SAMPLING FOR PESTICIDE RESIDUES IN CALIFORNIA WELL WATER

39th Annual Well Sampling Report | 2025 Update

California Environmental Protection Agency
Department of Pesticide Regulation
Environmental Monitoring Branch
Groundwater Protection Program

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SUMMARY

As required by the Pesticide Contamination Prevention Act (PCPA) under Food and Agricultural Code (FAC) section 13152(e), this report summarizes the results of groundwater sampling in California for pesticide residues by the Department of Pesticide Regulation (DPR) and other agencies that reported their results to DPR. This 39th annual Well Sampling Report (annual report) includes well sampling data from DPR and the State Water Resources Control Board (SWRCB) for samples taken between January and December 2024, and well sampling data from the United States Geological Survey (USGS) and Tribes reporting to the Water Quality Portal (WQP) for samples taken between January and December 2023. Some of the WQP data are listed as preliminary and could be subject to change.

The report consists of background information, two main tables, multiple appendices, and a glossary.

- The background information includes steps DPR takes to implement the PCPA.
- Table 1 summarizes the well sampling data from all three data sources.
- Tables 2B–2E provide additional information about the specific pesticides or pesticide degradates with reported detections and identify actions taken by DPR to prevent migration of pesticides to groundwater from nonpoint agricultural sources.
- Table 2A includes definitions of the State and federal drinking water quality standards or health levels listed for each compound in Tables 2B–2E.
- Appendix A describes how DPR creates Groundwater Protection Areas (GWPAs) and implements regulations to mitigate the movement of specific pesticides to groundwater.
- Appendix B explains the core functions of the three data sources contributing groundwater monitoring data for this report.
- Appendix C describes DPR's Well Inventory Database (WIDB).
- Appendix D summarizes the well sampling results by county. [1]

A total of 5,424 wells were sampled for one or more of 212 pesticides or degradates (Table i).[2] Sixty-four pesticides or degradates were detected; seventeen of the detected pesticides are not currently registered for use in California (e.g., detections from legacy pesticide use or non-pesticidal use) (Table 2E).

[1] Although DPR is required to provide locations of sampled wells, information in the report is summarized by county to protect well owner privacy. DPR can provide additional location information—including township, range, and section—upon request or at: https://calpip.cdpr.ca.gov/wellInventoryDatabase.cfm.

[2] Some exceptions to the "agricultural use" status of 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 different monitoring goals of reporting agencies.

Table i. Summary of well sampling results for the 39th annual report

Sampling Data Type		DPR	SWRCB	WQP	Total[a]	Percent with Detections
	Pesticides & Degradates Sampled[b]	63	115	116	212	**30.2%**
	Pesticides & Degradates Detected	26	17	41	64	
	Wells Sampled[c]	139	5,100	193	5,424	**9.5%**
	Wells with Detections	120	332	62	514	
	Counties Sampled	10	58	35	58	**53.4%**
	Counties with Detections	9	22	19	31	

a. "Total" reflects total *unique* values, not a summation of values for all three data sources. For example, of the 212 pesticides and degradates sampled for, some are sampled for by more than one agency, but some are sampled for by only one.
b. "Pesticides & Degradates Sampled" and "Pesticides & Degradates Detected" are the total number of pesticides or degradates sampled for or detected in groundwater regardless of the number of sampling events or detections that occurred during the reporting period.
c. "Wells Sampled" and "Wells with Detections" represent the total number of wells sampled or found to have pesticide residues regardless of the number of sampling events or detections that occurred during the reporting period.

PREFACE

This report fulfills the requirements of the Pesticide Contamination Prevention Act of 1985 (PCPA), Assembly Bill (AB) 2701 of 2004, and Senate Bill (SB) 1117 of 2014. The PCPA originally required the Department of Pesticide Regulation (DPR) to submit groundwater sampling results for pesticide residues in an annual written report; AB 2701 amended the PCPA to require DPR to post the information on DPR's website.

ACKNOWLEDGEMENTS

The authors wish to thank the reviewers whose unique perspectives and experiences helped ensure this report's accuracy and readability. We gratefully acknowledge the volunteers who allowed DPR to sample their wells, cooperating federal, state, local, and private agencies, and DPR staff for collecting samples and contributing to the database.

DISCLAIMER

As required by the PCPA, this report describes the active ingredients of registered pesticide products that have been detected in groundwater. 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.

GENERAL ABBREVIATIONS

Abbreviation	Terminology
AB	Assembly Bill
CAC	County Agricultural Commissioner
CALVUL	California Vulnerability Model
3CCR	Title 3, California Code of Regulations
CDPH	California Department of Public Health
DDW	Division of Drinking Water
DPR	Department of Pesticide Regulation
DWEL	Drinking Water Equivalent Level
FAC	Food and Agricultural Code
GAMA	Groundwater Ambient Monitoring and Assessment Program
GWPA	Groundwater Protection Area
GWPL	Groundwater Protection List
GWPP	Groundwater Protection Program
HA	Health Advisory
HBSL	Health-Based Screening Level
HHBP	Human Health Benchmark for Pesticide
HHRL	Human Health Reference Level
LLNL	Lawrence Livermore National Laboratory
LEACHM	Leaching Estimation and Chemistry Model
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
OEHHA	Office of Environmental Health Hazard Assessment
PCPA	Pesticide Contamination Prevention Act
PHC	Public Health Concentration
PHG	Public Health Goal
PMZ	Pesticide Management Zone
ppb	Parts per billion
PREC	Pesticide Registration and Evaluation Committee
RL	Reporting Limit
RMPP	Restricted Materials Permit Program
SB	Senate Bill
SDWIS	State Drinking Water Information System
SNV	Specific Numerical Value
SL	Screening Level
SWRCB	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WIDB	Well Inventory Database
WIR	Well Inventory Report
WQP	Water Quality Portal

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BACKGROUND

Protecting Groundwater from Pesticide Contamination — The PCPA

The California Department of Pesticide Regulation (DPR) began addressing pesticide contamination of groundwater in the early 1980s after the discovery of 1,2-dibromo-3-chloropropane (DBCP) in well water. Subsequent reports of pesticides in groundwater led to the passage of the Pesticide Contamination Prevention Act (PCPA) of 1985,[3] an act designed to prevent pesticide pollution[4] of groundwater by agricultural use[5] pesticides, with emphasis on the protection of public drinking water supplies.

The PCPA of 1985 added Article 15 (sections 13141–13152) to the Food and Agricultural Code (FAC). FAC section 13150 allows the continued sale and use of detected pesticides that were determined to pollute or threaten to pollute groundwater provided certain conditions for use have been met. DPR authorizes use modifications of these pesticides under the Restricted Materials Permit Program (RMPP) (Title 3, California Code of Regulations [3CCR] section 6400 et seq.), implemented by California's County Agricultural Commissioners (CACs). DPR continues to monitor for pesticides and degradates that were determined not to pollute at the levels detected.

The PCPA authorized the establishment of a program that identifies pesticides that have the potential to pollute groundwater.[6] Under this program, DPR is required to conduct groundwater monitoring for pesticides, maintain a database of wells sampled for pesticides, and conduct a formal review to determine if use of detected pesticides can continue as currently allowed, if modified use restrictions are necessary, or if all uses should be prohibited. **Figure 1** shows the major steps of the PCPA that the DPR follows to protect groundwater.

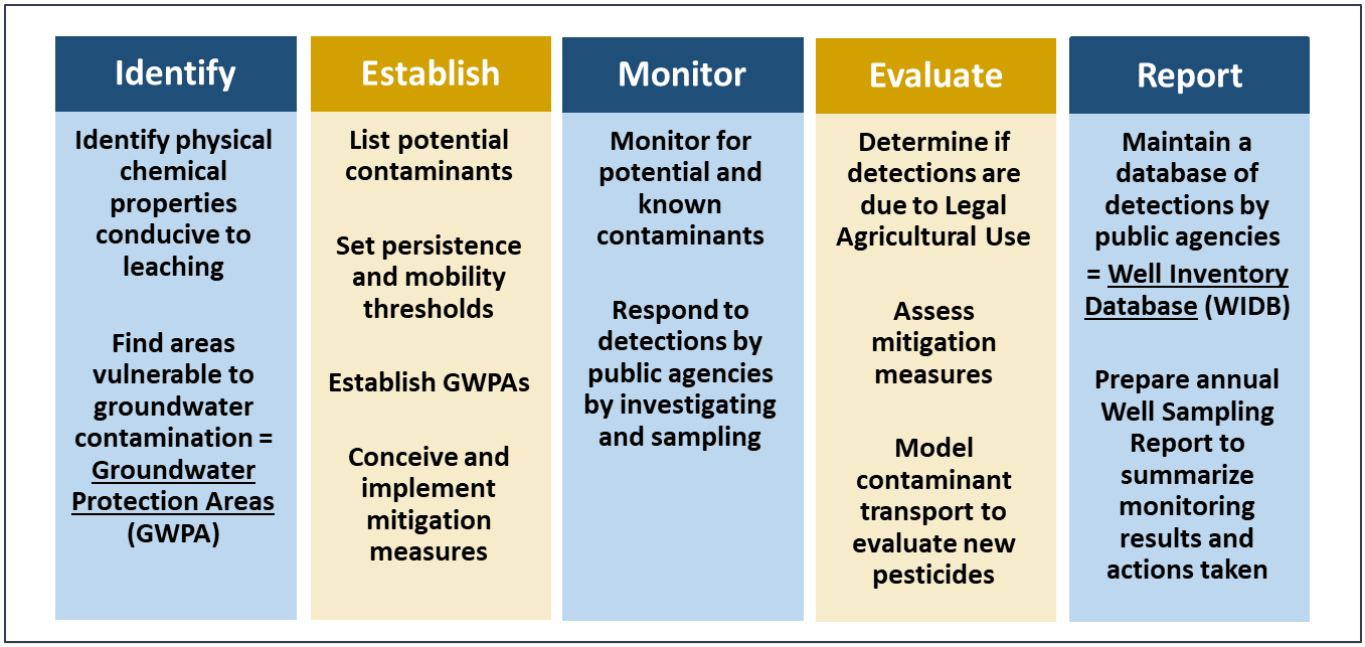
[3] The PCPA added sections 13141-13152 to the FAC. 3CCR sections 6416-6487.5 and 6800-6804 implement these FAC sections.

[4] FAC section 13142 defines "*pollution" as "*the consequence of polluting," and "*pollute*" as "…to introduce a pesticide product into the groundwaters of the state resulting in an active ingredient, other specified ingredient, or a degradation product of a pesticide above a level that does not cause adverse health effects, accounting for an adequate margin of safety."

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

[6] See DPR's Groundwater Protection Program.

Figure 1. Five major steps to protect groundwater through the Pesticide Contamination Prevention Act (PCPA)



To implement the PCPA, DPR:

- Obtains physical/chemical/environmental fate data from pesticide registrants to support the registration of agricultural use pesticides; maintains the data in DPR's Pesticide Chemistry Database (see California Pesticide Electronic Submission Tracking (CalPEST)).

- Uses data in the Pesticide Chemistry Database to establish persistence and mobility threshold values called specific numerical values (SNVs)[7] and evaluates the groundwater pollution potential of agricultural use pesticides based (in part) on these values. **NOTE:** SB 1117 modified the process for determining pollution potential by requiring DPR to develop a peer-reviewed method[8] (in consultation with a subcommittee of the Director's Pesticide Registration and Evaluation Committee [PREC subcommittee]) to determine the potential of a pesticide to pollute groundwater using SNVs. A new peer-reviewed method has been developed in consultation with the PREC subcommittee and the report is posted to DPR's website (Troiano et al., 2024). The proposed regulations were noticed in May 2025. The public comment period closed in July 2025, and staff are currently reviewing the responses. The regulations are expected to be finalized in the Summer of 2026.

[7] SNV threshold values for all parameters are listed in 3CCR section 6804.

[8] Peer review was conducted using the process described in section 57004 of the Health and Safety Code.

- Compiles the Groundwater Protection List (GWPL)[9] that includes agricultural use pesticide active ingredients, other specified ingredients, and degradation products that have the potential to pollute groundwater. Pesticides whose use has been modified following their detection in groundwater are added to 3CCR section 6800(a) of the GWPL.[10]

- Utilizes contaminant transport modeling tools to:
    - Evaluate the contamination potential of pesticides prior to their California registration
    - Prioritize pesticides for monitoring
    - Define Groundwater Protection Areas (GWPAs).[11]

- Monitors for agricultural use pesticides on the GWPL and their degradates to determine if they have migrated to groundwater.

- Evaluates reported pesticide and degradate detections in groundwater, including those reported by other agencies.[12]

- Determines whether the detection of a pesticide in groundwater is the result of legal agricultural use[13] and, if so, conducts a formal review process to determine if the pesticide's use can continue as currently allowed, with modified use restrictions, or if all uses should be prohibited.[14]

- Conducts ongoing groundwater monitoring of pesticides whose continued use has been modified to prevent pollution or that were determined not to pollute at the levels initially detected.

- Continuously reviews new science and data that could impact the validity of a finding that a pesticide has not polluted and does not threaten to pollute groundwater.[15]

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[9] The GWPL (3CCR section 6800) is currently divided into two parts. Section 6800(a) includes seven chemicals that have been detected in groundwater and are regulated as groundwater contaminants with the potential to pollute: atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine. Section 6800(b) includes 98 chemicals that have the potential to become groundwater contaminants based on their mobility, persistence, and legal uses. SB 1117 requires DPR to *"…include on the GWPL each active ingredient, other specified ingredient, and degradation product of a pesticide that, when applied, has the potential to pollute groundwater."*

[10] Previously detected pesticides on the GWPL (3CCR section 6800[a]) that require use modifications include atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine.

[11] See Appendix A for more information on GWPAs.

[12] See Appendix B for a list of reporting agencies and a discussion of their role in the PCPA process.

[13] Legal agricultural uses include pesticide applications made in accordance with the registered pesticide label.

[14] The formal review process is outlined in section 13150 of the FAC.

[15] Chlorthal-dimethyl (DCPA) degradates, hexazinone, imidacloprid, and metolachlor/S-metolachlor degradates were determined not to have polluted or threatened to pollute groundwater in the state, but continued monitoring of each was recommended (Leahy, 2017; Leahy, 2018; Henderson 2022; Reardon, 2011).

- Resubmits a pesticide to the formal review process or mitigates the threat if new evidence indicates that continued use of a previously reviewed pesticide threatens to pollute groundwater.

In addition, DPR:

- Maintains the Well Inventory Database of pesticide detections in groundwater reported to DPR by local, county, state, and federal agencies.[16]

- Prepares an annual Well Sampling Report[17] that summarizes monitoring results and specifies actions taken by DPR in response to detections from nonpoint agricultural sources.

Identifying Potential Groundwater Contaminants Under the PCPA

DPR developed several evaluation procedures to estimate a pesticide's potential to pollute groundwater. These procedures are described below.

Using environmental fate data to predict pesticide behavior in the environment

The PCPA required DPR to establish threshold SNVs for six physical/chemical parameters presumed to be correlated to a pesticide's potential to leach to groundwater: water solubility, soil organic carbon coefficient (Koc), hydrolysis half-life, aerobic soil metabolism half-life, anaerobic soil metabolism half-life, and field dissipation half-life. Water solubility and Koc are indicators of mobility within the soil, while hydrolysis half-life, aerobic and anaerobic soil metabolism, and field dissipation are indicators of the persistence of the pesticide in soil.[18] A pesticide is predicted to have the potential to leach to groundwater if it is both mobile and persistent.

DPR developed threshold SNVs by evaluating nationwide groundwater studies and performing a statistical comparison of the physical/chemical attributes of pesticides detected in groundwater as a result of legal agricultural use (called leachers), and pesticides not detected (non-leachers). Analysis showed data for water solubility, hydrolysis half-life, Koc, and anaerobic soil metabolism half-life were significantly different for leachers and non-leachers (Johnson, 1991).[19] However, leacher and non-leacher aerobic soil metabolism data were not significantly different.[20]

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[16] See Appendix C for more information on the Well Inventory Database.

[17] Annual Well Sampling Reports are located at: https://www.cdpr.ca.gov/reports-directory/.

[18] Although DPR has not 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.

[19] An evaluation of SNVs for these properties resulted in the identification of 90 percent of the chemicals detected in groundwater due to legal agricultural use.

[20] The PCPA requires DPR to establish an SNV for each physical/chemical parameter, but because soil metabolism half-life appears to be an ineffective predictor of a pesticide's groundwater contamination potential, the SNV for aerobic soil metabolism half-life is set at a value that minimizes its impact in the discrimination procedure.

After establishing threshold SNVs, DPR scientists used the physical/chemical data to characterize a pesticide's behavior in the environment. Pesticides that exceed at least one mobility SNV, one persistence SNV, and are applied under specific conditions are placed on the GWPL and monitored to determine if they have migrated to groundwater as a result of their legal agricultural use.

- SB 1117 modified the process for estimating pollution potential by requiring DPR to develop a peer-reviewed SNV-based method in consultation with the Director's PREC subcommittee. Scientific peer review of this revised method has been completed in consultation with the PREC subcommittee. The proposed regulations were noticed in Spring 2025. The public comment period closed in July 2025 and staff are currently reviewing the responses. The regulations are expected to be finalized in the Summer of 2026.

Using computer modeling tools to predict pesticide contamination potential

In addition to evaluating the contamination potential of agricultural use pesticides by comparing SNV values, DPR scientists use two computer models to predict pesticide behavior.[21]

- **LEACHM**, the ***leaching estimation and chemistry model*** (Hutson, 2003), is a pesticide fate and transport modeling tool used to evaluate leaching potential. The model enables DPR scientists to predict a pesticide's movement through the root zone of a leaching-vulnerable soil (Spurlock, 2000) and predict the occurrence and magnitude of well water concentrations based upon mobility and persistence data, label information, climate data, and label-recommended irrigation practices (Troiano and Clayton, 2009). If the pesticide is determined to be a potential groundwater contaminant following the evaluation, the registrant is required to take steps (e.g., amending the product label or committing to a stewardship program) to mitigate the potential threat to groundwater before DPR approves the pesticide for use in California. If mitigation is not possible, California registration is denied.

- **CALVUL**, *the* ***California vulnerability model***, is used to determine sections of land in California that are vulnerable to pesticide contamination based on soil type and depth-to-groundwater (Troiano et al., 2000). If pesticide use on a given section is deemed likely to result in groundwater contamination, the section is designated a GWPA.[22] Currently, only pesticides listed under 3CCR section 6800(a) are regulated within GWPAs.

[21] 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.

[22] To use a pesticide regulated as a groundwater contaminant in a GWPA, users must obtain a Restricted Materials permit from their CAC. 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

DPR ranks pesticides predicted to have the potential to contaminate groundwater to prioritize groundwater monitoring.[23] This ranking enables DPR to focus limited resources on pesticides that present the greatest contamination risk. DPR assigns the highest priority to California-registered agricultural use pesticides that are:

- On the GWPL;[24]
- Reported as detections in groundwater by public agencies (see Appendix B for a list of reporting agencies);
- Predicted to have a higher likelihood of contaminating groundwater based on computer-simulated transport modeling or based on a review of new science and data that indicate the pesticide could potentially pollute groundwater; or
- Used intensively, or whose use is increasing.

