Methyl bromide	20		
	Metolachlor	18		
	Metribuzin	18		
	Molinate	19		
	Naphthalene	14		
	Ortho-dichlorobenzene	22		
	Oxamyl	44		
	Permethrin	6		
	Permethrin, other related compounds	6		
	Picloram	43		
	Prometryn	7		
	Propachlor	18		
	Propoxur	26		
	Silvex	43		
	Simazine	45		
	Tetrachloroethane	22		
	Thiobencarb	19		

<u>Sonoma</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Toxaphene	18		
	Trifluralin	9		
	Xylene	22		

<u>Stanislaus</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	58		
	1,2-DCP	58		
	1,3-D (telone)	38		
	2,4,5-T	2		
	2,4-D	2		
	4(2,4-DB), dimethylamine salt	1		
	Alachlor	17		
	Aldicarb	2		
	Aldicarb sulfone (degradate)	2		
	Aldicarb sulfoxide (degradate)	2		
	Aldrin	2		
	Atrazine	17		
	Bentazon	2		
	BHC (other than gamma isomer)	1		
	Bromacil	12		
	Butachlor	11		
	Carbaryl	2		
	Carbofuran	2		
	Chlordane	2		
	Chlorothalonil	1		
	Dalapon	2		
	DBCP	67	21	0.01 - 0.7
	DDD	1		
	DDE (degradate)	1		
	DDT	1		
	Diazinon	12		
	Dicamba	2		
	Dichlorprop, butoxyethanol ester	1		
	Dieldrin	2		
	Dimethoate	12		
	Dinoseb	2		
	Diquat dibromide	1		
	Endosulfan	1		
	Endosulfan sulfate (degradate)	1		
	Endothall	2		
	Endrin	2		
	Endrin aldehyde	1		
	Ethylene dibromide	65		
	Glyphosate	2		
	Heptachlor	2		

<b><u>Stanislaus</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Heptachlor epoxide	2		
	Hexachlorobenzene	2		
	Hydroxycarbofuran ( Carbofuran degradate)	2		
	Lindane (gamma-BHC)	2		
	MCPA, dimethylamine salt	1		
	MCPP	1		
	Methomyl	2		
	Methoxychlor	2		
	Methyl bromide	58		
	Metolachlor	12		
	Metribuzin	12		
	Molinate	12		
	Naphthalene	50		
	Ortho-dichlorobenzene	58		
	Oxamyl	2		
	Picloram	1		
	Prometon	1		
	Prometryn	11		
	Propachlor	1		
	Silvex	2		
	Simazine	17		
	Terbutryn	1		
	Tetrachloroethane	58		
	Thiobencarb	14		
	Toxaphene	2		
	Trifluralin	1		
	Xylene	58		

<b><u>Sutter</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	3		
	1,2-DCP	3		
	Methyl bromide	1		
	Ortho-dichlorobenzene	3		
	Tetrachloroethane	3		
	Xylene	3		

<b><u>Tehama</u></b>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	36		
	1,2-DCP	36		
	1,3-D (telone)	21		
	Methyl bromide	36		
	Naphthalene	22		

<u>Tehama</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Ortho-dichlorobenzene	36		
	Tetrachloroethane	36		
	Xylene	35		

<u>Trinity</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Not Sampled			

<u>Tulare</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	89		
	1,2-DCP	89		
	1,3-D (telone)	58		
	2,4,5-T	8		
	2,4-D	8		
	ACET (degradate)	19	15	0.112 - 1.25
	Alachlor	52		
	Aldicarb	9		
	Aldicarb sulfone (degradate)	9		
	Aldicarb sulfoxide (degradate)	9		
	Aldrin	14		
	Atrazine	71	1	0.082
	Bentazon	8		
	Bromacil	47	9	0.051 - 2.13
	Butachlor	28		
	Carbaryl	9		
	Carbofuran	9		
	Carbon disulfide	1		
	Chlordane	14		
	Chlorothalonil	14		
	DACT (degradate)	19	15	0.054 - 8.15
	Dalapon	8		
	DBCP	98	28	0.01 - 0.47
	DEA (degradate)	19	1	0.095
	Diazinon	14		
	Dicamba	8		
	Dieldrin	14		
	Dimethoate	28		
	Dinoseb	8		
	Diquat dibromide	8		
	Diuron	19	1	0.367
	DSMN (degradate)	19	9	0.055 - 0.645
	Endothall	15		
	Endrin	14		
	Ethylene dibromide	94		