DPR also assigns a higher priority to pesticides that:

- Have been detected previously in California; or
- Have no monitoring history in California and have been detected in other states.

Responding to Pesticide Detections in Groundwater

DPR conducts groundwater monitoring to confirm detections of agricultural use pesticides but does not conduct additional sampling if the detected pesticide is:

- Not registered for use as a pesticide in California (e.g., detections from legacy pesticide use or from non-pesticidal use);
- Reported in error or is an invalid detection due to unacceptable analytical quality;
- Not detected in follow-up samples taken by the reporting agency;
- Detected at a concentration below DPR's screening level (SL) (i.e., less than 70 percent of DPR's analytical reporting limit; the current SLs are included in Tables 2B-2D;[25]
- Regulated as a groundwater contaminant under 3CCR section 6800(a) and detected in a GWPA where use of the pesticide is regulated;
- Registered for use as a pesticide but also occurs naturally (such as copper); or
- Detected in a private well that DPR does not have permission to sample.

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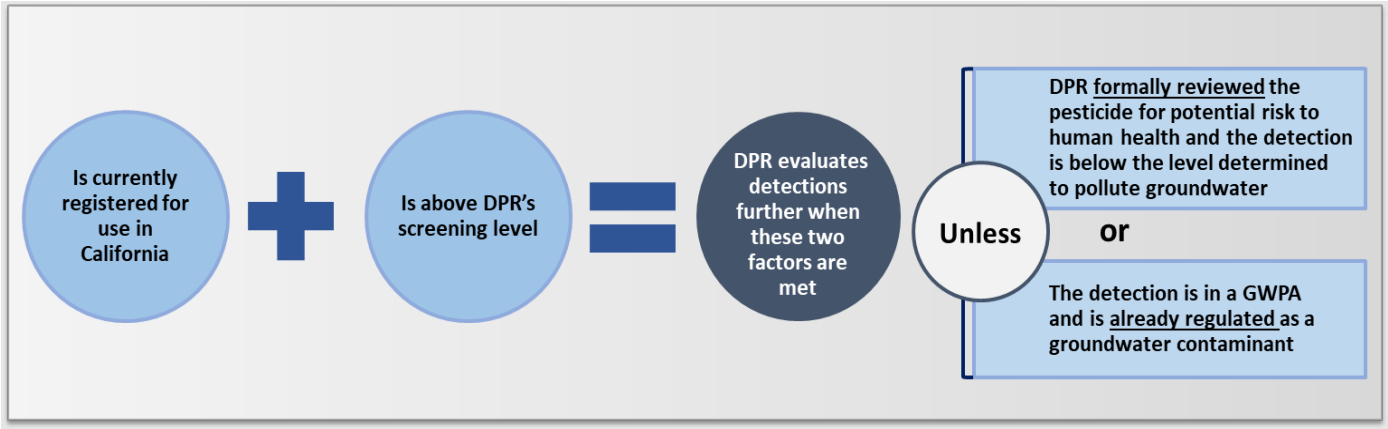
[23] For more information on pesticide monitoring ranking, see *Selection of Pesticide Active Ingredients for Future Analytical Method Development and Ground Water Monitoring* (Clayton, 2011).

[24] DPR samples groundwater for pesticides on the GWPL to 1) determine if pesticides identified as potential contaminants have migrated to groundwater as a result of their legal agricultural use; 2) expand GWPAs if regulated pesticides are detected in new sections; and 3) assess the effectiveness of mitigation measures used in GWPAs.

[25] DPR only responds to detections of pesticides over the SL (Tables 2B-2D) unless the drinking water quality standard (health advisory goal/standard) is lower. DPR's detection response policy is available upon request (Ganapathy, 2022).

DPR will defer sampling and place a pesticide on a "watch list" if the pesticide was detected at a concentration below DPR's SL, or if DPR has not yet developed an analytical method that meets the requirements necessary to validate the detection. Figure 2 provides a simplified version of DPR's process for deciding when to conduct further evaluation.

Figure 2. Simplified diagram of DPR's responses to all reported detections of currently registered pesticides or their degradates



If groundwater detections of an active ingredient or its degradates are determined to originate from a pesticide's legal agricultural use, the findings are subject to a formal review process to determine if the pesticide's use can continue as currently allowed, with modified use restrictions, or if all uses should be prohibited.[26] If DPR determines that use can be modified to the extent that there is a high probability it will not pollute, DPR adds the pesticide to 3CCR section 6800(a) of the GWPL and requires applicators to adopt mitigation measures when applying the pesticide in GWPAs. Detections of agricultural use pesticides (or their degradates or other specified ingredients) that do not trigger the formal review process or are determined not to pollute are placed on a "watch list" and tracked by DPR for changes in detection concentration or frequency.

If a detected pesticide is added to the GWPL and regulated as a groundwater contaminant under 3CCR section 6800(a)—and the well is located within a GWPA—regulation of use under the RMPP constitutes an adequate DPR response to detections, unless concentrations are high enough to indicate existing mitigation measures are insufficient to prevent pollution. If the well is not located in a GWPA, DPR may establish a GWPA that includes the well site if: 1) the well is in a

[26] Pesticides that have been subject to the formal review process include aldicarb (1988); atrazine (1986); bentazon (1989); bromacil (1986); chlorthal-dimethyl (DCPA) (2019); diuron (1986); hexazinone (2010); imidacloprid (2021); metolachlor/S-metolachlor (2016); norflurazon (1998); prometon (1986); and simazine (1986). Except for aldicarb, chlorthal-dimethyl (DCPA), hexazinone, imidacloprid, and metolachlor/S-metolachlor, DPR determined that agricultural use of these pesticides could be modified so that there is a high probability their continued use would not pollute groundwater. In 1988, statewide use restrictions were adopted for aldicarb. Chlorthal-dimethyl (DCPA) degradates, imidacloprid, hexazinone, and metolachlor/S-metolachlor degradates were determined not to have polluted or threatened to pollute groundwater in the state but continued monitoring of each was recommended (Leahy, 2017; Leahy, 2018; Henderson, 2022; Reardon, 2011). Another pesticide recently placed in the formal review process was alachlor (2016). The formal review of alachlor was suspended due to the imminent federal cancellation of all alachlor products which was published by USEPA in the Federal Register on 6/30/2016. As of 12/31/2016, all products containing alachlor previously registered for use in California were inactive.

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. (For more information on GWPAs, see Appendix A.)

Areas of non-authorization

State law does not authorize DPR to regulate pesticide use when detections in groundwater result from manufacturing processes, accidental spills/releases, or illegal disposal; DPR refers these detections to SWRCB for further investigation.

Assessing the Effectiveness of Mitigation Measures

In 1999, DPR established a well monitoring network (Well Network) to evaluate baseline pesticide concentrations to measure the effectiveness of groundwater protection regulations. Currently, DPR's Well Network includes about 60 shallow, domestic wells located in runoff and/or leaching GWPAs in Fresno and Tulare counties. Previous DPR analysis suggests that DPR's regulatory actions have resulted in measurable decreases in both detection frequencies and well water concentrations for many regulated pesticides (Davalos, 2021; Henda and Hawkins, 2025; Garretson, 1999; Troiano et al., 2013).

SAMPLING RESULTS

Detections of Pesticides and Related Degradates

This 39th annual report includes well sampling data from DPR and SWRCB for samples taken between January and December 2024, and well sampling data from USGS and Tribes reporting to WQP for samples taken between January and December 2023. Some of the WQP data included in the annual report may be listed as preliminary and could be subject to change. Table 1 consists of well sampling data from all three data sources.

The three data sources reported a total of 5,424 wells sampled for one or more of 212 pesticides or degradates. Of the wells sampled, 514 wells had reported detections of one or more pesticides or degradates. Sixty-four pesticides or degradates were detected; seventeen of the detected pesticides are not currently registered for use in California (e.g., detections from legacy pesticide use or non-pesticidal use) (Table 2E).

Sampling data were collected from wells in 58 counties. Thirty-one counties had wells with detections. (See Appendix D for county sampling results.)

The following figure provides the top ten registered AIs and their degradates detected by all three data sources at or above the SL as a percent of the top ten (Figure 3).

Figure 3. Top ten registered pesticides and their degradates with the most detections. Degradates shared by more than one parent were added to each associated parent.

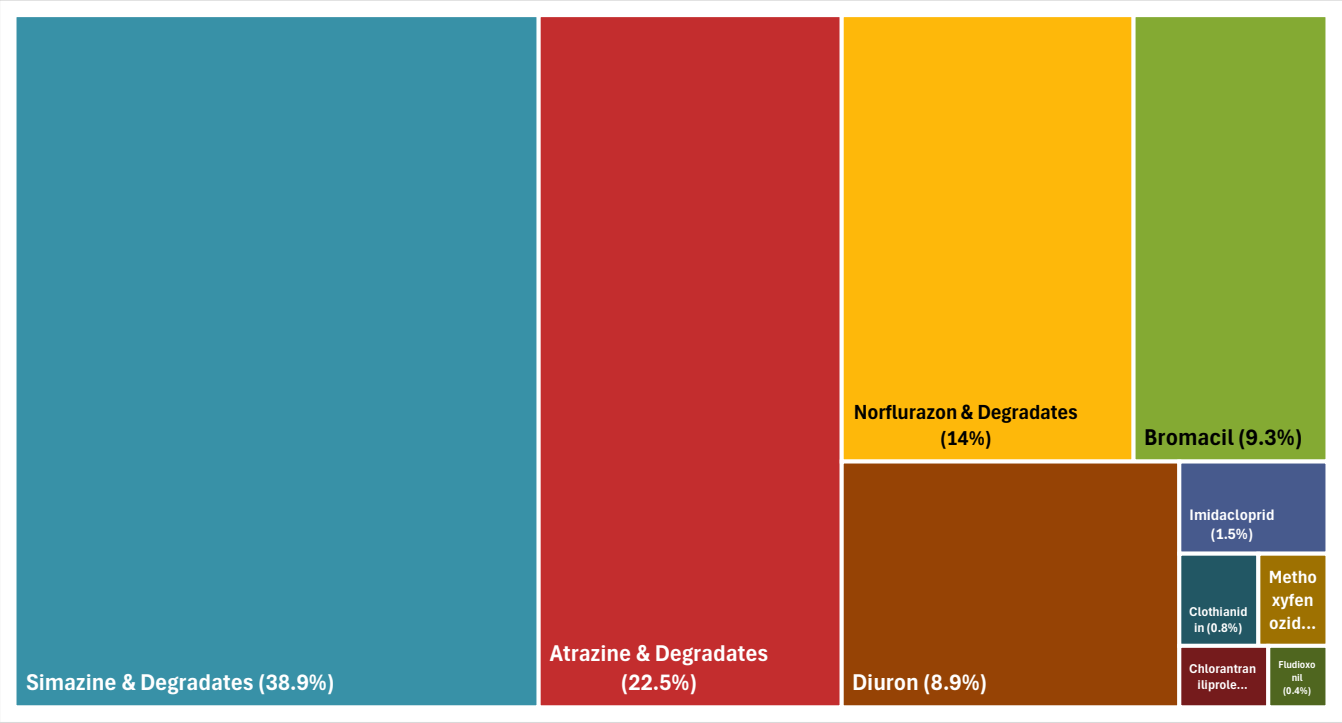


Table 1. Summary of the well sampling results by pesticide or degradate

Note: Definitions of acronyms and abbreviations are available on pages v-vi.

Reporting Limit Range:

- **Zero (0) reporting limit** indicates no value was reported for at least some of the analyses.
- 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, USGS may report *estimated values*, which can be below reporting limits.

Detected Concentrations:

- **Reported ranges of concentrations detected** are listed for pesticides or degradates (rows with detections are **bold** for emphasis). Duplicate samples (samples taken from the same location on the same day) are not counted here, only the maximum concentration of the two samples is listed. Tables 2B–2E provide more information about the detections.
- **Dashes (-)** indicate no residues were detected.

Parent Compound Registration Status:

- **A** indicates the parent pesticide is actively registered for use in California.
- **I** indicates the parent pesticide is no longer actively registered for use in California (inactive).
- **NR** indicates the parent pesticide is currently not registered for use in California (e.g., detections from legacy pesticide use or non-pesticidal use).

Sampling Agencies:

- Sampling Agencies are coded as: (1) DPR; (2) USGS; (3) SWRCB; (4) Cahto Tribe of the Laytonville Rancheria

Pesticide or Degradate	Parent Compound CA Registration Status	Positive Samples/ Samples Taken	Positive Wells/ Wells Sampled	Positive Counties/ Counties Sampled	Reporting Limit Range (ppb)	Detected Concentration Range (ppb)	Sampling Agencies
1-(3,4-Dichlorophenyl)-3-methyl urea (DCPMU, diuron desmethyl, degradate of diuron)	**A**	**2/75**	**2/75**	**2/15**	**0.005**	**0.002 - 0.008**	**2**
1,2-Dichloropropane (1,2-D)	**I**	**79/7249**	**21/3645**	**11/58**	**0.004 - 2.5**	**0.003 - 1.2**	**2, 3, 4**
1,3-Dichloropropene (1,3-D; telone)	A	0/6787	0/3363	0/58	0.4 - 0.5	-	3
1,4-Dichlorobenzene (P-DCB)	A	0/7234	0/3631	0/58	0.026 - 2.5	-	2, 3, 4
1H-1,2,4-Triazole (tautomer of 1,2,4-Triazole)	**NR**	**1/75**	**1/75**	**1/15**	**0.022**	**0.03**	**2**
2,4,5-Trichlorophenol	I	0/3	0/3	0/1	2	-	4
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	I	0/1031	0/719	0/36	0.09 - 2	-	3
2,4,6-Trichlorophenol	NR	0/10	0/5	0/2	1 - 2	-	3, 4
2,4-D	A	0/2308	0/1684	0/50	0.062 - 10	-	2, 3
2,4-DB	A	0/516	0/318	0/24	0.2 - 10	-	3
2,4-Dichlorophenol (degradate of 2,4-D)	A	0/25	0/20	0/5	1 - 2	-	3, 4
2,4-Dimethylphenol	A	0/25	0/20	0/5	1 - 5	-	3, 4

Pesticide or Degradate	Parent Compound CA Registration Status	Positive Samples/ Samples Taken	Positive Wells/ Wells Sampled	Positive Counties/ Counties Sampled	Reporting Limit Range (ppb)	Detected Concentration Range (ppb)	Sampling Agencies
2-Amino-n-isopropylbenzamide (AIBA, degradate of bentazon)	A	0/138	0/138	0/10	0.02	-	1
3,5-Dichlorobenzoic acid	NR	0/453	0/268	0/20	0.5 - 1	-	3
3-Hydroxycarbofuran (degradate of carbofuran)	I	0/1097	0/838	0/35	0.1 - 3	-	3
3-PBA (degradate of pyrethroids)	A	0/75	0/75	0/15	0.061	-	2
4-Hydroxy chlorothalonil (degradate of chlorothalonil)	A	0/75	0/75	0/15	0.042	-	2
4-Nitrophenol (degradate of parathion insecticides)	I	0/10	0/5	0/2	5	-	3, 4
Acephate	A	0/75	0/75	0/15	0.01	-	2
ACET (degradate of atrazine and simazine)	**A**	**112/214**	**112/214**	**9/21**	**0.02 - 0.05**	**0.002 - 0.592**	**1, 2**
Acetochlor	NR	0/501	0/248	0/19	0.01 - 0.1	-	2, 3
Acetochlor ESA (degradate of acetochlor)	NR	0/75	0/75	0/15	0.32	-	2
Acetochlor OA (degradate of acetochlor)	NR	0/75	0/75	0/15	0.065	-	2
Acifluorfen	I	0/482	0/275	0/20	0.2 - 1	-	3
Acrolein	A	0/493	0/219	0/3	5 - 10	-	3, 4
Alachlor	**I**	**1/3144**	**1/2280**	**1/45**	**0.03 - 1**	**1**	**1, 3**
Aldicarb	I	0/1097	0/838	0/35	0.1 - 3	-	3
Aldicarb sulfone (degradate of aldicarb)	I	0/1097	0/838	0/35	0.1 - 4	-	3
Aldicarb sulfoxide (degradate of aldicarb)	I	0/1096	0/837	0/35	0.1 - 3	-	3
Aldrin	I	0/1289	0/799	0/37	0.001 - 5	-	3
Alpha-BHC (isomer of BHC)	I	0/45	0/39	0/10	0.005 - 5	-	3
Alpha-Chlordane (isomer of chlordane)	I	0/287	0/155	0/12	0.048 - 0.099	-	3
Alpha-Endosulfan (isomer of endosulfan)	I	0/227	0/102	0/14	0.005 - 5	-	3
Alpha-Terpineol (isomer of beta-, gamma-, and 4-terpineol)	I	0/180	0/180	0/34	2 - 5	-	2
Atraton	NR	0/2	0/2	0/1	0.098 - 0.099	-	3
Atrazine	**A**	**28/3765**	**28/2807**	**9/50**	**0.007 - 1**	**0.001 - 1**	**1, 2, 3**
Azinphos-methyl (guthion)	I	0/138	0/138	0/10	0.05	-	1
Azoxystrobin	**A**	**1/214**	**1/214**	**1/21**	**0.003 - 0.05**	**0.007**	**1, 2**
Benefin (benfluralin)	A	0/138	0/138	0/10	0.05	-	1

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Bensulide (bentasan)	A	0/139	0/139	0/10	0.02 - 0.05	-	1
Bentazon	**A**	**7/2217**	**7/1607**	**6/47**	**0.009 - 2**	**0.002 - 0.765**	**2, 3**
Benzoic acid	A	0/3	0/3	0/1	20	-	4
beta-BHC (isomer of BHC)	I	0/512	0/231	0/15	0.005 - 5	-	3
Bromacil	**A**	**64/1345**	**50/992**	**6/40**	**0.006 - 10**	**0.002 - 3.16**	**1, 2, 3**
Bromoxynil	A	0/75	0/75	0/15	0.06	-	2
Butachlor	NR	0/1419	0/910	0/35	0.048 - 0.42	-	3
Butyl alcohol	I	0/180	0/180	0/34	0.8	-	2
Carbaryl	A	0/1319	0/1060	0/43	0.006 - 5	-	1, 2, 3
Carbendazim	A	0/75	0/75	0/15	0.01	-	2
Carbofuran	I	0/1945	0/1477	0/40	0.02 - 5	-	1, 3
Carbon disulfide	**I**	**2/1544**	**2/732**	**1/45**	**0.1 - 2**	**0.02 - 0.1**	**2, 3, 4**
Carbon tetrachloride	**I**	**293/7566**	**35/3650**	**7/58**	**0.06 - 2**	**0.01 - 8.9**	**2, 3, 4**
Chlorantraniliprole	**A**	**11/138**	**11/138**	**3/10**	**0.02**	**0.002 - 0.252**	**1**
Chlordane	I	0/1727	0/1204	0/40	0.001 - 0.1	-	3
Chlorine dioxide	A	0/10	0/9	0/2	240	-	3
Chlorobenzilate	I	0/152	0/50	0/6	0.096 - 10	-	3
Chloroneb	I	0/8	0/8	0/1	0.5	-	3
Chloropicrin	A	0/207	0/192	0/35	0.1 - 0.51	-	2, 3
Chlorothalonil	A	0/443	0/183	0/7	0.096 - 5	-	3
Chlorpropham	A	0/216	0/130	0/9	0.098 - 0.1	-	3
Chlorpyrifos	A	0/286	0/182	0/25	0.003 - 1	-	2, 3
Chlorthal-Dimethyl (dacthal/DCPA)	I	0/230	0/153	0/12	0.04 - 0.1	-	3
Chlorimuron ethyl	NR	0/75	0/75	0/15	0.009	-	2
cis-1,3-Dichloropropene (isomer of 1,3-Dichloropropene)	A	0/5669	0/3023	0/57	0.1 - 2	-	2, 3, 4
cis-Cyhalothric acid (degradate of bifenthrin, cyhalothrin, tefluthrin)	A	0/75	0/75	0/15	0.105	-	2
cis-Permethrin (isomer of permethrin)	A	0/77	0/77	0/16	0.004 - 0.2	-	2, 3
Clomazone	A	0/139	0/139	0/10	0.05	-	1
Clothianidin	**A**	**21/138**	**21/138**	**2/10**	**0.02**	**0.002 - 0.207**	**1**

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Cyanazine	I	0/2	0/2	0/1	0.1	-	3
Cyprodinil	A	0/138	0/138	0/10	0.02	-	1
DACT (diaminochlorotriazine, degradate of atrazine and simazine)	**A**	**109/214**	**109/214**	**8/21**	**0.002 - 0.05**	**0.006 - 3.5**	**1, 2**
Dalapon	I	1/2113	1/1512	1/42	0.2 - 10	0.39	3
DBCP	**NR**	**1125/4288**	**260/2391**	**11/47**	**0.008 - 4**	**0.01 - 0.81**	**2, 3, 4**
DCPA mono/di-acid degradates (TPA, MTP)	**I**	**4/120**	**4/87**	**1/11**	**0.1 - 1**	**1.3 - 3.5**	**3**
DDD (degradate of DDT)	NR	0/511	0/230	0/15	0.005 - 5	-	3
DDE (degradate of DDT)	NR	0/505	0/224	0/14	0.005 - 5	-	3
DDT	NR	0/511	0/230	0/15	0.005 - 5	-	3
DDVP (dichlorvos)	A	0/212	0/115	0/18	0.048 - 0.099	-	2, 3
DEA (degradate of atrazine)	**A**	**64/214**	**64/214**	**10/21**	**0.011 - 0.05**	**0.002 - 0.089**	**1, 2**
Dechlorometolachlor (degradate of metolachlor)	**A**	**1/75**	**1/75**	**1/15**	**0.002**	**0.004**	**2**
Deethylhydroxyatrazine (OIAT; degradate of atrazine)	**A**	**2/75**	**2/75**	**2/15**	**0.004**	**0.005 - 0.021**	**2**
delta-BHC (isomer of BHC)	I	0/511	0/230	0/15	0.005 - 5	-	3
Desulfinyl fipronil (degradate of fipronil)	**A**	**1/75**	**1/75**	**1/15**	**0.004**	**0.003**	**2**
Diazinon	A	0/801	0/666	0/33	0.006 - 0.25	-	1, 2, 3
Dicamba	A	0/1544	0/1089	0/43	0.08 - 1.5	-	2, 3
Dichlobenil	A	0/139	0/139	0/10	0.03 - 0.05	-	1
Dichloran	**A**	**8/139**	**8/139**	**4/10**	**0.05**	**0.01 - 0.014**	**1**
Dichlorprop (isomer of dichlorprop-P)	A	0/480	0/284	0/20	0.3 - 2	-	3
Dicrotophos	I	0/69	0/69	0/14	0.004	-	2
Dieldrin	I	0/1165	0/769	0/34	0 - 5	-	3
Diflubenzuron	A	0/75	0/75	0/15	0.006	-	2
Dimethenamid	A	0/214	0/214	0/21	0.003 - 0.05	-	1, 2
Dimethoate	A	0/1579	0/1079	0/41	0.005 - 10	-	1, 2, 3
Dinoseb	I	0/2116	0/1510	0/42	0.2 - 2	-	3
Diphenamid	I	0/216	0/130	0/9	0.098 - 0.1	-	3
Diquat	A	0/1981	0/1469	0/43	0.08 - 4	-	3

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Disulfoton	I	0/362	0/271	0/19	0.05 - 10	-	1, 3
Diuron	**A**	**64/214**	**64/214**	**5/21**	**0.005 - 0.05**	**0.002 - 0.067**	**1, 2**
DNOC (4,6-dinitro-o-cresol)	I	0/25	0/20	0/5	5	-	3, 4
DSMN (degradate of norflurazon)	**A**	**66/139**	**66/139**	**3/10**	**0.01 - 0.05**	**0.003 - 1.66**	**1**
Endosulfan II (isomer of endosulfan)	I	0/227	0/102	0/14	0.005 - 5	-	3
Endosulfan sulfate (degradate of endosulfan)	I	0/227	0/102	0/14	0.005 - 5	-	3
Endothall	A	0/1792	0/1320	0/43	5 - 45	-	3
Endrin	I	0/2011	0/1332	0/40	0.001 - 0.1	-	3
Endrin aldehyde (degradate of endrin)	I	0/229	0/104	0/14	0.005 - 5	-	3
EPTC	A	0/484	0/301	0/19	0.05 - 0.1	-	1, 3
Ethofumesate	A	0/139	0/139	0/10	0.03 - 0.05	-	1
Ethoprop (prophos)	A	0/214	0/214	0/21	0.005 - 0.05	-	1, 2
Ethylene dibromide (dibromoethane)	**I**	**5/3712**	**4/2333**	**3/48**	**0.004 - 1.5**	**0.021 - 0.12**	**2, 3, 4**
Ethylene dichloride (1,2-Dichloroethane)	**I**	**110/7409**	**16/3642**	**3/58**	**0.08 - 2**	**0.1 - 4.3**	**2, 3, 4**
Etoxazole	A	0/75	0/75	0/15	0.004	-	2
Fenamiphos	I	0/139	0/139	0/10	0.03 - 0.05	-	1
Fipronil	**A**	**2/75**	**2/75**	**2/15**	**0.004**	**0.001 - 0.004**	**2**
Fipronil sulfide (degradate of fipronil)	**A**	**1/69**	**1/69**	**1/15**	**0.004**	**0.001**	**2**
Fipronil sulfone (degradate of fipronil)	**A**	**2/75**	**2/75**	**2/15**	**0.006**	**0.001 - 0.008**	**2**
Fipronil-carboxamide (degradate of fipronil)	**A**	**1/75**	**1/75**	**1/15**	**0.009**	**0.037**	**2**
Fludioxonil	**A**	**2/139**	**2/139**	**1/10**	**0.03 - 0.05**	**0.045 - 0.568**	**1**
Fluometuron	I	0/75	0/75	0/15	0.01	-	2
Flupyradifurone	**A**	**2/138**	**2/138**	**2/10**	**0.02**	**0.024 - 0.057**	**1**
Flutriafol	**A**	**3/138**	**3/138**	**2/10**	**0.02**	**0.007 - 0.106**	**1**
Fonofos (dyfonate)	I	0/138	0/138	0/10	0.03	-	1
Formaldehyde	**I**	**11/52**	**10/21**	**3/5**	**2 - 5.3**	**2.5 - 4.8**	**3**
gamma-Chlordane (isomer of chlordane)	I	0/287	0/155	0/12	0.048 - 0.099	-	3
Glyphosate	**A**	**1/1644**	**1/1167**	**1/43**	**5 - 25**	**42**	**3**
Halosulfuron-Methyl	A	0/75	0/75	0/15	0.012	-	2
Heptachlor	I	0/1735	0/1219	0/40	0 - 0.01	-	3

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Heptachlor epoxide (degradate of heptachlor)	I	0/1734	0/1220	0/40	0 - 0.01	-	3
Hexachlorobenzene	I	0/2068	0/1335	0/40	0.005 - 2	-	3, 4
Hexazinone	**A**	**12/214**	**12/214**	**8/21**	**0.004 - 0.05**	**0.001 - 0.092**	**1, 2**
Hydroxymetolachlor (degradate of metolachlor)	**A**	**2/75**	**2/75**	**2/15**	**0.002**	**0.004 - 0.007**	**2**
Hydroxysimazine (degradate of simazine)	**A**	**8/75**	**8/75**	**5/15**	**0.12**	**0.007 - 0.036**	**2**
Imazethapyr	**A**	**1/75**	**1/75**	**1/15**	**0.008**	**0.002**	**2**
Imidacloprid	**A**	**22/214**	**22/214**	**4/21**	**0.016 - 0.05**	**0.003 - 0.108**	**1, 2**
Isopropyl alcohol	**A**	**2/180**	**2/180**	**2/34**	**1.8**	**2.2 - 11.4**	**2**
Isoxaben	A	0/138	0/138	0/10	0.02	-	1
Isoxaflutole diketonitrile (degradate of isoxaflutole)	NR	0/75	0/75	0/15	0.01	-	2
Lindane (gamma-BHC) (isomer of BHC)	I	0/2058	0/1374	0/41	0.002 - 0.2	-	3
Linuron	A	0/214	0/214	0/21	0.006 - 0.05	-	1, 2
Malathion	A	0/214	0/214	0/21	0.005 - 0.05	-	1, 2
Mefenoxam (metalaxyl-m; isomer of metalaxyl)	**A**	**5/139**	**5/139**	**3/10**	**0.02 - 0.05**	**0.005 - 0.146**	**1**
Metalaxyl (isomer of mefenoxam/metalaxyl-m)	A	0/75	0/75	0/15	0.006	-	2
Metconazole	A	0/75	0/75	0/15	0.005	-	2
Methamidophos	I	0/75	0/75	0/15	0.01	-	2
Methiocarb	I	0/581	0/477	0/32	0.02 - 5	-	1, 3
Methomyl	A	0/1310	0/1051	0/42	0.003 - 2	-	1, 2, 3
Methoxychlor	I	0/2078	0/1373	0/40	0.005 - 10	-	3
Methoxyfenozide	**A**	**37/213**	**37/213**	**12/21**	**0.002 - 0.03**	**0.001 - 0.301**	**1, 2**
Methyl bromide	A	0/3725	0/1828	0/47	0.2 - 4	-	2, 3, 4
Methyl iodide	I	0/10	0/10	0/1	0.34	-	2
Methyl parathion	I	0/431	0/270	0/13	0.03 - 10	-	1, 3
Metolachlor	**A**	**1/1330**	**1/981**	**1/40**	**0.003 - 1**	**0.001**	**1, 2, 3**
Metolachlor ESA (degradate of metolachlor)	**A**	**7/75**	**7/75**	**6/15**	**0.068**	**0.023 - 1.46**	**2**
Metolachlor OXA (degradate of metolachlor)	**A**	**1/75**	**1/75**	**1/15**	**0.149**	**0.222**	**2**
Metribuzin	A	0/1344	0/991	0/40	0.02 - 0.84	-	1, 2, 3
Molinate	**I**	**1/2470**	**1/1689**	**1/45**	**0.05 - 2**	**1**	**3**
m-Xylene (isomer of p- and o-xylene)	I	0/23	0/15	0/3	0.5 - 1	-	3

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Myclobutanil	**A**	**1/213**	**1/213**	**1/21**	**0.007 - 0.02**	**0.005**	**1, 2**
Naphthalene	**I**	**6/4406**	**3/2000**	**2/48**	**0.16 - 2**	**0.1 - 0.9**	**2, 3, 4**
Napropamide	A	0/139	0/139	0/10	0.02 - 0.05	-	1
Norflurazon	**A**	**46/139**	**46/139**	**3/10**	**0.02 - 0.05**	**0.002 - 0.684**	**1**
o-Cresol (isomer of p- and m-cresol)	A	0/10	0/5	0/2	1 - 2	-	3, 4
Octanol	I	0/180	0/180	0/34	1.8	-	2
OIET (2-Hydroxyatrazine; degradate of atrazine)	**A**	**4/75**	**4/75**	**4/15**	**0.008**	**0.002 - 0.01**	**2**
Ortho-dichlorobenzene (1,2-Dichlorobenzene)	**I**	**1/7232**	**1/3632**	**1/58**	**0.028 - 2.5**	**0.016**	**2, 3, 4**
Oryzalin	A	0/214	0/214	0/21	0.012 - 0.05	-	1, 2
Oxamyl	A	0/1813	0/1347	0/40	0.5 - 20	-	3
o-Xylene (isomer of m- and p-xylene)	**I**	**1/6316**	**1/3105**	**1/56**	**0.032 - 1**	**0.095**	**2, 3, 4**
Paraquat	A	0/274	0/198	0/17	0.4 - 4	-	3
Parathion or ethyl parathion	I	0/145	0/140	0/11	0.03 - 10	-	1, 3
p-Chlorocresol (p-Chloro-m-cresol)	A	0/25	0/20	0/5	1 - 2	-	3, 4
PCNB	A	0/20	0/15	0/3	0.1 - 10	-	3
p-Cresol (isomer of o- and m-cresol)	A	0/3	0/3	0/1	2	-	4
Pentachlorophenol (PCP)	I	0/2168	0/1522	0/42	0.04 - 5	-	3, 4
Phenol	A	0/3	0/3	0/1	2	-	4
Phorate	A	0/146	0/141	0/11	0.03 - 10	-	1, 3
Phosdrin	I	0/2	0/2	0/1	0.098 - 0.099	-	3
Phostebupirim	NR	0/75	0/75	0/15	0.002	-	2
Picloram	I	0/2103	0/1506	0/42	0.1 - 1	-	3
Piperonyl butoxide	A	0/214	0/214	0/21	0.025 - 0.05	-	1, 2
Prometon	**I**	**4/216**	**4/216**	**3/22**	**0.004 - 0.1**	**0.001 - 0.014**	**1, 2, 3**
Prometryn	**A**	**1/139**	**1/139**	**1/10**	**0.02 - 0.05**	**0.003**	**1**
Propachlor	I	0/826	0/617	0/30	0.01 - 1	-	3
Propanil	A	0/139	0/139	0/10	0.05	-	1
Propazine	**I**	**1/75**	**1/75**	**1/15**	**0.003**	**0.001**	**2**
Propiconazole	**A**	**2/213**	**2/213**	**2/21**	**0.006 - 0.02**	**0.004 - 0.005**	**1, 2**
Propoxur	A	0/509	0/407	0/37	0.003 - 2	-	2, 3

Pesticide or Degradate	Parent Compound CA Registration Status	Positive Samples/ Samples Taken	Positive Wells/ Wells Sampled	Positive Counties/ Counties Sampled	Reporting Limit Range (ppb)	Detected Concentration Range (ppb)	Sampling Agencies
Pyraclostrobin	**A**	**1/213**	**1/213**	**1/21**	**0.002 - 0.02**	**0.091**	**1, 2**
Silvex	I	0/2092	0/1496	0/42	0.07 - 1	-	3
Simazine	**A**	**111/3815**	**104/2854**	**12/49**	**0.007 - 1**	**0.002 - 1**	**1, 2, 3**
Sulfentrazone	A	0/75	0/75	0/15	0.018	-	2
Sulfometuron-methyl	**A**	**1/75**	**1/75**	**1/15**	**0.004**	**0.001**	**2**
Tebuconazole	A	0/75	0/75	0/15	0.015	-	2
Tebuthiuron	**A**	**3/214**	**3/214**	**2/21**	**0.003 - 0.05**	**0.003 - 0.024**	**1, 2**
Terbacil	I	0/351	0/168	0/11	0.096 - 2	-	3
Terbufos	NR	0/75	0/75	0/15	0.007	-	2
Terbufos sulfone (degradate of terbufos)	NR	0/75	0/75	0/15	0.025 - 0.032	-	2
Terbufos sulfoxide (degradate of terbufos)	NR	0/75	0/75	0/15	0.003	-	2
Terbutryn	A	0/2	0/2	0/1	0.098 - 0.099	-	3
Tetraconazole	A	0/75	0/75	0/15	0.007	-	2
Thiamethoxam	**A**	**2/139**	**2/139**	**2/10**	**0.02 - 0.05**	**0.013 - 0.014**	**1**
Thiobencarb	A	0/2858	0/1999	0/46	0.004 - 1	-	1, 2, 3
Toxaphene	I	0/1740	0/1217	0/41	0.01 - 2	-	3
Trans-1,3-Dichloropropene (isomer of 1,3-Dichloropropene)	A	0/5497	0/2975	0/57	0.1 - 2	-	2, 3, 4
Trans-Nonachlor (component of chlordane, isomer of nonachlor and cis-nonachlor)	I	0/287	0/155	0/12	0.048 - 0.099	-	3
Trans-Permethrin (isomer of permethrin)	A	0/77	0/77	0/16	0.004 - 0.2	-	2, 3
Triallate	A	0/139	0/139	0/10	0.03 - 0.05	-	1
Triclopyr	A	0/75	0/75	0/15	0.088	-	2
Trifloxystrobin	A	0/75	0/75	0/15	0.003	-	2
Trifluralin	A	0/307	0/175	0/14	0.096 - 1	-	3
Uniconazole	A	0/139	0/139	0/10	0.05	-	1
Xylene	**I**	**8/6850**	**5/3408**	**4/58**	**0.5 - 2.5**	**0.58 - 180**	**3, 4**
Xylene, m- and p- (isomers of o-xylene)	**I**	**1/6100**	**1/2904**	**1/55**	**0.5 - 1**	**0.7**	**3**

DPR Responses to Pesticide Detections

As required under the PCPA (FAC section 13152[e][4]), this section of the annual report describes DPR's responses to the pesticide and degradate detections in groundwater by DPR, SWRCB, and USGS (Tables 2A–2E). Responses to pesticide detections in California vary based on several factors described in the Background section of the report, including recently lowering the reporting limits for analysis and updating the SL for detections. If DPR's contract laboratories do not have a method available for registered pesticides or degradates, DPR sets the SL at 0.035 ppb and adds those that exceed the SL to the "watch list". The current SLs are included in Tables 2B–2D.