<u>Tulare</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Glyphosate	8		
	Heptachlor	14		
	Heptachlor epoxide	14		
	Hexachlorobenzene	14		
	Hexazinone	19		
	Hydroxycarbofuran ( Carbofuran degradate)	9		
	Lindane (gamma-BHC)	14		
	Methomyl	9		
	Methoxychlor	14		
	Methyl bromide	56		
	Metolachlor	28		
	Metribuzin	28		
	Molinate	28		
	Naphthalene	85		
	Norflurazon	19	5	0.054 - 0.407
	Ortho-dichlorobenzene	89		
	Oxamyl	9		
	Picloram	8		
	Prometon	18		
	Prometryn	1		
	Propachlor	28		
	Silvex	8		
	Simazine	71	10	0.06 - 0.327
	Tetrachloroethane	89		
	Thiobencarb	28		
	Toxaphene	14		
	Trifluralin	14		
	Xylene	89	1	0.7

<u>Tuolumne</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	8		
	1,2-DCP	8		
	1,3-D (telone)	5		
	Acetochlor	11		
	Acrolein	3		
	Acrylonitrile	3		
	Alachlor	16		
	Atrazine	16		
	Bromacil	11		
	Butachlor	11		
	Cyanazine	11		
	DBCP	3		
	Diazinon	11		
	Dimethoate	11		

<u>Tuolumne</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Ethylene dibromide	3		
	Methyl bromide	8		
	Metolachlor	11		
	Metribuzin	11		
	Molinate	11		
	Naphthalene	8		
	Ortho-dichlorobenzene	8		
	Prometon	11		
	Prometryn	11		
	Simazine	16		
	Terbacil	11		
	Tetrachloroethane	8		
	Thiobencarb	11		
	Xylene	8		

<u>Ventura</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	37		
	1,2-DCP	37		
	1,3-D (telone)	37		
	2,4,5-T	5		
	2,4-D	5		
	Alachlor	7		
	Aldicarb	5		
	Aldicarb sulfone (degradate)	5		
	Aldicarb sulfoxide (degradate)	5		
	Aldrin	4		
	Atrazine	14		
	Bentazon	5		
	Bromacil	7		
	Butachlor	7		
	Carbaryl	5		
	Carbofuran	5		
	Chlordane	4		
	Dalapon	5		
	DBCP	8		
	Diazinon	7		
	Dicamba	5		
	Dieldrin	4		
	Dimethoate	7		
	Dinoseb	5		
	Diquat dibromide	4		
	Diuron	4		
	Endrin	4		
	Ethylene dibromide	8		
	Heptachlor	4		

<u>Ventura</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Heptachlor epoxide	4		
	Hexachlorobenzene	4		
	Hydroxycarbofuran ( Carbofuran degradate)	5		
	Lindane (gamma-BHC)	4		
	Methomyl	5		
	Methoxychlor	4		
	Methyl bromide	36		
	Metolachlor	7		
	Metribuzin	7		
	Molinate	7		
	Naphthalene	36		
	Ortho-dichlorobenzene	37		
	Oxamyl	5		
	Picloram	5		
	Prometryn	7		
	Propachlor	7		
	Silvex	5		
	Simazine	14		
	Tetrachloroethane	38		
	Thiobencarb	8		
	Toxaphene	4		
	Xylene	37		

<u>Yolo</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	1,2,4-Trichlorobenzene	18		
	1,2-DCP	18		
	1,3-D (telone)	18		
	2,4,5-T	14		
	2,4-D	14		
	Alachlor	15		
	Aldicarb	14		
	Aldicarb sulfone (degradate)	14		
	Aldicarb sulfoxide (degradate)	14		
	Aldrin	14		
	Atrazine	15		
	Bentazon	14		
	Bromacil	15		
	Butachlor	15		
	Carbaryl	14		
	Carbofuran	14		
	Chlordane	14		
	Chlorothalonil	14		
	Dalapon	14		
	DBCP	15		