The following sub-sections and tables provide information on the groundwater detection response and drinking water quality information for the 64 pesticide or degradate compounds that were detected during this reporting period, separated into the following categories:

- Abbreviations and definitions for state and federal drinking water health and quality standards (Table 2A)
- GWPL 6800(a) pesticides or degradates (Table 2B)
- GWPL 6800(b) pesticides or degradates (Table 2C)
- Pesticides or degradates registered in California that are not on the GWPL (Table 2D)
- Pesticides or degradates that are no longer or were never registered for use in California (Table 2E)

Table 2A. Abbreviation definitions for State and Federal Drinking Water Health and Quality Standards[27]

Abbreviation	Definition
10^{-4} Cancer Risk (USEPA)	The concentration of a chemical in drinking water corresponding to an excess estimated lifetime cancer risk of 1 in 10,000. https://www.epa.gov/sdwa/human-health-benchmarks
Acute or One-Day HHBP (USEPA)	USEPA Acute or One-day Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values in drinking water protective of acute or up to one-day non-carcinogenic effects, assuming that the entire exposure to a given pesticide is from drinking water. https://www.epa.gov/sdwa/human-health-benchmarks
Cancer Group (USEPA)	(A) human carcinogen; (B1) probable human carcinogen—indicates limited human evidence; (B2) probable human carcinogen—sufficient evidence in animals and inadequate or no evidence in humans; (C) possible human carcinogen; (D) not classifiable as to human carcinogenicity; (E) evidence of no carcinogenicity for humans; (L) likely to be carcinogenic to humans; (N) not likely to be carcinogenic in humans; (S) suggestive evidence of carcinogenic potential. https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf
Cancer HBSL (E-6 to E-4) (USGS)	USGS Cancer Health-Based Screening Levels (HBSLs) are non-enforceable benchmarks protective of cancer effects. The HBSL concentration range represents a one-in-one million (10^{-6}) to one-in-ten thousand (10^{-4}) cancer risk range. https://water.usgs.gov/water-resources/hbsl/

[27] DPR's Pesticide Drinking Water Standards Fact Sheet is available at: https://www.cdpr.ca.gov/report/2024-pesticide-drinking-water-standards-and-information/.

Abbreviation	Definition
Chronic or Lifetime HHBP (USEPA)	USEPA Chronic or Lifetime Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values in drinking water protective of chronic non-carcinogenic effects over a lifetime of exposure, assuming that 20% of the exposure to a given pesticide is from water and additional exposure is derived from another source such as food, air, or dermal contact. https://www.epa.gov/sdwa/human-health-benchmarks
Carcinogenic HHBP (E-6 to E-4) (USEPA)	USEPA Carcinogenic Human Health Benchmarks for Pesticides (HHBPs) are non-enforceable advisory values protective of cancer effects. The HHBP range represents a one-in-one million (10^{-6}) to one-in-ten thousand (10^{-4}) cancer risk range. https://www.epa.gov/sdwa/human-health-benchmarks
DWEL HA (USEPA)	A Drinking Water Equivalent Level (DWEL) is a lifetime exposure level, assuming 100% exposure from drinking water, at or below which adverse, non-carcinogenic health effects would not be expected to occur. https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf, https://www.epa.gov/sdwa/drinking-water-health-advisories-has
HHRL (DPR)	The Human Health Reference Levels (HHRLs) are identified by the California Department of Pesticide Regulation's (DPR) Human Health Assessment Branch. Residues measured in groundwater exceeding these reference levels indicate a health concern and should be sent to HHA for further evaluation. https://www.cdpr.ca.gov/look-up-pesticide-info/
Lifetime HA (USEPA)	The Lifetime Health Advisory (HA) is the concentration in drinking water at or below which no adverse non-carcinogenic effects are expected for a lifetime of exposure (for a 70-kg adult drinking 2 L of water/day). The lifetime HA incorporates a drinking water risk concentration factor or a default of 20% of total exposure from all sources. https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf, https://www.epa.gov/sdwa/drinking-water-health-advisories-has
MCL (SWRCB)	The Maximum Contaminant Level (MCL) is an enforceable, health protective drinking water level adopted by the state of California which considers not only a chemicals' health risks but also factors such as their detectability and treatability, as well as costs of treatment. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/mclreview/mcls_dlrs_phgs.pdf
MCL (USEPA)	The Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are federally enforceable standards. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/mclreview/mcls_dlrs_phgs.pdf, https://water.usgs.gov/water-resources/hbsl/
MCLG (USEPA)	The Maximum Contaminant Level Goal (MCLG) is a non-enforceable, federal health benchmark goal that is set at a level at which no known or anticipated adverse effect on the health of persons is expected to occur and which allows an adequate margin of safety. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/mclreview/mcls_dlrs_phgs.pdf, https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf, https://www.epa.gov/sdwa/drinking-water-health-advisories-has
Non-Cancer HBSL (USGS)	USGS Non-cancer Health-Based Screening Levels (HBSLs) are non-enforceable benchmarks of concentration protective of chronic non-cancer effects. https://water.usgs.gov/water-resources/hbsl/

Abbreviation	Definition
One-Day HA (USEPA)	The One-Day Health Advisory (HA) is the concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for up to one day of exposure (for a 10-kg child consuming 1 L of water/day). https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf, https://www.epa.gov/sdwa/drinking-water-health-advisories-has
PHG (Office of Environmental Health Hazard Assessment; OEHHA)	Public Health Goals (PHGs), established by the state of California, 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. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/mclreview/mcls_dlrs_phgs.pdf
PHC (OEHHA)	Public Health Concentrations (PHCs), determined by the state of California, are concentrations of a chemical in drinking water that are not expected to pose a significant risk to health when consumed over a lifetime, and are developed using approaches and methods of OEHHA's Public Health Goal Program. If differentiated, **CE** refers to a PHC derived for cancer effects and **NCE** refers to a PHC derived for non-cancer effects. https://oehha.ca.gov/pesticides/pesticides-reports-notices-and-documents
Ten-Day HA (USEPA)	The Ten-Day Health Advisory (HA) concentration of a chemical in drinking water that is not expected to cause any adverse non-carcinogenic effects for up to ten days of exposure (for a 10-kg child consuming 1 L of water/day). https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf, https://www.epa.gov/sdwa/drinking-water-health-advisories-has

Responses to detections of pesticides and degradates on the GWPL, 3CCR section 6800(a)

Table 2B includes detections of the seven pesticides that are listed on the GWPL, 3CCR section 6800(a), and their degradates. Applications of the parent pesticides are regulated as groundwater contaminants within GWPAs under the RMPP (see Appendix A for more information on GWPAs).

- Fifty-one (51) wells with one or more of the 6800(a) pesticide compounds were detected at or above the SL were outside of already established GWPAs. DPR has evaluated fourteen (14) of these detections and will evaluate the detections.
- The remaining wells with detections at or above the SL of the 6800(a) compounds were located inside established GWPAs and the parent pesticide is regulated as a groundwater contaminant.

Table 2B. Detailed summary of 6800(a)-listed pesticides or degradates detected in groundwater during this reporting period

Detection concentration ranges and drinking water quality standards are reported in parts per billion (ppb). The last column includes DPR's initial evaluation and response to the reported detections.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
1-(3,4-dichlorophenyl)-3-methyl urea (DCPMU, diuron desmethyl, degradate of diuron)	2	0.002 - 0.008	0	0.035	DPR HHRL [ppb]: 100§	No detections exceeded the SL.
ACET (degradate of atrazine and simazine)	112	0.002 - 0.592	86	0.014	DPR HHRL [ppb]: 17†	Eighty-six (86) wells with detections exceeded the SL. Seventy-nine (79) wells with detections above the SL are in GWPAs. **DPR will evaluate the seven (7) wells with detections above the SL that are not in GWPAs.**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Atrazine	28	0.001 - 1	5	0.014	DPR HHRL [ppb]: 17[†] SWRCB MCL [ppb]: 1 OEHHA PHG [ppb]: 0.15 USEPA MCL [ppb]: 3 USEPA MCLG [ppb]: 3 USEPA DWEL HA [ppb]: 700 USEPA Cancer Group: N	Five (5) wells with detections exceeded the SL. Two (2) wells with detections above the SL are in GWPAs. **DPR will evaluate the three (3) wells with detections above the SL that are not in GWPAs.**
Bentazon	7	0.002 - 0.765	3	0.014	DPR HHRL [ppb]: 1500 SWRCB MCL [ppb]: 18 OEHHA PHG [ppb]: 200 USEPA Chronic (Lifetime) HHBP [ppb]: 890 USEPA Acute (One-Day) HHBP [ppb]: 3000 USEPA One-Day HA [ppb]: 300 USEPA Ten-Day HA [ppb]: 300 USEPA DWEL HA [ppb]: 1000 USEPA Lifetime HA [ppb]: 200 USEPA Cancer Group: E USGS Non-Cancer HBSL [ppb]: 900	Three (3) wells with detections exceeded the SL. **DPR will evaluate the three (3) wells with detections above the SL that are not in GWPAs.**
Bromacil	50	0.002 - 3.16	41	0.014	DPR HHRL [ppb]: 197 USEPA One-Day HA [ppb]: 5000 USEPA Ten-Day HA [ppb]: 5000 USEPA DWEL HA [ppb]: 3500 USEPA Lifetime HA [ppb]: 70 USEPA Cancer Group: C USGS Non-Cancer HBSL [ppb]: 100	Forty-one (41) wells with detections exceeded the SL. Thirty-three (33) wells with detections above the SL are in GWPAs. **DPR will evaluate the eight (8) wells with detections above the SL that are not in GWPAs.**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
DACT (diaminochlorotriazine, degradate of atrazine and simazine)	109	0.006 - 3.5	99	0.014	DPR HHRL [ppb]: 17[†] USEPA Chronic (Lifetime) HHBP [ppb]: 11 USEPA Acute (One-Day) HHBP [ppb]: 300	Ninety-nine (99) wells with detections exceeded the SL. Eighty-six (86) wells with detections above the SL are in GWPAs. DPR evaluated three (3) wells with detections above the SL, confirmed the detections, and responded in a memo (Study Z607). **DPR will evaluate the ten (10) wells with detections above the SL that are not in GWPAs.**
DEA (degradate of atrazine)	64	0.002 - 0.089	10	0.014	DPR HHRL [ppb]: 17[†] USGS Non-Cancer HBSL [ppb]: 10	Ten (10) wells with detections exceeded the SL. Eight (8) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL that are not in GWPAs.**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
DSMN (degradate of norflurazon)	66	0.003 - 1.66	62	0.007	DPR HHRL [ppb]: 150¶	Sixty-two (62) wells with detections exceeded the SL. Fifty-eight (58) wells with detections above the SL are in GWPAs. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the three (3) wells with detections above the SL that are not in GWPAs.**
Deethylhydroxyatrazine (OIAT; degradate of atrazine)	2	0.005 - 0.021	0	0.035	DPR HHRL [ppb]: 100†	No detections exceeded the SL.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Diuron	64	0.002 - 0.067	42	0.014	DPR HHRL [ppb]: 100§ USEPA One-Day HA [ppb]: 1000 USEPA Ten-Day HA [ppb]: 1000 USEPA DWEL HA [ppb]: 100 USEPA 10E-4 Cancer Risk [ppb]: 200 USEPA Cancer Group: L USGS Non-Cancer HBSL [ppb]: 60 USGS Cancer HBSL (10E-6 to 10E-4) [ppb]: 2-200	Forty-two (42) wells with detections exceeded the SL. Thirty-six (36) wells with detections above the SL are in GWPAs. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further**.** DPR evaluated three (3) wells with detections above the SL, confirmed the detections, and responded in a memo (Study Z607 and Study Z611). **DPR will evaluate the two (2) wells with detections above the SL that are not in GWPAs.**
Hydroxysimazine (degradate of simazine)	8	0.007 - 0.036	3	0.035	DPR HHRL [ppb]: 100† USGS Non-Cancer HBSL [ppb]: 400	Three (3) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the two (2) wells with detections above the SL that are not in GWPAs.**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Norflurazon	46	0.002 - 0.684	33	0.014	DPR HHRL [ppb]: 150¶ USEPA Chronic (Lifetime) HHBP [ppb]: 8.9	Thirty-three (33) wells with detections exceeded the SL. Thirty-one (31) wells with detections above the SL are in GWPAs. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further**. DPR will evaluate the one (1) well with a detection above the SL that is not in a GWPA.**
OIET (2-Hydroxyatrazine; degradate of atrazine)	4	0.002 - 0.01	0	0.035	USEPA Chronic (Lifetime) HHBP [ppb]: 400	No detections exceeded the SL.
Prometon	4	0.001 - 0.014	1	0.014	DPR HHRL [ppb]: 263 USEPA One-Day HA [ppb]: 200 USEPA Ten-Day HA [ppb]: 200 USEPA DWEL HA [ppb]: 2000 USEPA Lifetime HA [ppb]: 400 USEPA Cancer Group: N USGS Non-Cancer HBSL [ppb]: 300	One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL is in a GWPA.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Simazine	104	0.002 - 1	83	0.014	DPR HHRL [ppb]: 17[†] SWRCB MCL [ppb]: 4 OEHHA PHG [ppb]: 4 USEPA MCL [ppb]: 4 USEPA MCLG [ppb]: 4 USEPA DWEL HA [ppb]: 700 USEPA Cancer Group: N	Eighty-three (83) wells with detections exceeded the SL. Seventy-five (75) wells with detections above the SL are in GWPAs. Two (2) wells with detections above the SL were sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate these two (2) wells further. DPR evaluated two (2) wells with detections above the SL, confirmed the detections, and responded in a memo (Study Z607). **DPR will evaluate the four (4) wells with detections above the SL that are not in GWPAs.**

[#] The Screening Level (SL) is set at 70 percent of the current reporting limit established by DPR's contract laboratory.

[‖] Pesticides on the GWPL 3CCR section 6800(a) are those labeled for agricultural, outdoor institutional, or outdoor industrial use that have the potential to pollute groundwater. Section 6800(a) includes seven agricultural herbicides that are regulated as groundwater contaminants: atrazine, bentazon, bromacil, diuron, norflurazon, prometon, and simazine. If the parent pesticide of the detected compound is regulated as a groundwater contaminant under 3CCR section 6800(a)—and the well is in a GWPA where use of the pesticide is regulated under the RMPP—current regulatory requirements for use constitutes 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 consequence of polluting," and "pollute" means "to introduce a pesticide product into the groundwaters of the state resulting in an active ingredient, other specified ingredient, or a degradation product of a pesticide above a level that does not cause adverse health effects, accounting for an adequate margin of safety."). No further evaluation is required since use is already regulated in those areas.

[§] If residues of diuron and 3,4-dichloroaniline are detected in the same groundwater sample, the values should be summed and compared to the HHRL.

[†] If two or more residues of atrazine, simazine, ACET, DACT, or DEA are detected in the same groundwater sample, the values should be summed and compared to the HHRL.

[¶] If residues of norflurazon and DSMN are detected in the same groundwater sample, the values should be summed and compared to the HHRL.

Responses to detections of pesticides and degradates on the GWPL, 3CCR section 6800(b)

Table 2C includes detections of the pesticides listed as potential groundwater contaminants on the GWPL, 3CCR section 6800(b), and their degradates.

- Twelve (12) compounds were detected at or above the SL: alachlor, chlorantraniliprole, clothianidin, fludioxonil, hexazinone, imidacloprid, mefenoxam (metalaxyl-m; isomer of metalaxyl), metolachlor ESA (degradate of metolachlor), metolachlor OXA (degradate of metolachlor), pyraclostrobin, tebuthiuron, and thiamethoxam.
    - Alachlor was detected in one well above the SL but is no longer registered for use in California. DPR will not conduct further evaluation of this detection.
    - DPR detected chlorantraniliprole in three wells at or above the SL. DPR is currently conducting groundwater monitoring for this pesticide in high use areas statewide and reviewing the results (Afyuni and Nordmark, 2022).
    - DPR detected clothianidin in eight wells at or above the SL and thiamethoxam in one well at or above the SL. DPR is currently conducting groundwater monitoring for these pesticides in high use areas and reviewing the results statewide (Henda and Hawkins, 2024).
    - DPR detected fludioxonil in two wells above the SL as part of an ongoing study to determine a source and is reviewing the results (Kocis, 2020).
    - Hexazinone, imidacloprid, metolachlor ESA, and metolachlor OXA were determined not to pollute at the concentrations detected and DPR continually monitors for them (Reardon, 2011; Henderson, 2022; Leahy, 2017).
    - DPR will evaluate the remaining detections.
- Ten (10) compounds were detected at concentrations below the SL: azoxystrobin, dechlorometolachlor (degradate of metolachlor), dichloran, hydroxymetolachlor (degradate of metolachlor), imazethapyr, metolachlor, myclobutanil, prometryn, propiconazole, and sulfometuron-methyl.

Table 2C. Detailed summary of 6800(b)-listed pesticides or degradates detected in groundwater during this reporting period

Detection concentration ranges and drinking water quality standards are reported in parts per billion (ppb). The last column includes DPR's initial evaluation and response to the detections.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Alachlor	1	1	1	0.0175	SWRCB MCL [ppb]: 2 OEHHA PHG [ppb]: 4 USEPA MCL [ppb]: 2 USEPA MCLG [ppb]: 0 USEPA One-Day HA [ppb]: 100 USEPA Ten-Day HA [ppb]: 100 USEPA DWEL HA [ppb]: 400 USEPA 10E-4 Cancer Risk [ppb]: 40 USEPA Cancer Group: B2	One (1) well with a detection exceeded the SL. There have been no products registered for use in California since 2016.
Azoxystrobin	1	0.007	0	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 1070 USEPA Acute (One-Day) HHBP [ppb]: 4500	No detections exceeded the SL.
Chlorantraniliprole	11	0.002 - 0.252	3	0.014	DPR HHRL [ppb]: 8316 USEPA Chronic (Lifetime) HHBP [ppb]: 9350	Three (3) wells with detections exceeded the SL. **DPR will evaluate the three (3) wells with detections above the SL (Afyuni and Nordmark, 2022).**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Clothianidin	21	0.002 - 0.207	8	0.014	DPR HHRL [ppb]: 980 USEPA Chronic (Lifetime) HHBP [ppb]: 580 USEPA Acute (One-Day) HHBP [ppb]: 1700	Eight (8) wells with detections exceeded the SL. Two (2) wells with detections above the SL were sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate these two (2) wells further. **DPR will evaluate the six (6) wells with detections above the SL (Henda and Hawkins, 2024).**
Dechlorometolachlor (degradate of metolachlor)	1	0.004	0	0.035	DPR HHRL [ppb]: 1368*	No detections exceeded the SL.
Dichloran	8	0.01 - 0.014	0	0.035	USEPA Chronic (Lifetime) HHBP [ppb]: 15 USEPA Acute (One-Day) HHBP [ppb]: 1000	No detections exceeded the SL.
Fludioxonil	2	0.045 - 0.568	2	0.0175	DPR HHRL [ppb]: 331 USEPA Chronic (Lifetime) HHBP [ppb]: 2000	Two (2) wells with detections exceeded the SL. **DPR will evaluate the two (2) wells with detections above the SL (Kocis, 2020).**
Hexazinone	12	0.001 - 0.092	4	0.007	DPR HHRL [ppb]: 500 USEPA One-Day HA [ppb]: 3000 USEPA Ten-Day HA [ppb]: 2000 USEPA DWEL HA [ppb]: 2000 USEPA Lifetime HA [ppb]: 400 USEPA Cancer Group: D USGS Non-Cancer HBSL [ppb]: 300	Four (4) wells with detections exceeded the SL. DPR evaluated four (4) wells with detections above the SL based on the findings of the PCPA Review Process. The detections have been determined not to pollute groundwater (Reardon, 2011).