<u>Yolo</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	Diazinon	15		
	Dicamba	14		
	Dieldrin	14		
	Dimethoate	15		
	Dinoseb	14		
	Diquat dibromide	14		
	Endothall	12		
	Endrin	14		
	Ethylene dibromide	17		
	Glyphosate	12		
	Heptachlor	14		
	Heptachlor epoxide	14		
	Hexachlorobenzene	14		
	Hydroxycarbofuran ( Carbofuran degradate)	14		
	Lindane (gamma-BHC)	14		
	Methiocarb	2		
	Methomyl	14		
	Methoxychlor	14		
	Methyl bromide	18		
	Metolachlor	15		
	Metribuzin	15		
	Molinate	15		
	Naphthalene	18		
	Ortho-dichlorobenzene	18		
	Oxamyl	14		
	Picloram	14		
	Prometryn	3		
	Propachlor	15		
	Propoxur	2		
	Silvex	14		
	Simazine	15		
	Tetrachloroethane	18		
	Thiobencarb	15		
	Toxaphene	14		
	Trifluralin	12		
	Xylene	18		

<u>Yuba</u>	Pesticide	Wells Sampled	Wells with Detections	Concentration (ppb)
	1,2,4-Trichlorobenzene	11		
	1,2-DCP	11		
	1,3-D (telone)	6		
	2,4-D	8		
	Azoxystrobin	8		
	Azoxystrobin acid (degradate)	8		

<u>Yuba</u>	<b>Pesticide</b>	<b>Wells Sampled</b>	<b>Wells with Detections</b>	<b>Concentration (ppb)</b>
	Azoxystrobin Z (degradate)	8		
	Bensufuron methyl	8		
	Clomazone	8		
	Glyphosate	2		
	Halosulfuron-methyl	8		
	Methyl bromide	7		
	Molinate	8		
	Naphthalene	11		
	Ortho-dichlorobenzene	11		
	Orthosulfamuron	8		
	Orthosulfamuron	8		
	Penoxsulam	8		
	Propanil	8		
	Propiconazole	8		
	Tetrachloroethane	11		
	Thiobencarb	8		
	Triclopyr, Triethylamine salt	8		
	Xylene	11		

## GLOSSARY OF TERMS

<i>TERM</i>	<i>DEFINITION</i>
<b>AB 1803</b>	(1983) (Chapter 881, Statutes of 1983) A law that required CDPH to evaluate each public water system to determine its potential for contamination. The systems were required to conduct specified water analyses and to report those results. Monitoring required by AB 1803 was completed in June 1989.
<b>AB 2021</b>	See “Pesticide Contamination Prevention Act.”
<b>AB 2701</b>	AB 2701 (Chapter 644, Statutes of 2004) amended the Pesticide Contamination Prevention Act (PCPA) to require DPR to post specified information on sampling for pesticide residues in California ground water to its Web site. This law replaced the previous requirement that DPR submit the sampling information in a written report to the Legislature, SWRCB, and CDPH.
<b>Archived advisory level (AAL)</b>	In 1982 and 1983, CDPH provided advisory levels (then called “action levels” and now called “notification levels”) for a number of chemicals to the Central Valley Regional Water Quality Control Board. Many were pesticides that had not been detected in drinking water but which were nonetheless of concern because of their association with a particular site. Some of those chemicals now have enforceable drinking water standards. The remaining chemicals were archived, along with several others with advisory levels established in 1990-91, or updated more recently. If a chemical is detected above its archived advisory level, the requirements and recommendations are the same as for chemicals detected above their notification levels and response levels. More information is available at: <a href="http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Notificationlevels/archivedadvisorylevels.pdf">http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Notificationlevels/archivedadvisorylevels.pdf</a> .
<b>Active ingredient</b>	The chemical or chemicals in a pesticide formulation that are biologically active and are capable, in themselves, or preventing, destroying, repelling or mitigating insects, fungi, rodents, weeds, or other pests. The remainder of the product consists of one or more <i>inert ingredients</i> (such as water, solvents, emulsifiers, surfactants, clay and propellants), which are there for reasons other than pesticidal activity.
<b>Adjuvant</b>	Chemicals added to a pesticide product to improve its effectiveness, including wetting agents, dispersing agents, stickers, emulsifiers, spreaders, and penetrants. In California, must be registered as pesticides.
<b>Agricultural Commissioner</b>	Local official whose duties include pesticide use enforcement in their counties.