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Hydroxymetolachlor (degradate of metolachlor)	2	0.004 - 0.007	0	0.035	DPR HHRL [ppb]: 1368*	No detections exceeded the SL.
Imazethapyr	1	0.002	0	0.035	USEPA Chronic (Lifetime) HHBP [ppb]: 15000	No detections exceeded the SL.
Imidacloprid	22	0.003 - 0.108	8	0.014	DPR HHRL [ppb]: 283 USEPA Chronic (Lifetime) HHBP [ppb]: 500 USEPA Acute (One-Day) HHBP [ppb]: 500	Eight (8) wells with detections exceeded the SL. DPR evaluated eight (8) wells with detections above the SL based on the findings of the PCPA Review Process. The detections have been determined not to pollute groundwater (Henderson, 2022).
Mefenoxam (metalaxyl-m; isomer of metalaxyl)	5	0.005 - 0.146	1	0.014	USEPA Acute (One-Day) HHBP [ppb]: 3000	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Metolachlor	1	0.001	0	0.014	DPR HHRL [ppb]: 1368* OEHHA PHC [ppb]: 7 USEPA One-Day HA [ppb]: 2000 USEPA Ten-Day HA [ppb]: 2000 USEPA DWEL HA [ppb]: 3500 USEPA Lifetime HA [ppb]: 700 USEPA Cancer Group: C USGS Non-Cancer HBSL [ppb]: 2000	No detections exceeded the SL.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Metolachlor ESA (degradate of metolachlor)	7	0.023 - 1.46	4	0.035	DPR HHRL [ppb]: 1368* OEHHA PHC [ppb]: 1300	Four (4) wells with detections exceeded the SL. DPR evaluated four (4) wells with detections above the SL based on the findings of the PCPA Review Process. The detections have been determined not to pollute groundwater (Leahy, 2017).
Metolachlor OXA (degradate of metolachlor)	1	0.222	1	0.035	DPR HHRL [ppb]: 1368* OEHHA PHC [ppb]: 3200	One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater (Leahy, 2017).
Myclobutanil	1	0.005	0	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 150 USEPA Acute (One-Day) HHBP [ppb]: 20000	No detections exceeded the SL.
Prometryn	1	0.003	0	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 200	No detections exceeded the SL.
Propiconazole	2	0.004 - 0.005	0	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 600 USEPA Acute (One-Day) HHBP [ppb]: 2000	No detections exceeded the SL.
Pyraclostrobin	1	0.091	1	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 200 USEPA Acute (One-Day) HHBP [ppb]: 1000	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Sulfometuron-methyl	1	0.001	0	0.035	USEPA Chronic (Lifetime) HHBP [ppb]: 1630	No detections exceeded the SL.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections[‖]
Tebuthiuron	3	0.003 - 0.024	1	0.014	DPR HHRL [ppb]: 737 USEPA One-Day HA [ppb]: 3000 USEPA Ten-Day HA [ppb]: 3000 USEPA DWEL HA [ppb]: 2000 USEPA Lifetime HA [ppb]: 500 USEPA Cancer Group: D USGS Non-Cancer HBSL [ppb]: 800	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Thiamethoxam	2	0.013 - 0.014	1	0.014	DPR HHRL [ppb]: 120 USEPA Chronic (Lifetime) HHBP [ppb]: 71 USEPA Acute (One-Day) HHBP [ppb]: 2300	One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.

[#] The Screening Level (SL) is set at 70 percent of the current reporting limit established by DPR's contract laboratory

* If one or more residues of metolachlor, metolachlor ESA, metolachlor OXA, dechlorometolachlor, or hydroxymetolachlor are detected in the same groundwater sample, the values should be summed and compared to the HHRL.

Responses to detections of actively registered pesticides and degradates not listed on the GWPL [3CCR sections 6800(a) or (b)]

Table 2D includes detections of actively registered pesticides or degradates of a parent compound not listed under 3CCR sections 6800(a) or (b).

- Six (6) compounds were detected at or above the SL: fipronil-carboxamide, flupyradifurone, flutriafol, glyphosate, isopropyl alcohol, and methoxyfenozide.
    - DPR detected flutriafol in one well at or above the SL and methoxyfenozide in six wells at or above the SL. DPR is currently conducting groundwater monitoring for these pesticides in high use areas statewide and reviewing the results (Afyuni and Nordmark, 2022).
    - DPR will evaluate the remaining detections.
- Four (4) compounds were detected at concentrations below the SL: desulfinyl fipronil (degradate of fipronil), fipronil, fipronil sulfide (degradate of fipronil), and fipronil sulfone (degradate of fipronil).

Table 2D. Detailed summary of actively registered pesticides or degradates detected in groundwater not included on the GWPL

Detection concentration ranges and drinking water quality standards are reported in parts per billion (ppb). The last column includes DPR's initial evaluation and response to the pesticide detections.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections
Desulfinyl fipronil (degradate of fipronil)	1	0.003	0	0.035	USGS Non-Cancer HBSL [ppb]: 1	No detections exceeded the SL.
Fipronil	2	0.001 - 0.004	0	0.035	USEPA Chronic (Lifetime) HHBP [ppb]: 1 USEPA Acute (One-Day) HHBP [ppb]: 170	No detections exceeded the SL.
Fipronil sulfide (degradate of fipronil)	1	0.001	0	0.035	No health levels available.	No detections exceeded the SL.
Fipronil sulfone (degradate of fipronil)	2	0.001 - 0.008	0	0.035	No health levels available.	No detections exceeded the SL.
Fipronil-carboxamide (degradate of fipronil)	1	0.037	1	0.035	No health levels available.	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Flupyradifurone	2	0.024 - 0.057	2	0.014	USEPA Chronic (Lifetime) HHBP [ppb]: 460 USEPA Acute (One-Day) HHBP [ppb]: 2300	Two (2) wells with detections exceeded the SL. **DPR will evaluate the two (2) wells with detections above the SL.**
Flutriafol	3	0.007 - 0.106	1	0.014	DPR HHRL [ppb]: 395 USEPA Chronic (Lifetime) HHBP [ppb]: 300 USEPA Acute (One-Day) HHBP [ppb]: 2100	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL (Afyuni and Nordmark, 2022).**

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	Wells with Detections at or above the SL[#]	SL (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	DPR Response to Detections
Glyphosate	1	42	1	0.035	SWRCB MCL [ppb]: 700 OEHHA PHG [ppb]: 900 USEPA MCL [ppb]: 700 USEPA MCLG [ppb]: 700 USEPA One-Day HA [ppb]: 20000 USEPA Ten-Day HA [ppb]: 20000 USEPA DWEL HA [ppb]: 70000 USEPA Cancer Group: D	One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Isopropyl alcohol	2	2.2 - 11.4	2	0.035	No health levels available.	Two (2) wells with detections exceeded the SL. **DPR will evaluate the two (2) wells with detections above the SL.**
Methoxyfenozide	37	0.001 - 0.301	6	0.021	DPR HHRL [ppb]: 895 USEPA Chronic (Lifetime) HHBP [ppb]: 600	Six (6) wells with detections exceeded the SL. Two (2) wells with detections above the SL were sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate these two (2) wells further. **DPR will evaluate the four (4) wells with detections above the SL (Afyuni and Nordmark, 2022).**

[#] The Screening Level (SL) is set at 70 percent of the current reporting limit established by DPR's contract laboratory.

Detections of pesticides not registered in California

Seventeen of the compounds detected are no longer registered (inactive) for use as a pesticide in California (e.g., detections from legacy pesticide use or non-pesticidal use). DPR includes these compounds in the annual report and WIDB but does not conduct further evaluation. These compounds are 1,2-dichloropropane (1,2-D), 1h-1,2,4-triazole (tautomer of 1,2,4-triazole), carbon disulfide, carbon tetrachloride, DBCP, DCPA mono/di-acid degradates (TPA, MTP), dalapon, ethylene dibromide (dibromoethane), ethylene dichloride (1,2-dichloroethane), formaldehyde, molinate, naphthalene, ortho-dichlorobenzene (1,2-dichlorobenzene), propazine, xylene, xylene, m- and p- (isomers of o-xylene), and o-xylene (isomer of m- and p-xylene).

Table 2E. Detailed summary of compounds detected in groundwater that are not currently registered for use as a pesticide in California

Detection concentration ranges and drinking water quality standards are reported in parts per billion (ppb). The last column includes the year the compound was last registered for use as a pesticide in California.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	Registration Status
1,2-Dichloropropane (1,2-D)	21	0.003 - 1.2	SWRCB MCL [ppb]: 5 OEHHA PHG [ppb]: 0.5 USEPA MCL [ppb]: 5 USEPA MCLG [ppb]: 0 USEPA Ten-Day HA [ppb]: 90 USEPA 10E-4 Cancer Risk [ppb]: 60 USEPA Cancer Group: B2	No products registered for use in California since 1990.
1H-1,2,4-Triazole (tautomer of 1,2,4-Triazole)	1	0.03	No health levels available.	Never registered for use in California.
Carbon disulfide	2	0.02 - 0.1	USGS Non-Cancer HBSL [ppb]: 600	No products registered for use in California since 1987.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	Registration Status
Carbon tetrachloride	35	0.01 - 8.9	SWRCB MCL [ppb]: 0.5 OEHHA PHG [ppb]: 0.1 USEPA MCL [ppb]: 5 USEPA MCLG [ppb]: 0 USEPA One-Day HA [ppb]: 4000 USEPA Ten-Day HA [ppb]: 200 USEPA DWEL HA [ppb]: 100 USEPA Lifetime HA [ppb]: 3 USEPA 10E-4 Cancer Risk [ppb]: 50 USEPA Cancer Group: L	No products registered for use in California since 1987.
DBCP	260	0.01 - 0.81	SWRCB MCL [ppb]: 0.2 OEHHA PHG [ppb]: 0.003 USEPA MCL [ppb]: 0.2 USEPA MCLG [ppb]: 0 USEPA One-Day HA [ppb]: 200 USEPA Ten-Day HA [ppb]: 50 USEPA 10E-4 Cancer Risk [ppb]: 3 USEPA Cancer Group: B2	Never registered for use in California.
DCPA mono/di-acid degradates (TPA, MTP)	4	1.3 - 3.5	DPR HHRL [ppb]: ǂ	No products registered for use in California since 2024. The detections have been determined not to pollute groundwater (Leahy, 2018).
Dalapon	1	0.39	SWRCB MCL [ppb]: 200 OEHHA PHG [ppb]: 790 USEPA MCL [ppb]: 200 USEPA MCLG [ppb]: 200 USEPA One-Day HA [ppb]: 3000 USEPA Ten-Day HA [ppb]: 3000 USEPA DWEL HA [ppb]: 20000 USEPA Cancer Group: D	No products registered for use in California since 1990.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	Registration Status
Ethylene dibromide (dibromoethane)	4	0.021 - 0.12	SWRCB MCL [ppb]: 0.05 OEHHA PHG [ppb]: 0.01 USEPA MCL [ppb]: 0.05 USEPA MCLG [ppb]: 0 USEPA One-Day HA [ppb]: 8 USEPA Ten-Day HA [ppb]: 8 USEPA DWEL HA [ppb]: 300 USEPA 10E-4 Cancer Risk [ppb]: 2 USEPA Cancer Group: L	No products registered for use in California since 1987.
Ethylene dichloride (1,2-Dichloroethane)	16	0.1 - 4.3	SWRCB MCL [ppb]: 0.5 OEHHA PHG [ppb]: 0.4 USEPA MCL [ppb]: 5 USEPA MCLG [ppb]: 0 USEPA One-Day HA [ppb]: 700 USEPA Ten-Day HA [ppb]: 700 USEPA 10E-4 Cancer Risk [ppb]: 40 USEPA Cancer Group: B2	No products registered for use in California since 1990.
Formaldehyde	10	2.5 - 4.8	USEPA One-Day HA [ppb]: 10000 USEPA Ten-Day HA [ppb]: 5000 USEPA DWEL HA [ppb]: 7000 USEPA Lifetime HA [ppb]: 1000 USEPA Cancer Group: B1	No products registered for use in California since 2020.
Molinate	1	1	SWRCB MCL [ppb]: 20 OEHHA PHG [ppb]: 1 USGS Non-Cancer HBSL [ppb]: 0.6	No products registered for use in California since 2009.
Naphthalene	3	0.1 - 0.9	USEPA One-Day HA [ppb]: 500 USEPA Ten-Day HA [ppb]: 500 USEPA DWEL HA [ppb]: 700 USEPA Lifetime HA [ppb]: 100 USEPA Cancer Group: I USGS Non-Cancer HBSL [ppb]: 100	No products registered for use in California since 1992.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	Registration Status
Ortho-dichlorobenzene (1,2-Dichlorobenzene)	1	0.016	SWRCB MCL [ppb]: 600 OEHHA PHG [ppb]: 600 USEPA MCL [ppb]: 600 USEPA MCLG [ppb]: 600 USEPA One-Day HA [ppb]: 9000 USEPA Ten-Day HA [ppb]: 9000 USEPA DWEL HA [ppb]: 3000 USEPA Lifetime HA [ppb]: 600 USEPA Cancer Group: D	No products registered for use in California since 1985.
Propazine	1	0.001	USGS Non-Cancer HBSL [ppb]: 40	No products registered for use in California since 1988.
Xylene	5	0.58 - 180	SWRCB MCL [ppb]: 1750†† OEHHA PHG [ppb]: 1800†† USEPA MCL [ppb]: 10000†† USEPA MCLG [ppb]: 10000†† USEPA One-Day HA [ppb]: 40000†† USEPA Ten-Day HA [ppb]: 40000†† USEPA DWEL HA [ppb]: 7000†† USEPA Cancer Group: I	No products registered for use in California since 1994.
Xylene, m- and p- (isomers of o-xylene)	1	0.7	SWRCB MCL [ppb]: 1750†† OEHHA PHG [ppb]: 1800†† USEPA MCL [ppb]: 10000†† USEPA MCLG [ppb]: 10000†† USEPA One-Day HA [ppb]: 40000†† USEPA Ten-Day HA [ppb]: 40000†† USEPA DWEL HA [ppb]: 7000†† USEPA Cancer Group: I	No products registered for use in California since 1994.

Pesticide or Degradate	Wells with Detections	Detected Concentration Range (ppb)	State and Federal Drinking Water Health and Quality Standards (ppb) [Table 2A]	Registration Status
o-Xylene (isomer of m- and p-xylene)	1	0.095	SWRCB MCL [ppb]: 1750†† OEHHA PHG [ppb]: 1800†† USEPA MCL [ppb]: 10000†† USEPA MCLG [ppb]: 10000†† USEPA One-Day HA [ppb]: 40000†† USEPA Ten-Day HA [ppb]: 40000†† USEPA DWEL HA [ppb]: 7000†† USEPA Cancer Group: I	No products registered for use in California since 1994.

‡ The HHRL for DCPA degradates was determined under a special/non-standard process and is related to health reference levels determined by USEPA for DCPA and degradates (TPA, MTP): https://www.cdpr.ca.gov/wp-content/uploads/2024/10/dacthal_risk_groundwater.pdf, https://www.epa.gov/ccl/regulatory-determination-2-support-documents-dacthal-mono-acid-mtp-and-di-acid-tpa-degradates.

†† If one or more residues of xylene isomers are detected in the same groundwater sample, the values should be summed and compared to the health level.

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APPENDIX A: GROUNDWATER PROTECTION AREAS

Groundwater Protection Areas (GWPAs) are defined as one-square-mile sections of land that DPR has determined to be sensitive to the movement of pesticides to groundwater. GWPAs are established based on either 3CCR section 6800(a)-listed pesticide[28] or degradate detections in groundwater, or by using the CALVUL computer model. Pesticides listed in 3CCR section 6800(a) are regulated as groundwater contaminants in GWPAs and their use is prohibited unless specific management practices are implemented. There are currently 3,840 GWPAs in California encompassing over 2.45 million acres. Table A-1 lists the pesticides and degradates that are regulated in GWPAs.

Table A-1: Seven pesticides listed under 3CCR section 6800(a) of the GWPL and their degradates

Pesticides	Related Degradates
Atrazine	Deisopropylhydroxyatrazine (degradate of atrazine) CIAT (atrazine desethyl; degradate of atrazine) Deethylhydroxyatrazine (OIAT; degradate of atrazine) Desisopropyl desethyl atrazine (degradate of atrazine) ACET (degradate of atrazine and simazine) OIET (2-Hydroxyatrazine; degradate of atrazine) DACT (diaminochlorotriazine, degradate of atrazine and simazine) DEA (degradate of atrazine) Atrazine dealkylated (degradate of atrazine)
Bentazon	2-Amino-n-isopropylbenzamide (AIBA, degradate of bentazon)
Bromacil	
Diuron	3,4-Dichlorophenylurea (DCPU; degradate of diuron) 3,4-Dichloroaniline (isomer of the dichloroanilines; degradate of diuron, linuron, propanil and iprodione) 1-(3,4-dichlorophenyl)-3-methyl urea (DCPMU, diuron desmethyl, degradate of diuron) 2-Ethyl-6-methylaniline (degradate of diuron and monuron)
Norflurazon	DSMN (degradate of norflurazon)
Prometon	
Simazine	ACET (degradate of atrazine and simazine) Diaminohydroxytriazine (degradate of simazine) Deethylhydroxysimazine (degradate of simazine) DACT (diaminochlorotriazine, degradate of atrazine and simazine) Hydroxysimazine (degradate of simazine)

History of GWPA Development

Early research conducted by DPR scientists enabled DPR to identify two important soil conditions that contribute to groundwater 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 areas with high infiltration rates is the

[28] Pesticides listed in 3CCR section 6800(a): atrazine, bentazon, bromacil, norflurazon, prometon, simazine, and diuron (except for diuron products with less than 7% diuron that are applied to foliage).

predominant contamination pathway (Braun and Hawkins, 1991). DPR identified depth-to-groundwater as another factor contributing to contamination when DPR scientists discovered that pesticide detections were more frequent in areas of shallow groundwater (Troiano et al., 1999).

In 2004, DPR implemented regulations that replaced Pesticide Management Zones (PMZs) with GWPAs[29]. PMZs were one-square-mile sections of land that required mitigation only after specific pesticides were detected in groundwater. In contrast, GWPAs identify sections vulnerable to pesticide contamination and require specific management practices of pesticides listed in 3CCR section 6800(a) regardless of whether they were detected in groundwater within that section. The empirical model CALVUL was used to identify the vulnerable areas by analyzing soil type and depth-to-groundwater data. DPR based designations of GWPAs primarily on this CALVUL modeling effort and then also included all the former (and draft) PMZs from 1989 to 1999 in the designations. DPR's use of the CALVUL model increased the area under regulation from 313,000 acres (the acreage identified as PMZs) to about 2.4 million acres (PMZs plus GWPAs). The science and regulatory aspects are explained in more detail in the following sections.

Initial Basis for GWPA Designation

In 2004, DPR implemented regulations that established GWPAs for *leaching* or *runoff* pathways based on the following factors (Troiano et al., 2000; Marade and Troiano, 2000):

- If a section of land had an estimated depth-to-groundwater 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-groundwater 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 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 groundwater.

[29] GWPAs 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-groundwater of 70 feet or less.

New GWPA Designations

DPR establishes new GWPAs based on the following factors:

- CALVUL modeling identifies the section as vulnerable; or

- Active ingredients listed in 3CCR section 6800(a), or their degradation products, are detected 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. (See **Figure A-1** to understand how new GWPAs are added based on detections.)

In 2020, DPR designated 122 additional sections (approximately 78,000 acres) in 15 counties as GWPAs based on the detections of active ingredients listed in 3CCR section 6800(a) or their degradation products. The document previously incorporated by reference in the definitions of 3CCR section 6000 was amended to include the new GWPAs and was retitled "*Ground Water Protection Areas 2018 (Rev. 10/18).*" The document identifies each GWPA as either a leaching or runoff GWPA. Currently, there are 3,840 GWPAs in California (**Figure A-1**).

Figure A-1. Determination of detection-based GWPAs

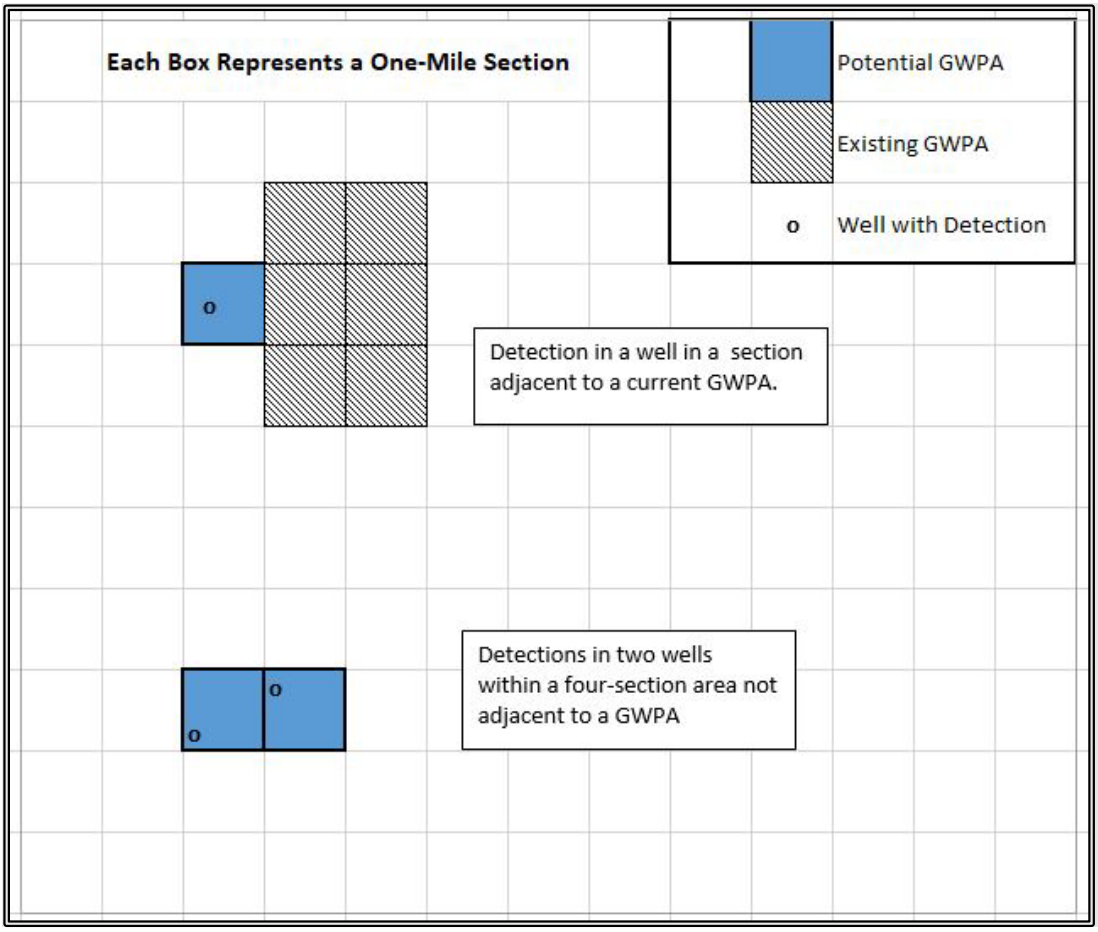

Figure A-2. Groundwater Protection Areas (GWPAs)

Pesticide Use in GWPAs

Individuals using 3CCR section 6800(a) pesticides registered for agricultural, outdoor industrial, and outdoor institutional use in GWPAs are required to modify their use practices. Users must obtain a Restricted Materials permit from their CACs. The permit or Notice of Intent identifies the management practices required for each type of GWPA.[30] At least one of the following management practices (or an alternative management practice approved by the DPR Director) must be met for the following types of GWPA:

- **3CCR section 6487.3 Engineered Rights-of-Way** within a GWPA:

    1) Runoff is directed to a vegetated area or a fallow field;
    2) Compliance with a permit issued pursuant to the storm water provisions of the federal Clean Water Act; or
    3) The property owner complies with the requirements of 3CCR section 6487.4 (see below).

- **3CCR section 6487.4 Runoff GWPAs**:

    1) Application timing is limited to the period April 1 – July 31;
    2) The soil is disturbed prior to pesticide application;
    3) The pesticide is incorporated into the soil;
    4) The pesticide is applied as a band treatment; or
    5) Runoff is retained on- or off-site, or directed to a fallow field.

- **3CCR section 6487.5 Leaching GWPAs**:

    1) The permittee shall not apply any irrigation water for six months following application of the pesticide;
    2) The pesticide shall be applied to the planting bed or the berm above the level of irrigation water; or
    3) Irrigation shall be managed according to a specified formula.

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 accordingly.

[30] More information on how DPR and CACs regulate the use of groundwater contaminants in vulnerable areas is available at: https://www.cdpr.ca.gov/environmental-monitoring/groundwater/ and https://www.cdpr.ca.gov/enforcement/.

APPENDIX B: PRINCIPAL SAMPLING AGENCIES

The principal agencies contributing groundwater monitoring data for this annual Well Sampling Report are DPR, SWRCB, and USGS. Each agency's unique regulatory responsibilities define the pesticides selected for monitoring, type and sensitivity of laboratory analyses, well types sampled, sampling locations, and sampling frequency. For instance, DPR primarily samples shallow, domestic wells in areas where agricultural pesticides are used, while SWRCB assesses the overall quality of groundwater used for consumption (regardless of the frequency or intensity of pesticide use near sampled wells).

Department of Pesticide Regulation

DPR's Groundwater Protection Program samples groundwater as a function of its responsibilities under the PCPA. (See the **Background** section of this report for a detailed description.)

State Water Resources Control Board

SWRCB is responsible for enforcement of the federal and California Safe Drinking Water Acts. To meet the goal of ensuring delivery of safe drinking water, SWRCB's Division of Drinking Water (DDW) oversees approximately 7,500 public water systems and establishes health-protective drinking water standards. These standards, known as maximum contaminant levels (MCLs), are developed by evaluating the health risks presented by a chemical, and by assessing the technical and economic factors related to its use (such as treatment efficacy and cost). SWRCB establishes a contaminant's MCL at a level as close to the public health goal[31] (PHG) set 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). The data are reported under the State Drinking Water Information System (SDWIS) available at https://sdwis.waterboards.ca.gov/PDWW/ and https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/EDTlibrary.html.

- The Division of Drinking Water (DDW) regulates public water systems to ensure the delivery of safe drinking water; oversees water recycling projects; issues permits for water treatment devices; supports and promotes water system security; and performs many other functions. DDW consists of two field operations branches and a Program Management Branch. The Northern and Southern California field operations branches are responsible for enforcing the federal and California Safe Drinking Water Acts and regulatory oversight of public water systems. The Program Management Branch includes the Data/Toxicology Office, which compiles, evaluates, and reports drinking water quality data for public water systems.

[31] 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.

- DDW performs a role that was previously performed by the California Department of Public Health (CDPH); this role includes reporting pesticide detections in drinking water wells to DPR.

The SWRCB and Regional Water Quality Control Boards, in accordance with the Porter-Cologne Water Quality Control Act, establish monitoring and reporting requirements which include collection and submittal of groundwater monitoring data. The SWRCB also monitors groundwater as a function of its Groundwater Ambient Monitoring and Assessment Program (GAMA).[32] This program is designed to improve groundwater quality and increase public availability of information about groundwater quality. 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 the groundwater used in California. The GAMA Program includes four projects:

- The GAMA Priority Basin Project monitors dozens of chemicals at very low detection limits. Monitoring and assessment of priority basins are completed every ten years; trend monitoring is performed every three years. SWRCB collaborates with USGS and the Lawrence Livermore National Laboratory (LLNL) to implement the GAMA Priority Basin Project.

- The GAMA Domestic Well Project samples multiple areas in coordination with county environmental health departments. It also provides water quality information to domestic well users.

- The GAMA Special Studies Project partners with LLNL to conduct groundwater studies that evaluate nitrate, wastewater, and groundwater recharge. LLNL scientists use tools that include Tritium-Helium age dating and computer modeling. The University of California, Davis, also contributes to the GAMA Special Studies Project.

- The GeoTracker GAMA information management system enables users (scientists, regulators, water managers, educators, and the public) to access millions of data records from SWRCB and Regional Water Quality Control Boards, Department of Water Resources, DPR, and USGS. GeoTracker GAMA provides access to a Google map-based database that provides the results of groundwater quality testing, groundwater level evaluations, environmental monitoring well logs, and links to published reports.

Agencies Reporting to the Water Quality Portal

The Water Quality Portal (WQP) is a cooperative data service that integrates publicly available water quality data from USGS, USEPA, and over 400 state, federal, tribal, and local agencies. WQP contains records from more than 4,750 wells sampled for pesticides and more than 20,000 wells sampled for other constituents in California. This information is available through WQP: https://www.waterqualitydata.us/. USGS data are also available through https://waterdata.usgs.gov/download-samples/.

[32] For more information about SWRCB's GAMA Program, go to http://www.waterboards.ca.gov/gama/.

APPENDIX C: THE WELL INVENTORY DATABASE

In the early 1980s, DPR established the Well Inventory Database (WIDB) under the authority granted in FAC section 13152(c) and began collecting groundwater sampling data from public agencies. The database currently contains more than 3.4 million records, including monitoring data from over 37,000 public and private wells sampled for more than 520 different pesticides and degradates (**Figure C-1**). Over 7,000 of the wells in the database have reported detections of at least one pesticide or degradate (**Figure C-2**). The current report added data for 5,424 wells sampled for pesticides or degradates; 514 of those wells had at least one reported detection (**Figure C-3**). Although approximately 45 agencies submitted data for inclusion in the database in the past, most data now added comes from DPR, SWRCB, and WQP (primarily USGS).

The WIDB includes the following information:

- Well location by county
- Well type (domestic, agricultural, industrial, large water system)
- Well sampling agency and study number(s)
- Sample date, analysis date, analyzing laboratory
- Chemical analyzed, concentration detected, method detection limit or reporting limit
- Unusual or important notes about the detection or the analytical method
- Legal agricultural use determination/point or nonpoint source determination
- Year the analysis/detection was added to the database

The dataset available on the website does not include the exact well location for any wells sampled by DPR; instead, the latitude and longitude data provided for DPR-sampled wells are the centroid of their respective public lands survey system section. Data acquired from other agencies through California SDWIS and WQP contain publicly available latitude and longitude and are included in this dataset. Additionally, all wells/samples, regardless of sampling agency, are identified by county, the county-meridian-township-range and section (COMTRS), and the unique well key assigned to all wells in the WIDB.

The WIDB is available for download at: https://calpip.cdpr.ca.gov/wellInventoryDatabase.cfm.

Figure C-1. All wells in the DPR Well Inventory Database

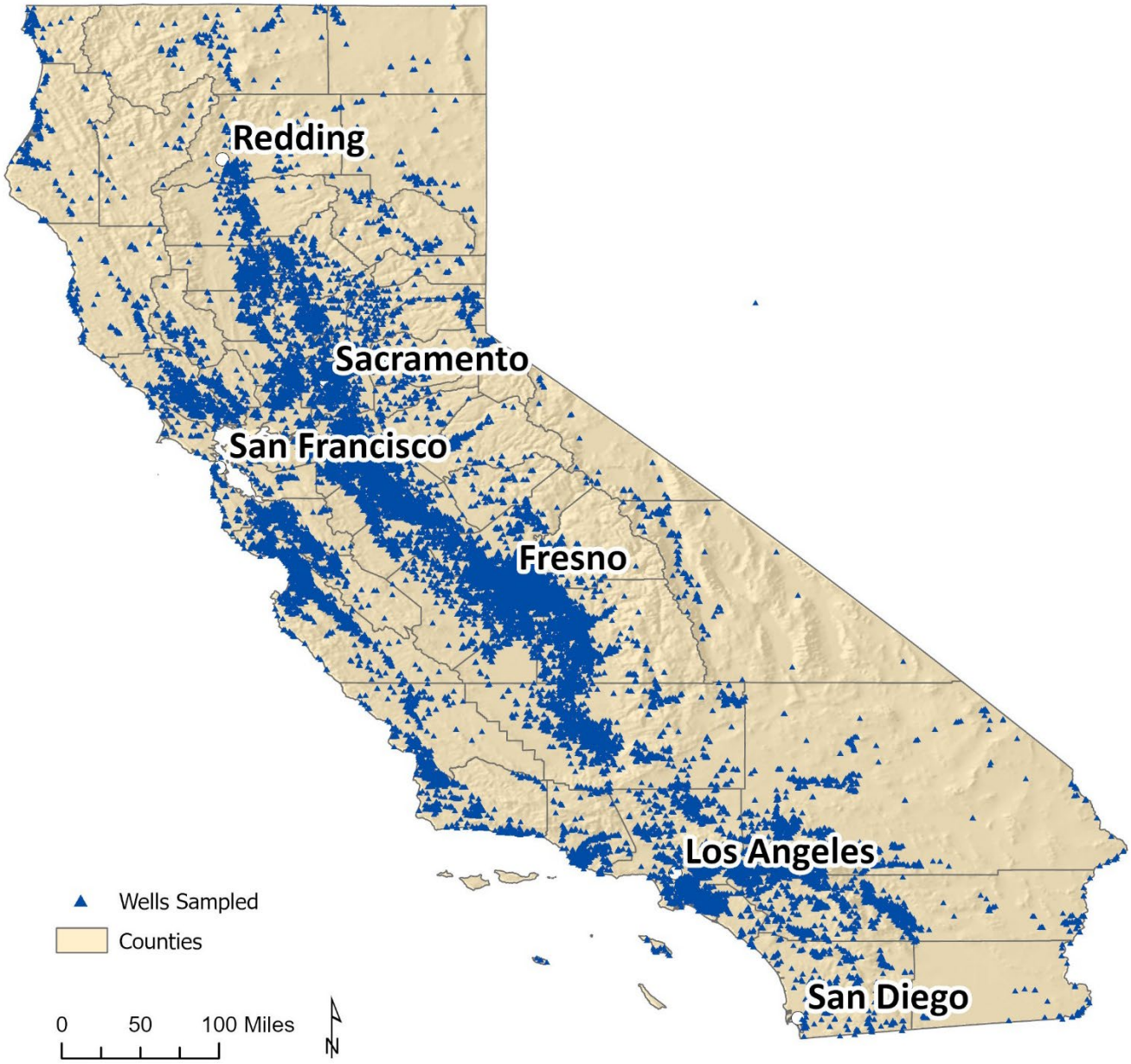

Figure C-2. All wells in the DPR Well Inventory Database with detections of pesticides or degradates

Figure C-3. Well data added to the DPR Well Inventory Database in this reporting period

APPENDIX D: WELL SAMPLING RESULTS SUMMARIZED BY COUNTY

Table D-1, summarizes the following information for each county:

- Total number of wells sampled and tested for pesticides or degradates
- Total number of wells with reported detections
    - Any wells tested multiple times during the year were only counted once
- Total number of specific pesticides or degradates tested
- Total number of specific pesticides or degradates detected
    - A well may be tested for a single chemical or a screen of multiple chemicals, and have various chemicals reported as detected. Also, an individual chemical can be detected in several wells. Each of these scenarios is accounted for in the appropriate column as described in the header row.

Table D-2 provides details on the detections listed in Table D-1. The table only shows the counties with detections and the respective pesticides or degradates detected.

- 'Wells Tested' shows the number of wells in the county tested for the detected chemical
- 'Wells With Detections' shows the number of wells that had detections
- 'Concentration Range' is the concentration levels of the chemical reported in parts per billion (ppb) from the lowest to the highest detection
- 'Wells With Detections Above the SL' is the number of wells with detections greater than the screening level.
- 'SL' is the screening level. The Screening Level (SL) is set at 70 percent of the current reporting limit established by DPR's contract laboratory.
- 'DPR Response to Detection' lists whether the detected pesticide or degradate is currently registered for use in California, and if the detection(s) require additional evaluation. Detections of pesticides at levels below the SL, pesticides previously determined not to pollute at the levels detected, and pesticides on the 6800(a)-list detected in GWPAs will not require additional follow-up. Detections of unregistered pesticides may be from historical use (i.e., DBCP), and DPR will generally not conduct additional evaluation unless illegal use is suspected.

A list of all pesticides and degradates monitored in each county, whether detected or not, is available on request from DPR's Groundwater Protection Program.

Full WIDB downloads are available at https://calpip.cdpr.ca.gov/wellInventoryDatabase.cfm.

Table D-1. Summary of sampling results by county

Total number of wells sampled, pesticides and degradates tested, wells with detections, and the number of specific pesticides and degradates detected for each California county in this report. Dashes (-) = no residues were detected.