<i><b>TERM</b></i>	<i><b>DEFINITION</b></i>
<b>Agricultural use</b>	<p>The use of any pesticide or method or device for the control of plant or animal pests, or any other pests, or the use of any pesticide for the regulation of plant growth or defoliation of plants. Agricultural use includes but is not limited to commercial production of animals or plants (including forest), parks, golf courses, cemeteries, roadsides, rights-of-way and nurseries. It excludes the sale or use of pesticides intended for:</p> <ol style="list-style-type: none"> <li>a) Home use</li> <li>b) Structural pest control</li> <li>c) Industrial or institutional use</li> <li>d) The control of an animal pest under the written prescription of a veterinarian</li> <li>e) Uses by certain local districts or agencies that operate under a cooperative agreement with the California Department of Public Health, such as many mosquito abatement districts.</li> </ol> <p>See also “legal agricultural use.”</p>
<b>Analysis</b>	For the well inventory data, it is the act of determining whether a substance is present in a water sample using laboratory methodology.
<b>Aquifer</b>	A geologic formation, group of formations, or part of a formation, that is water bearing and which transmits water in sufficient quantity to supply springs and pumping wells.
<b>Cal/EPA</b>	California Environmental Protection Agency. Comprised of the Department of Pesticide Regulation, the Department of Toxic Substances Control, the Water Resources Control Board, the Air Resources Control Board, and the Office of Environmental Health Hazard Assessment.
<b>California Code of Regulations (CCR)</b>	Regulations formally adopted by state agencies. Regulations about pesticides and pest control operations are mainly in Title 3, Division 6, and Title 16, Division 19.
<b>Chemigation</b>	Applying pesticide through an irrigation system or mixing with irrigation water before the water is applied to the soil or crop.
<b>Degradation</b>	<p>With respect to pesticides, degradation is the breakdown of the parent chemical by the action of microbes, water, air, sunlight, or other agents into daughter products (degradates) that may undergo further degradation by similar processes.</p> <p>With respect to ground water quality, degradation refers to a reduction of water quality.</p>

<i><b>TERM</b></i>	<i><b>DEFINITION</b></i>
<b>Detection</b>	A well water sample in which the presence of a pesticide is detected at or above the, minimum detection limit of the analytical instruments used for analysis of the pesticide under investigation. A detection may be designated as confirmed or unconfirmed.
<b>EPA Registration Number (EPA Reg. No)</b>	Assigned by U.S. EPA to identify each pesticide product registration. This number must appear on the product's label.
<b>Environmental fate</b>	Describes the processes by which pesticides move and are transformed in the environment, including persistence in air, water, and soil; reactivity and degradation; migration in groundwater; and bioaccumulation in aquatic or terrestrial organisms.
<b>FAC</b>	Food and Agricultural Code. Division 6 of the FAC (specifically Sections 11401 - 12499) pertains to the registration, sale and use of pesticides.
<b>Formulation</b>	Pesticide product as sold, usually a mixture of active and inert ingredients.
<b>Ground water</b>	Water found below the surface of the land, usually in porous rock formations.
<b>Ground water protection area (GWPA)</b>	A geographic area defined in state regulations as vulnerable to pesticide contamination through the mechanism of either leaching or runoff.
<b>Groundwater Protection List (GWPL)</b>	A list of pesticides having the potential to pollute ground water included in 3 CCR section 6800(b).
<b>Health advisory level (HAL)</b>	An advisory number published by U.S. EPA's Office of Drinking Water and Office of Water Regulations and Standards. Short-term (ten days or less), long-term (seven years or less), and lifetime exposure health advisories for noncarcinogens and suspected human carcinogens are included where data sufficient for derivation of the advisories exist. A HAL is a guideline, which includes a margin of safety to protect human health. For lifetime HALs, water that contains a pesticide at a concentration at or below its HAL is acceptable for drinking every day over the course of one's lifetime.
<b>Inert ingredient</b>	Any substance other than an active ingredient which is intentionally included in a pesticide product. Also known as "other" ingredients, they do not attack a particular pest but may be chemically or biologically active.