County	Wells Tested	Wells With Detections	Pesticides and Degradates Tested	Individual Chemicals Detected
Alameda	31	-	65	-
Alpine	5	-	63	-
Amador	6	-	11	-
Butte	62	-	54	-
Calaveras	5	1	102	2
Colusa	14	4	121	11
Contra Costa	34	2	152	2
Del Norte	2	-	11	-
El Dorado	32	-	135	-
Fresno	334	158	164	29
Glenn	28	6	130	13
Humboldt	5	-	13	-
Imperial	7	-	55	-
Inyo	38	-	87	-
Kern	332	30	67	6
Kings	22	-	32	-
Lake	37	-	56	-
Lassen	16	1	16	1
Los Angeles	769	38	106	6
Madera	154	34	164	17
Marin	18	-	37	-
Mariposa	32	2	107	6
Mendocino	60	1	72	4
Merced	85	16	132	8
Modoc	3	-	11	-
Mono	14	-	77	-
Monterey	216	16	132	10
Napa	68	-	65	-
Nevada	23	-	60	-
Orange	226	4	73	1
Placer	49	-	74	-
Plumas	15	-	26	-
Riverside	245	10	82	2
Sacramento	263	2	80	1
San Benito	33	1	66	1
San Bernardino	411	34	101	7
San Diego	139	6	86	2
San Francisco	5	1	11	1
San Joaquin	204	31	165	11
San Luis Obispo	94	1	104	1

County	Wells Tested	Wells With Detections	Pesticides and Degradates Tested	Individual Chemicals Detected
San Mateo	37	-	59	-
Santa Barbara	81	2	113	6
Santa Clara	133	4	136	3
Santa Cruz	63	2	123	3
Shasta	28	-	17	-
Sierra	4	-	14	-
Siskiyou	16	-	17	-
Solano	24	4	136	17
Sonoma	203	-	88	-
Stanislaus	161	20	144	5
Sutter	16	-	45	-
Tehama	51	3	103	4
Trinity	3	-	11	-
Tulare	265	66	164	24
Tuolumne	60	6	105	2
Ventura	49	-	69	-
Yolo	63	8	145	9
Yuba	31	-	53	-

Table D-2. Pesticides or degradates detected by county and DPR response to detections.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Calaveras	Hexazinone	1	1	0.002	-	0.007	No detections exceeded the SL.
Calaveras	Methoxyfenozide	1	1	0.002	-	0.021	No detections exceeded the SL.
Colusa	ACET (degradate of atrazine and simazine)	1	1	0.009	-	0.014	No detections exceeded the SL.
Colusa	Atrazine	1	1	0.002	-	0.014	No detections exceeded the SL.
Colusa	Bentazon	2	2	0.004 - 0.765	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Colusa	DEA (degradate of atrazine)	1	1	0.003	-	0.014	No detections exceeded the SL.
Colusa	Hexazinone	1	1	0.008	1	0.007	Registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
Colusa	Hydroxysimazine (degradate of simazine)	1	1	0.036	1	0.035	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Colusa	Imazethapyr	1	1	0.002	-	0.035	No detections exceeded the SL.
Colusa	Methoxyfenozide	2	2	0.002	-	0.021	No detections exceeded the SL.
Colusa	Metolachlor ESA (degradate of metolachlor)	1	1	0.033	-	0.035	No detections exceeded the SL.
Colusa	OIET (2-Hydroxyatrazine; degradate of atrazine)	1	1	0.002	-	0.035	No detections exceeded the SL.
Colusa	Simazine	1	1	0.011	-	0.014	No detections exceeded the SL.
Contra Costa	Bentazon	1	1	0.008	-	0.014	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Contra Costa	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	1	1	0.028	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Fresno	1,2-Dichloropropane (1,2-D)	3	3	0.004 - 0.89	-	-	There have been no products registered for use in California since 1990.
Fresno	1-(3,4-dichlorophenyl)-3-methyl urea (DCPMU, diuron desmethyl, degradate of diuron)	1	1	0.008	-	0.035	No detections exceeded the SL.
Fresno	ACET (degradate of atrazine and simazine)	54	54	0.002 - 0.376	44	0.014	Degradate of a registered 6800(a) list pesticide. Forty-four (44) wells with detections exceeded the SL. Forty-three (43) wells with detections above the SL are in GWPAs. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Fresno	Atrazine	8	8	0.001 - 0.058	2	0.014	Registered 6800(a) list pesticide. Two (2) wells with detections exceeded the SL. Two (2) wells with detections above the SL are in GWPAs.
Fresno	Azoxystrobin	1	1	0.005 - 0.007	-	0.014	No detections exceeded the SL.
Fresno	Bromacil	19	19	0.002 - 3.16	13	0.014	Registered 6800(a) list pesticide. Thirteen (13) wells with detections exceeded the SL. Thirteen (13) wells with detections above the SL are in GWPAs.
Fresno	Carbon disulfide	2	2	0.02 - 0.1	-	-	There have been no products registered for use in California since 1987.
Fresno	Chlorantraniliprole	5	5	0.003 - 0.252	3	0.014	Registered pesticide. Three (3) wells with detections exceeded the SL. **DPR will evaluate the three (3) wells with detections above the SL.**

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Fresno	Clothianidin	13	13	0.002 - 0.207	6	0.014	Registered pesticide. Six (6) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the five (5) wells with detections above the SL.**
Fresno	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	53	53	0.006 - 3.43	49	0.014	Degradate of a registered 6800(a) list pesticide. Forty-nine (49) wells with detections exceeded the SL. Forty-seven (47) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
Fresno	DBCP	92	92	0.01 - 0.45	-	-	No products registered for use in California since 1979.
Fresno	DEA (degradate of atrazine)	22	22	0.002 - 0.089	5	0.014	Degradate of a registered 6800(a) list pesticide. Five (5) wells with detections exceeded the SL. Five (5) wells with detections above the SL are in GWPAs.
Fresno	DSMN (degradate of norflurazon)	39	39	0.003 - 1.16	36	0.007	Degradate of a registered 6800(a) list pesticide. Thirty-six (36) wells with detections exceeded the SL. Thirty-five (35) wells with detections above the SL are in GWPAs. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Fresno	Desulfinyl fipronil (degradate of fipronil)	1	1	0.003	-	0.035	No detections exceeded the SL.
Fresno	Diuron	31	31	0.002 - 0.056	22	0.014	Registered 6800(a) list pesticide. Twenty-two (22) wells with detections exceeded the SL. Twenty-two (22) wells with detections above the SL are in GWPAs.
Fresno	Ethylene dibromide (Dibromoethane)	1	1	0.022 - 0.025	-	0.035	No detections exceeded the SL.
Fresno	Ethylene dichloride (1,2-Dichloroethane)	1	1	0.1	-	-	There have been no products registered for use in California since 1990.
Fresno	Fludioxonil	2	2	0.039 - 0.568	2	0.0175	Registered pesticide. Two (2) wells with detections exceeded the SL. **DPR will evaluate the two (2) wells with detections above the SL.**

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Fresno	Flutriafol	2	2	0.003 - 0.106	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Fresno	Hexazinone	5	5	0.002 - 0.025	1	0.007	Registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
Fresno	Imidacloprid	16	16	0.003 - 0.108	7	0.014	Registered pesticide. Seven (7) wells with detections exceeded the SL. DPR evaluated seven (7) wells with detections above the SL based on the findings of the PCPA Review Process. The detections have been determined not to pollute groundwater.
Fresno	Mefenoxam (metalaxyl-m; isomer of metalaxyl)	3	3	0.005 - 0.008	-	0.014	No detections exceeded the SL.
Fresno	Methoxyfenozide	15	15	0.001 - 0.301	3	0.021	Registered pesticide. Three (3) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the two (2) wells with detections above the SL.**
Fresno	Myclobutanil	1	1	0.005	-	0.014	No detections exceeded the SL.
Fresno	Norflurazon	27	27	0.002 - 0.213	20	0.014	Registered 6800(a) list pesticide. Twenty (20) wells with detections exceeded the SL. Nineteen (19) wells with detections above the SL are in GWPAs. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Fresno	Prometon	2	2	0.003 - 0.014	1	0.014	A 6800(a) list pesticide with no currently registered products. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL is in a GWPA.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Fresno	Simazine	47	47	0.003 - 0.108	41	0.014	Registered 6800(a) list pesticide. Forty-one (41) wells with detections exceeded the SL. Forty (40) wells with detections above the SL are in GWPAs. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Fresno	Tebuthiuron	1	1	0.014 - 0.024	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Fresno	Thiamethoxam	1	1	0.013 - 0.014	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.
Glenn	1H-1,2,4-Triazole (tautomer of 1,2,4-Triazole)	1	1	0.03	-	0.035	No detections exceeded the SL.
Glenn	Atrazine	3	3	0.001 - 0.003	-	0.014	No detections exceeded the SL.
Glenn	Bentazon	1	1	0.03	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Glenn	Bromacil	2	2	0.003 - 0.222	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Glenn	Carbon tetrachloride	1	1	0.02	-	0.035	No detections exceeded the SL.
Glenn	DEA (degradate of atrazine)	1	1	0.004	-	0.014	No detections exceeded the SL.
Glenn	Deethylhydroxyatrazine (OIAT; degradate of atrazine)	1	1	0.005	-	0.035	No detections exceeded the SL.
Glenn	Hexazinone	1	1	0.003	-	0.007	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Glenn	Hydroxysimazine (degradate of simazine)	1	1	0.007	-	0.035	No detections exceeded the SL.
Glenn	Methoxyfenozide	1	1	0.043	1	0.021	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Glenn	Metolachlor ESA (degradate of metolachlor)	1	1	0.029	-	0.035	No detections exceeded the SL.
Glenn	OIET (2-Hydroxyatrazine; degradate of atrazine)	1	1	0.006	-	0.035	No detections exceeded the SL.
Glenn	Prometon	1	1	0.001	-	0.014	No detections exceeded the SL.
Kern	1,2-Dichloropropane (1,2-D)	5	5	0.012 - 0.8	-	-	There have been no products registered for use in California since 1990.
Kern	DBCP	22	22	0.01 - 0.81	-	-	No products registered for use in California since 1979.
Kern	Ethylene dibromide (Dibromoethane)	2	2	0.023 - 0.12	-	-	There have been no products registered for use in California since 1987.
Kern	Naphthalene	2	2	0.1 - 0.46	-	-	There have been no products registered for use in California since 1992.
Kern	Xylene	1	1	2.6 - 180	-	-	There have been no products registered for use in California since 1994.
Kern	o-Xylene (isomer of m- and p-xylene)	1	1	0.095	-	-	There have been no products registered for use in California since 1994.
Lassen	Carbon tetrachloride	1	1	2.7 - 7.2	-	-	There have been no products registered for use in California since 1987.
Los Angeles	Bromacil	4	4	0.096 - 0.18	4	0.014	Registered 6800(a) list pesticide. Four (4) wells with detections exceeded the SL**. DPR will evaluate the four (4) wells with detections above the SL and not in GWPAs.**
Los Angeles	Carbon tetrachloride	28	28	0.5 - 8.9	-	-	There have been no products registered for use in California since 1987.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Los Angeles	DBCP	6	6	0.013 - 0.15	-	-	No products registered for use in California since 1979.
Los Angeles	Ethylene dichloride (1,2-Dichloroethane)	10	10	0.5 - 2	-	-	There have been no products registered for use in California since 1990.
Los Angeles	Naphthalene	1	1	0.58 - 0.9	-	-	There have been no products registered for use in California since 1992.
Los Angeles	Simazine	1	1	0.14	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL is in a GWPA.
Madera	1,2-Dichloropropane (1,2-D)	2	2	0.009 - 0.132	-	-	There have been no products registered for use in California since 1990.
Madera	1-(3,4-dichlorophenyl)-3-methyl urea (DCPMU, diuron desmethyl, degradate of diuron)	1	1	0.002	-	0.035	No detections exceeded the SL.
Madera	ACET (degradate of atrazine and simazine)	6	6	0.018 - 0.159	6	0.014	Degradate of a registered 6800(a) list pesticide. Six (6) wells with detections exceeded the SL. Four (4) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
Madera	Atrazine	4	4	0.001 - 0.026	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Madera	Bromacil	1	1	0.066 - 0.084	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Madera	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	6	6	0.071 - 0.737	6	0.014	Degradate of a registered 6800(a) list pesticide. Six (6) wells with detections exceeded the SL. Four (4) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Madera	DBCP	25	25	0.01 - 0.61	-	-	No products registered for use in California since 1979.
Madera	DEA (degradate of atrazine)	7	7	0.002 - 0.025	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Madera	DSMN (degradate of norflurazon)	3	3	0.008 - 0.037	3	0.007	Degradate of a registered 6800(a) list pesticide. Three (3) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. One (1) well with a detection above the SL is in a GWPA. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Madera	Diuron	2	2	0.009 - 0.015	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.
Madera	Fipronil sulfide (degradate of fipronil)	1	1	0.001	-	0.035	No detections exceeded the SL.
Madera	Fipronil sulfone (degradate of fipronil)	1	1	0.001	-	0.035	No detections exceeded the SL.
Madera	Hydroxymetolachlor (degradate of metolachlor)	1	1	0.004	-	0.035	No detections exceeded the SL.
Madera	Imidacloprid	1	1	0.011	-	0.014	No detections exceeded the SL.
Madera	Methoxyfenozide	2	2	0.001 - 0.003	-	0.021	No detections exceeded the SL.
Madera	Norflurazon	1	1	0.009 - 0.015	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Madera	Simazine	2	2	0.006 - 0.014	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.
Mariposa	1,2-Dichloropropane (1,2-D)	1	1	0.6	-	-	There have been no products registered for use in California since 1990.
Mariposa	Fipronil	1	1	0.004	-	0.035	No detections exceeded the SL.
Mariposa	Fipronil sulfone (degradate of fipronil)	1	1	0.008	-	0.035	No detections exceeded the SL.
Mariposa	Fipronil-carboxamide (degradate of fipronil)	1	1	0.037	1	0.035	Degradate of a registered pesticide. One (1) well with a detection exceeded the SL. DPR will evaluate the one (1) well with a detection above the SL.
Mariposa	Isopropyl alcohol	1	1	11.4	1	0.035	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Mariposa	Methoxyfenozide	1	1	0.001	-	0.021	No detections exceeded the SL.
Mendocino	Alachlor	1	1	1	-	-	There have been no products registered for use in California since 2016.
Mendocino	Atrazine	1	1	1	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Mendocino	Molinate	1	1	1	-	-	There have been no products registered for use in California since 2009.
Mendocino	Simazine	1	1	1	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Merced	ACET (degradate of atrazine and simazine)	1	1	0.018	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Merced	Bentazon	1	1	0.014	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Merced	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	1	1	0.107	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Merced	DBCP	13	13	0.01 - 0.58	-	-	No products registered for use in California since 1979.
Merced	DEA (degradate of atrazine)	1	1	0.005	-	0.014	No detections exceeded the SL.
Merced	Hexazinone	1	1	0.002	-	0.007	No detections exceeded the SL.
Merced	Methoxyfenozide	1	1	0.002	-	0.021	No detections exceeded the SL.
Merced	Simazine	1	1	0.011	-	0.014	No detections exceeded the SL.
Monterey	1,2-Dichloropropane (1,2-D)	1	1	0.003	-	0.035	No detections exceeded the SL.
Monterey	ACET (degradate of atrazine and simazine)	4	4	0.002 - 0.008	-	0.014	No detections exceeded the SL.
Monterey	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	4	4	0.013 - 0.082	3	0.014	Degradate of a registered 6800(a) list pesticide. Three (3) wells with detections exceeded the SL. **DPR evaluated three (3) wells with detections above the SL, confirmed the detections, and responded in a memo.**
Monterey	DEA (degradate of atrazine)	2	2	0.002	-	0.014	No detections exceeded the SL.
Monterey	Dichloran	5	5	0.009 - 0.012	-	0.035	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Monterey	Diuron	2	2	0.021 - 0.067	2	0.014	Registered 6800(a) list pesticide. Two (2) wells with detections exceeded the SL. **DPR evaluated two (2) wells with detections above the SL, confirmed the detections, and responded in a memo.**
Monterey	Formaldehyde	7	7	2.5 - 4.3	-	-	There have been no products registered for use in California since 2020.
Monterey	Imidacloprid	1	1	0.005 - 0.006	-	0.014	No detections exceeded the SL.
Monterey	Isopropyl alcohol	1	1	2.2	1	0.035	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Monterey	Simazine	5	5	0.003 - 0.038	2	0.014	Registered 6800(a) list pesticide. Two (2) wells with detections exceeded the SL. DPR evaluated two (2) wells with detections above the SL, confirmed the detections, and responded in a memo.
Orange	Simazine	4	4	0.1 - 0.2	4	0.014	Registered 6800(a) list pesticide. Four (4) wells with detections exceeded the SL. Four (4) wells with detections above the SL are in GWPAs.
Riverside	1,2-Dichloropropane (1,2-D)	1	1	0.81	-	-	There have been no products registered for use in California since 1990.
Riverside	DBCP	9	9	0.01 - 0.22	-	-	No products registered for use in California since 1979.
Sacramento	DBCP	2	2	0.01 - 0.02	-	0.035	No detections exceeded the SL.
San Benito	Formaldehyde	1	1	3.6 - 3.7	-	-	There have been no products registered for use in California since 2020.
San Bernardino	1,2-Dichloropropane (1,2-D)	1	1	0.57 - 0.92	-	-	There have been no products registered for use in California since 1990.
San Bernardino	Bromacil	2	2	0.14	2	0.014	Registered 6800(a) list pesticide. Two (2) wells with detections exceeded the SL. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
San Bernardino	Carbon tetrachloride	2	2	0.51 - 0.69	-	-	There have been no products registered for use in California since 1987.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
San Bernardino	DBCP	26	26	0.01 - 0.18	-	-	No products registered for use in California since 1979.
San Bernardino	DCPA mono/di-acid degradates (TPA, MTP)	4	4	1.3 - 3.5	-	-	There have been no products registered for use in California since 2024.
San Bernardino	Glyphosate	1	1	42	1	0.035	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
San Bernardino	Ortho-dichlorobenzene (1,2-Dichlorobenzene)	1	1	0.016	-	0.035	No detections exceeded the SL.
San Diego	1,2-Dichloropropane (1,2-D)	4	4	0.5 - 1.1	-	-	There have been no products registered for use in California since 1990.
San Diego	Xylene	2	2	0.58 - 0.83	-	-	There have been no products registered for use in California since 1994.
San Francisco	Carbon tetrachloride	1	1	0.8	-	-	There have been no products registered for use in California since 1987.
San Joaquin	1,2-Dichloropropane (1,2-D)	1	1	1.2	-	-	There have been no products registered for use in California since 1990.
San Joaquin	ACET (degradate of atrazine and simazine)	3	3	0.003 - 0.009	-	0.014	No detections exceeded the SL.
San Joaquin	Atrazine	1	1	0.003	-	0.014	No detections exceeded the SL.
San Joaquin	Bentazon	1	1	0.007	-	0.014	No detections exceeded the SL.
San Joaquin	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	3	3	0.017 - 0.124	3	0.014	Degradate of a registered 6800(a) list pesticide. Three (3) wells with detections exceeded the SL. Three (3) wells with detections above the SL are in GWPAs.
San Joaquin	DBCP	26	26	0.01 - 0.61	-	-	No products registered for use in California since 1979.
San Joaquin	DEA (degradate of atrazine)	2	2	0.005 - 0.011	-	0.014	No detections exceeded the SL.
San Joaquin	Dechlorometolachlor (degradate of metolachlor)	1	1	0.004	-	0.035	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
San Joaquin	Hexazinone	1	1	0.009	1	0.007	Registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
San Joaquin	Metolachlor ESA (degradate of metolachlor)	1	1	0.091	1	0.035	Degradate of a registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
San Joaquin	Simazine	1	1	0.01 - 0.018	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL is in a GWPA.
San Luis Obispo	Dichloran	1	1	0.013	-	0.035	No detections exceeded the SL.
Santa Barbara	Chlorantraniliprole	1	1	0.012	-	0.014	No detections exceeded the SL.
Santa Barbara	Dichloran	1	1	0.013	-	0.035	No detections exceeded the SL.
Santa Barbara	Diuron	2	2	0.005 - 0.023	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR evaluated one (1) well with a detection above the SL, confirmed the detection, and responded in a memo.**
Santa Barbara	Flupyradifurone	1	1	0.024	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Santa Barbara	Flutriafol	1	1	0.01	-	0.014	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Santa Barbara	Methoxyfenozide	2	2	0.03 - 0.033	2	0.021	Registered pesticide. Two (2) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the one (1) well with a detection above the SL.**
Santa Clara	Carbon tetrachloride	1	1	0.01	-	0.035	No detections exceeded the SL.
Santa Clara	Dichloran	1	1	0.014	-	0.035	No detections exceeded the SL.
Santa Clara	Formaldehyde	2	2	2.5 - 4.8	-	-	There have been no products registered for use in California since 2020.
Santa Cruz	Mefenoxam (metalaxyl-m; isomer of metalaxyl)	1	1	0.009 - 0.01	-	0.014	No detections exceeded the SL.
Santa Cruz	Methoxyfenozide	1	1	0.005 - 0.006	-	0.021	No detections exceeded the SL.
Santa Cruz	Prometryn	1	1	0.003	-	0.014	No detections exceeded the SL.
Solano	1,2-Dichloropropane (1,2-D)	1	1	0.095	-	-	There have been no products registered for use in California since 1990.
Solano	ACET (degradate of atrazine and simazine)	1	1	0.033	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Solano	Atrazine	2	2	0.008 - 0.017	1	0.014	Registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Solano	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	1	1	0.964	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Solano	DEA (degradate of atrazine)	3	3	0.004 - 0.057	1	0.014	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Solano	Deethylhydroxyatrazine (OIAT; degradate of atrazine)	1	1	0.021	-	0.035	No detections exceeded the SL.
Solano	Fipronil	1	1	0.001	-	0.035	No detections exceeded the SL.
Solano	Hexazinone	1	1	0.092	1	0.007	Registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
Solano	Hydroxymetolachlor (degradate of metolachlor)	1	1	0.007	-	0.035	No detections exceeded the SL.
Solano	Hydroxysimazine (degradate of simazine)	1	1	0.035	1	0.035	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further.
Solano	Methoxyfenozide	1	1	0.002	-	0.021	No detections exceeded the SL.
Solano	Metolachlor ESA (degradate of metolachlor)	2	2	0.076 - 1.46	2	0.035	Degradate of a registered pesticide. Two (2) wells with detections exceeded the SL. DPR evaluated two (2) wells with detections above the SL based on the findings of the PCPA Review Process. The detections have been determined not to pollute groundwater.
Solano	Metolachlor OXA (degradate of metolachlor)	1	1	0.222	1	0.035	Degradate of a registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Solano	OIET (2-Hydroxyatrazine; degradate of atrazine)	1	1	0.003	-	0.035	No detections exceeded the SL.
Solano	Propazine	1	1	0.001	-	0.035	No detections exceeded the SL.
Solano	Simazine	1	1	0.002	-	0.014	No detections exceeded the SL.
Solano	Sulfometuron-methyl	1	1	0.001	-	0.035	No detections exceeded the SL.
Stanislaus	ACET (degradate of atrazine and simazine)	1	1	0.004	-	0.014	No detections exceeded the SL.
Stanislaus	DBCP	17	17	0.02 - 0.42	-	-	No products registered for use in California since 1979.
Stanislaus	Metolachlor ESA (degradate of metolachlor)	1	1	0.072	1	0.035	Degradate of a registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
Stanislaus	Simazine	1	1	0.003	-	0.014	No detections exceeded the SL.
Stanislaus	Xylene	1	1	2.1	-	-	There have been no products registered for use in California since 1994.
Tehama	Atrazine	1	1	0.003	-	0.014	No detections exceeded the SL.
Tehama	DEA (degradate of atrazine)	1	1	0.007	-	0.014	No detections exceeded the SL.
Tehama	Hydroxysimazine (degradate of simazine)	2	2	0.007 - 0.008	-	0.035	No detections exceeded the SL.
Tehama	Methoxyfenozide	2	2	0.001 - 0.004	-	0.021	No detections exceeded the SL.
Tulare	1,2-Dichloropropane (1,2-D)	1	1	0.004	-	0.035	No detections exceeded the SL.
Tulare	ACET (degradate of atrazine and simazine)	41	41	0.006 - 0.592	34	0.014	Degradate of a registered 6800(a) list pesticide. Thirty-four (34) wells with detections exceeded the SL. Thirty-two (32) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
Tulare	Atrazine	7	7	0.003 - 0.011	-	0.014	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Tulare	Bromacil	22	22	0.007 - 1.07	20	0.014	Registered 6800(a) list pesticide. Twenty (20) wells with detections exceeded the SL. Twenty (20) wells with detections above the SL are in GWPAs.
Tulare	Chlorantraniliprole	5	5	0.002 - 0.008	-	0.014	No detections exceeded the SL.
Tulare	Clothianidin	8	8	0.002 - 0.038	2	0.014	Registered pesticide. Two (2) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. **DPR will evaluate the one (1) well with a detection above the SL.**
Tulare	DACT (diaminochlorotriazine, degradate of atrazine and simazine)	40	40	0.007 - 3.5	35	0.014	Degradate of a registered 6800(a) list pesticide. Thirty-five (35) wells with detections exceeded the SL. Thirty-two (32) wells with detections above the SL are in GWPAs. **DPR will evaluate the three (3) wells with detections above the SL and not in GWPAs.**
Tulare	DBCP	22	22	0.012 - 0.32	-	-	No products registered for use in California since 1979.
Tulare	DEA (degradate of atrazine)	24	24	0.002 - 0.027	3	0.014	Degradate of a registered 6800(a) list pesticide. Three (3) wells with detections exceeded the SL. Three (3) wells with detections above the SL are in GWPAs.
Tulare	DSMN (degradate of norflurazon)	24	24	0.005 - 1.66	23	0.007	Degradate of a registered 6800(a) list pesticide. Twenty-three (23) wells with detections exceeded the SL. Twenty-two (22) wells with detections above the SL are in GWPAs. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Tulare	Diuron	27	27	0.002 - 0.05	16	0.014	Registered 6800(a) list pesticide. Sixteen (16) wells with detections exceeded the SL. Fourteen (14) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
Tulare	Ethylene dibromide (Dibromoethane)	1	1	0.021	-	0.035	No detections exceeded the SL.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Tulare	Flupyradifurone	1	1	0.05 - 0.057	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Tulare	Imidacloprid	4	4	0.007 - 0.022	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. DPR evaluated one (1) well with a detection above the SL based on the findings of the PCPA Review Process. The detection has been determined not to pollute groundwater.
Tulare	Mefenoxam (metalaxyl-m; isomer of metalaxyl)	1	1	0.135 - 0.146	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Tulare	Methoxyfenozide	8	8	0.003 - 0.012	-	0.021	No detections exceeded the SL.
Tulare	Norflurazon	18	18	0.002 - 0.684	12	0.014	Registered 6800(a) list pesticide. Twelve (12) wells with detections exceeded the SL. Twelve (12) wells with detections above the SL are in GWPAs.
Tulare	Propiconazole	1	1	0.005	-	0.014	No detections exceeded the SL.
Tulare	Pyraclostrobin	1	1	0.091	1	0.014	Registered pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL.**
Tulare	Simazine	39	39	0.003 - 0.102	32	0.014	Registered 6800(a) list pesticide. Thirty-two (32) wells with detections exceeded the SL. One (1) well with a detection above the SL was sampled by DPR, and the resulting value was below the reporting limit - DPR will not evaluate this one (1) well further. Twenty-nine (29) wells with detections above the SL are in GWPAs. **DPR will evaluate the two (2) wells with detections above the SL and not in GWPAs.**
Tulare	Tebuthiuron	2	2	0.003 - 0.005	-	0.014	No detections exceeded the SL.
Tulare	Thiamethoxam	1	1	0.013	-	0.014	No detections exceeded the SL.
Tulare	Xylene	1	1	0.7	-	-	There have been no products registered for use in California since 1994.

County	Pesticide or Degradate Detected	Wells Tested	Wells With Detections	Concentration Range (ppb)	Wells With Detections Above the SL[#]	SL	DPR Response to Detections
Tulare	Xylene, m- and p- (isomers of o-xylene)	1	1	0.7	-	-	There have been no products registered for use in California since 1994.
Tuolumne	Ethylene dichloride (1,2-Dichloroethane)	5	5	0.61 - 4.3	-	-	There have been no products registered for use in California since 1990.
Tuolumne	Propiconazole	1	1	0.004	-	0.014	No detections exceeded the SL.
Yolo	Bentazon	1	1	0.002	-	0.014	No detections exceeded the SL.
Yolo	Carbon tetrachloride	1	1	0.5	-	-	There have been no products registered for use in California since 1987.
Yolo	Dalapon	1	1	0.39	-	-	There have been no products registered for use in California since 1990.
Yolo	Hexazinone	1	1	0.001	-	0.007	No detections exceeded the SL.
Yolo	Hydroxysimazine (degradate of simazine)	3	3	0.009 - 0.036	1	0.035	Degradate of a registered 6800(a) list pesticide. One (1) well with a detection exceeded the SL. **DPR will evaluate the one (1) well with a detection above the SL and not in a GWPA.**
Yolo	Metolachlor	1	1	0.001	-	0.014	No detections exceeded the SL.
Yolo	Metolachlor ESA (degradate of metolachlor)	1	1	0.023	-	0.035	No detections exceeded the SL.
Yolo	OIET (2-Hydroxyatrazine; degradate of atrazine)	1	1	0.01	-	0.035	No detections exceeded the SL.
Yolo	Prometon	1	1	0.001	-	0.014	No detections exceeded the SL.

[#] The Screening Level (SL) is set at 70 percent of the current reporting limit established by DPR's contract laboratory.

GLOSSARY OF TERMS

TERM	DEFINITION
Assembly Bill (AB) 2021	See "Pesticide Contamination Prevention Act."
AB 2701	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 groundwater to its website. This law replaced the previous requirement that DPR submit the sampling information in a written report to the Legislature.
Active ingredient	The chemical or chemicals in a pesticide formulation that are biologically active and are capable, in themselves, of preventing, destroying, repelling, or mitigating insects, fungi, rodents, weeds, or other pests. The remainder of the product consists of one or more *inert ingredients* (such as water, solvents, emulsifiers, surfactants, clay, and propellants), for reasons other than pesticidal activity.
Agricultural Commissioner	Local officials whose duties include pesticide use enforcement in their counties.
Agricultural use	The use of any pesticide, method, or device for the control of plant or animal pests, or any other pests, or the use of any pesticide to regulate 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 pesticides intended for: a) Home use b) Structural pest control c) Industrial or institutional use d) The control of an animal pest under the written prescription of a veterinarian 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. See also "legal agricultural use."

TERM	DEFINITION
Analysis	For well water sampling data in the Well Inventory Database, it is the act of determining whether a substance is present in a water sample using laboratory methodology.
CalEPA	California Environmental Protection Agency. Comprised of the Department of Pesticide Regulation, the Department of Toxic Substances Control, the State Water Resources Control Board, the California Air Resources Board, the Department of Resources Recycling and Recovery (CalRecycle), and the Office of Environmental Health Hazard Assessment.
California Code of Regulations (CCR)	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.
Chemigation	Applying pesticide through an irrigation system or mixing with irrigation water before the water is applied to the soil or crop.
Degradation	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. With respect to groundwater quality, degradation refers to a reduction of water quality.
Detection	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. A detection may be designated as confirmed or unconfirmed.
Director	In the context of this report, “Director” means Director of the Department of Pesticide Regulation.
Environmental fate	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.
Food and Agricultural Code (FAC)	Food and Agricultural Code. Divisions 6 and 7 of the FAC pertain to the registration, sale, and use of pesticides.
Formulation	Pesticide product as sold, usually a mixture of active and inert ingredients.

TERM	DEFINITION
Groundwater	Water found below the surface of the land, usually in porous rock formations.
Groundwater Protection Area (GWPA)	A geographic area defined in state regulations as vulnerable to pesticide contamination though the mechanism of either leaching or runoff.
Groundwater Protection List (GWPL)	A list of pesticides having the potential to pollute groundwater included in 3CCR section 6800.
Inert ingredient	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.
Leaching	A pathway by which agricultural pesticides may reach groundwater; the process by which residues are dissolved in soil water and follow the movement of water through the soil matrix as it recharges a groundwater aquifer.
Legal agricultural use	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.”
Maximum contaminant level (MCL)	MCLs are health protective drinking water standards to be met by public water systems. MCLs consider not only a chemical’s health risks but also factors such as its detectability, treatability, and the cost of treatment.
Maximum contaminant level goal (MCLG)	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.
Mitigation measure	A use practice designed to reduce the risk of harm to people or the environment.
Model	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.

TERM	DEFINITION
Monitoring well	A well principally used for any of the follow purposes: (1) observing groundwater levels and flow conditions, (2) obtaining samples for determining groundwater quality, or (3) evaluating hydraulic properties of water-bearing strata.
Non-agricultural use	*See "agricultural use."*
Nonpoint source	Pollution sources that are diffuse and do not have a distinct discharge point (compare with *point source*), for example, applications of agricultural pesticides to crops.
Permit	Time- and site-specific permits are issued by County Agricultural Commissioners to use pesticides designated as restricted materials.
Pest	Any undesired insect, rodent, nematode, fungus, bird, vertebrate, invertebrate, weed, virus, bacteria, or other microorganisms (except microorganisms on or in humans or animals) declared to be injurious to human health or the environment.
Pest control	The use or application of any pesticide. It also means using 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.
Pesticide	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.
Pesticide Contamination Prevention Act (PCPA, AB 2021)	A law, effective January 1, 1986, 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 groundwater (GWPL); 3) the Director to monitor groundwater for these pesticides; 4) all local, county, and state agencies to report to DPR the results of pesticides sampled in groundwater; 5) the Director to maintain a specified well sampling database and to post certain information annually on DPR's website about pesticides in groundwater; 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 groundwater due to legal agricultural use.

TERM	DEFINITION
Pesticide Management Zone (PMZ)	A geographic surveying unit of approximately one-square-mile, considered vulnerable to groundwater contamination based on detections of pesticides or pesticide degradates in groundwater due to agricultural use. PMZs were formally listed in 3CCR section 6802 and were pesticide specific. The use of a pesticide inside its PMZs was subject to certain groundwater protection restrictions and requirements. All PMZs were reclassified as GWPAs in May 2004.
Point source	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.
Pollution	FAC section 13142 defines "*pollution" as "*the consequence of polluting," and "*pollute*" as "…to introduce a product into the groundwaters of the state resulting in an active ingredient, other specified ingredient, or a degradation product of a pesticide above a level that does not cause adverse health effects, accounting for an adequate margin of safety."
Public health goal (PHG)	OEHHA establishes PHGs. Based on current risk assessment principles, practices, and methods, PHGs are concentrations of drinking water contaminants that pose no significant health risk if consumed for a lifetime. OEHHA establishes PHGs pursuant to Health and Safety Code section 116365(c) for contaminants with MCLs.
Range	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.
Registered pesticide	A pesticide product approved by the USEPA and DPR for use in California.
Regulations	State agencies adopt regulations 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.

TERM	DEFINITION
Reporting limit	The minimum value for an analysis method and chemical that a reporting laboratory/agency lists they will accept as a valid detection of that chemical. Values below that level may not be reported or may be reported as a trace. The Reporting Limit value should be greater than zero. In this document, a "Reporting Limit" of zero (0) indicates an agency did not specify a Reporting Limit in their data. DPR defines the reporting limit as the lowest amount detected following the analytical method set at a level high enough to account for matrix effects (1 to 5 times the method detection limit). In contrast, trace concentrations are the concentrations between the method detection limit and the reporting limit and may not be as reliably quantified. Other agencies use different terminology and standards for their limits.
Restricted material	Restricted materials are pesticides deemed to have a higher potential to cause harm to public health, farm workers, domestic animals, honeybees, the environment, wildlife, or other crops compared to other pesticides. With certain exceptions, restricted materials may be purchased and used only by or under the supervision of a **certified** commercial or private applicator under a **permit** issued by the County Agricultural Commissioner (CAC).
Screening level (SL)	DPR's GWPP sets the screening level at 70 percent of the current reporting limit established by DPR's contract laboratory and conducts additional evaluation of detections that are at or above this concentration.
Senate Bill (SB) 1117	SB 1117 of 2014 amended the Pesticide Contamination Prevention Act (PCPA) to require DPR to regulate each active ingredient, other specified ingredient, or degradation product of a pesticide on the GWPL that is detected as a result of legal agricultural use. It also revises the information that DPR is required to post on its website to include pesticide degradation products and other specified ingredients. SB 1117 also revises the information included in the GWPL to include not only each active ingredient, but other specified ingredients or degradation product(s) of a pesticide that, when applied, have the potential to pollute groundwater. It also requires DPR's Director—in consultation with a specified subcommittee of the Director's Pesticide Registration and Evaluation Committee (PREC)—to develop a peer-reviewed method to determine pollution potential using specific numerical values.
Section	Section/Township/Range: Public Land Survey System units. A section is a one-square-mile block of land containing 640 acres. A township typically has 36 sections. A range is a vertical column of townships.

TERM	DEFINITION
Specific numerical values (SNV)	The PCPA requires certain numeric threshold values 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 groundwater.
Township	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 x number of six-mile units east or west of a north-south line running through an initial point (called the "principal meridian") and x number of six-mile units north or south of an east-west line running through another point (called the "baseline"). A township typically has 36 sections.
Well Inventory Database (WIDB)	A statewide database, required by the PCPA and maintained by DPR, of wells sampled for pesticides and pesticide degradates.
Well Inventory Report (WIR)	The annual sampling report for pesticide residues in California well water (this report) is sometimes referred to as the Well Inventory Report because it describes the data entered into the Well Inventory Database.