<i><b>TERM</b></i>	<i><b>DEFINITION</b></i>
<b>Leaching</b>	A pathway by which agricultural pesticides may reach ground water; the process by which residues are dissolved in soil water and follow the movement of water through the soil matrix as it recharges a ground water aquifer.
<b>Legal agricultural use</b>	The application of a pesticide, according to its labeled directions and in accordance with federal and state laws and regulations, for agricultural use as defined in FAC section 11408.  See also “agricultural use.”
<b>Maximum contaminant level (MCL)</b>	MCLs are adopted as regulations by CDPH. They are health protective drinking water standards to be met by public water systems. MCLs take into account not only chemicals' health risks but also factors such as their detectability and treatability, as well as costs of treatment. Health and Safety Code §116365(a) requires CDPH to establish a contaminant's MCL at a level as close to its PHG as is technically and economically feasible, placing primary emphasis on the protection of public health.
<b>Maximum contaminant level goal (MCLG)</b>	The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
<b>Mitigation measure</b>	A use practice designed to reduce the risk of harm to people or the environment.
<b>Model</b>	Mathematical equations that represent certain processes. These equations can be implemented in a computer program to facilitate calculations and to test model predictions against measured data.
<b>Monitoring well</b>	A well-used principally for any of the follow purposes: (1) observing ground water levels and flow conditions, (2) obtaining samples for determining ground water quality, or (3) evaluating hydraulic properties of water-bearing strata.
<b>Non-agricultural use</b>	<i>See “agricultural use.”</i>
<b>Nonpoint source</b>	Pollution sources which are diffuse and do not have a distinct discharge point (compare with <i>point source</i> ), for example, applications of agricultural pesticide to crops.
<b>Notification level (NL)</b>	Notification levels are health-based advisory levels established by CDPH for chemicals in drinking water that lack maximum contaminant levels (MCLs). When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply. The level at which CDPH recommends removal of a drinking water source from service is called the “response level”. Since the early 1980s, notification levels (known as “action levels” through 2004)

<i>TERM</i>	<i>DEFINITION</i>
	for 93 contaminants have been established. Of those, 39 have gone through the <u>formal regulatory process</u> and now have <u>MCLs</u> . Currently there are 30 chemicals with <u>notification levels</u> . In addition, another 24 chemicals have <u>archived advisory levels</u> , which are also available for use.
<b>Permit</b>	Time- and site-specific permits are issued by county agricultural commissioners for the use of pesticides designated as restricted materials.
<b>Pest</b>	Any undesired insect, rodent, nematode, fungus, bird, vertebrate, invertebrate, weed, virus, bacteria or other microorganism (except microorganisms on or in humans or animals) which is declared to be injurious to health or environment.
<b>Pest control</b>	The use or application of any pesticide. It also means the use of any substance, method or device to control pests; prevent, destroy, repel, mitigate or correct any pest infestation or disorder of plants; or inhibit, regulate, stimulate or otherwise alter plant growth by direct application to plants.
<b>Pesticide</b>	A substance, or mixture of substances, intended to defoliate plants, regulate plant growth, or prevent, destroy, repel, or mitigate any insects, fungi, bacteria, weeds, rodents, predatory animal, or any other form of plant or animal life declared to be a pest detrimental to vegetation, man, animal, or households, or any environment. Also, in California only, a spray adjuvant.
<b>Pesticide Contamination Prevention Act (PCPA, AB 2021)</b>	A law, effective January 1, 1986, which added agricultural use sections 13141 through 13152 to Division 7 of the FAC. The PCPA requires the following: 1) each registrant of an agricultural use pesticide to submit environmental fate data to DPR; 2) the director to use those data to establish a list of pesticides with the potential to pollute ground water (GWPL); 3) the director to monitor ground water for these pesticides; 4) all local, county, and state agencies to report to DPR the results of pesticides sampled in ground water; 5) the director to maintain a specified well sampling database and to post certain information annually on its website about pesticides in ground water; and 6) a specified subcommittee and the director to conduct a formal review to determine if continued use of a pesticide can be allowed if it is detected and verified in ground water due to legal agricultural use.
<b>Pesticide Management Zone (PMZ)</b>	A geographic surveying unit of approximately one square mile, which is vulnerable to ground water contamination based on detections of pesticides or pesticide degradates in ground water due to agricultural use. PMZs were formally listed in section 3 CCR section 6802 and were pesticide specific. The use of a pesticide inside its PMZs was subject to certain ground water protection restrictions and requirements. PMZs were renamed GWPAs in May 2004.
<b>Point source</b>	A source of contamination, such as a spill or at a waste site that is initially deposited and concentrated in a small, well-defined area.
<b>Pollution</b>	This term, as used in this report, is defined in FAC section 13142 as the introduction into the groundwaters of the state an active ingredient, its degradation

<i><b>TERM</b></i>	<i><b>DEFINITION</b></i>
	product, or other specified product, above a level that does not cause adverse health effects.
<b>Public health goal (PHG)</b>	PHGs are established by s <u>OEHHA</u> . They are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime, based on current risk assessment principles, practices, and methods. OEHHA establishes PHGs pursuant to Health and Safety Code §116365(c) for contaminants with MCLs, and for those for which CDPH will be adopting MCLs.
<b>Range</b>	When used in the context of mapping locations, a range is a single series or row of townships, each six miles square, extending parallel to, and numbered east and west from, a survey base meridian line.  A range is a vertical column of townships.
<b>Registered pesticide</b>	A pesticide product approved by the U.S. EPA and DPR for use in California.
<b>Regulations</b>	These are adopted by state agencies to implement or clarify statutes enacted by the California Legislature. They can also be adopted in response to federal legislation, court decisions, changing technologies, and concerns for the health and well-being of the residents of California.
<b>Restricted material</b>	A pesticide that with certain exceptions may be possessed or used only by or under the supervision of licensed or certified persons, and only in accordance with a permit issued by the CAC.
<b>Section</b>	Section/Township/Range: Public Land Survey System units. A section is a one-square-mile block of land containing 640 acres. A township is contains 36 sections. A range is a vertical column of townships.
<b>Specific numerical values (SNV)</b>	Certain numeric threshold values that the PCPA requires to be established for the following physical and chemical properties of pesticide active ingredients: water solubility, soil adsorption coefficient, hydrolysis, aerobic, and anaerobic soil metabolism, and field dissipation (the field dissipation SNV has not been established). The PCPA associates these properties with the longevity and mobility of a pesticide in the soil and requires the establishment of SNVs in regulation as a means of predicting which pesticides are likely to pollute ground water.
<b>State Well Number</b>	A unique number assigned to a well consisting of the county number/township/range/section/tract and sequence number.
<b>Township</b>	When used in the context of mapping locations, a township is a public land surveying unit that is a square parcel of land, six miles on each side. The location of a township is established as being so many six-mile units east or west of a north-south line running through an initial point (called the “principal meridian”) and so many six-mile units north or south of an east-west line running through another

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<i><b>TERM</b></i>	<i><b>DEFINITION</b></i>
	point (called the “baseline”).
	A township normally contains 36 sections.
<b>Triazine</b>	A pesticide derived from any of three isomeric compounds, each having three carbon and three nitrogen atoms in a six-member ring. Triazine herbicides are strong inhibitors of photosynthesis. Atrazine and simazine are examples of commonly used triazine herbicides.
<b>Well Inventory Database</b>	A statewide database, required by the PCPA and maintained by DPR, of wells sampled for pesticides and pesticide degradates.