

STATE OF CALIFORNIA

DRINKING WATER PROGRAM ANNUAL COMPLIANCE REPORT

CALENDAR YEAR 2022



NOVEMBER 2023

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Executive Summary

The State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) is the primacy agency responsible for the administration and enforcement of the federal Safe Drinking Water Act (SDWA) requirements in California. The State Water Board has adopted statutes and regulations to implement the requirements of the SDWA. The State Water Boards' regulatory responsibility over public water systems includes (1) issuance of operating permits, (2) conducting inspections and sanitary surveys, (3) monitoring for compliance with regulations, and (4) taking enforcement action to compel compliance when violations are identified.

Throughout the year and as part of DDW's regulatory oversight responsibilities, Drinking Water Program staff from DDW's 26 Districts and 27 Local Primacy Agencies (local county programs delegated by the State Water Board to undertake regulatory oversight on behalf of DDW) document and record violations incurred by public water systems. Enforcement actions are issued by the Drinking Water Program to address these violations. The data is compiled and submitted to the United States Environmental Protection Agency (USEPA) on a quarterly basis.

This report presents an accounting of the violations record for the calendar year 2022. USEPA requires states to issue this Annual Compliance Report by July 1st of each year and make the report available to the public. USEPA requires the Annual Compliance Report summarize the compliance status for the following rules from the National Primary Drinking Water Regulations:

- Chemical (Phase II/IV) Rule
 - Inorganic contaminants (IOC)
 - Synthetic organics (SOC)
 - Volatile organics (VOC)
- Radionuclide Rule (RAD)
- Total Coliform Rule
 - Revised Total Coliform Rule (rTCR)
- Disinfectants and Disinfection By-Products Rule (DBPR)
 - Stage 1 DBPR
 - Stage 2 DBPR
- Surface Water Treatment Rules (SWTR)
 - Surface Water Treatment Rule
 - Filter Backwash Rule (FBR)
 - Interim Enhanced SWTR (IESWTR)
 - Long Term 1 Enhanced SWTR (LT1)
 - Long Term 2 Enhanced SWTR (LT2)
- Groundwater Rule (GWR)
- Lead and Copper Rule (LCR)
- Public Notification Rule (PN)

- Consumer Confidence Report Rule (CCR)
- Variances and Exemptions (V/E)

The following types of violations are included in this report:

- Maximum contaminant level (MCL) violations
- Maximum residual disinfectant level (MRDL) violations
- Treatment technique requirement (TT) violations
- Significant monitoring and/or reporting requirements (M/R) violations
- Variances and exemption violations
- Recordkeeping violations
- Significant public notification requirement violations
- Significant consumer confidence report (CCR) notification violations

This report also presents an account of violations of state-regulated chemicals and other state SDWA requirements that are recorded by DDW; these are summarized separately in the report as required by USEPA guidelines. The discussion, figures, and summaries provided in this report refer to the National Primary Drinking Water Regulations unless stated otherwise. Where California has more stringent standards, violations of the more stringent standards are reported.

In 2022, a total of 2,667 violations of the National Primary Drinking Water Regulations were incurred by public water systems. Violations are recorded carefully by the Districts and LPAs providing oversight of public water systems; however, DDW has identified there are unresolved violations incurred prior to 2022 that were not identified in this report due to data entry issues. DDW is working to improve violation reporting and advance data extraction methods to eliminate potential errors for subsequent reports. Of the 2,667 violations recorded, 764 were MCL/TT violations and 1,903 were M/R violations. Figure ES-1 summarizes the number of violations recorded in 2022 per rule.

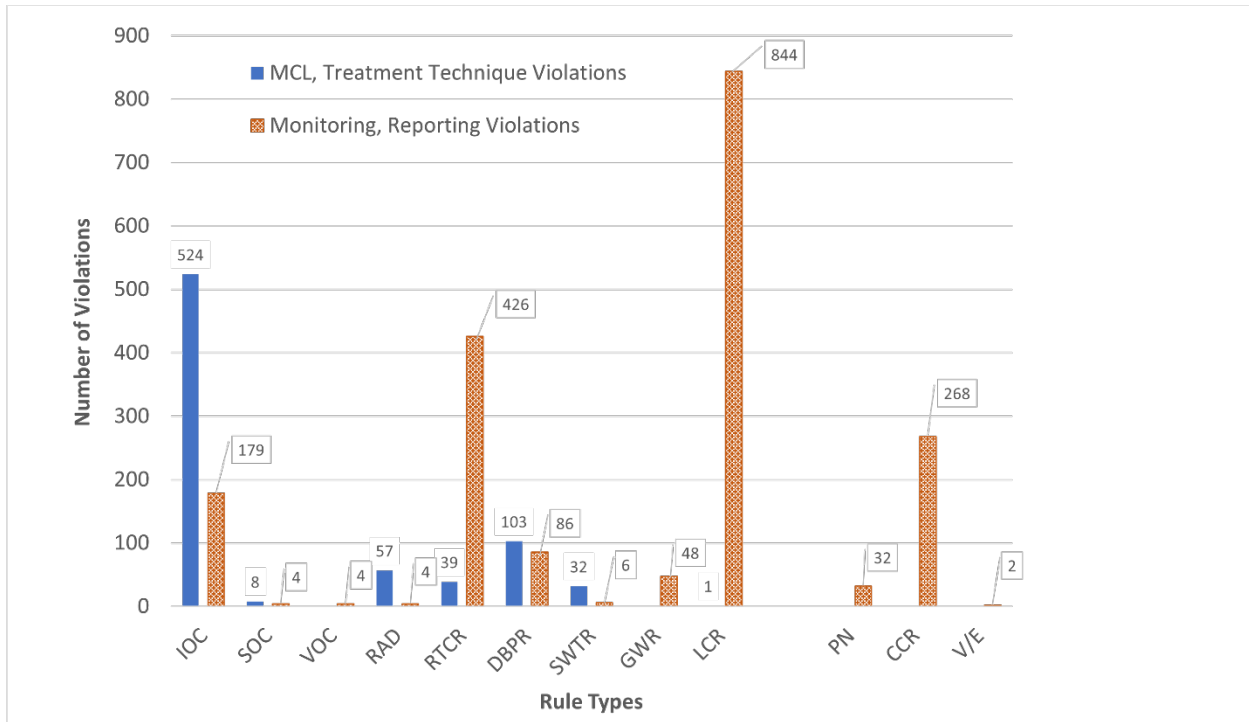


Figure ES-1: Federal violations incurred by public water systems in 2022.

Public Water Systems (PWSs) incurred the largest number of MCL/TT violations for inorganic contaminants (nitrate and arsenic were the major ones), followed by violations of standards for Disinfection Byproduct Rules, Radionuclides, and the Revised Total Coliform Rule. PWSs incurred the largest number of monitoring/reporting (M/R) violations for the Lead and Copper Rule and the Revised Total Coliform Rule.

Figure ES-2 and Figure ES-3 below summarize the number of PWSs that incurred violations of each rule for federal drinking water standards in 2022. Please note that PWSs may have incurred violations of more than one rule. Therefore, the total number of PWSs with federal MCL/TT or M/R violations is smaller than the sum of PWSs with violations of individual rule types.

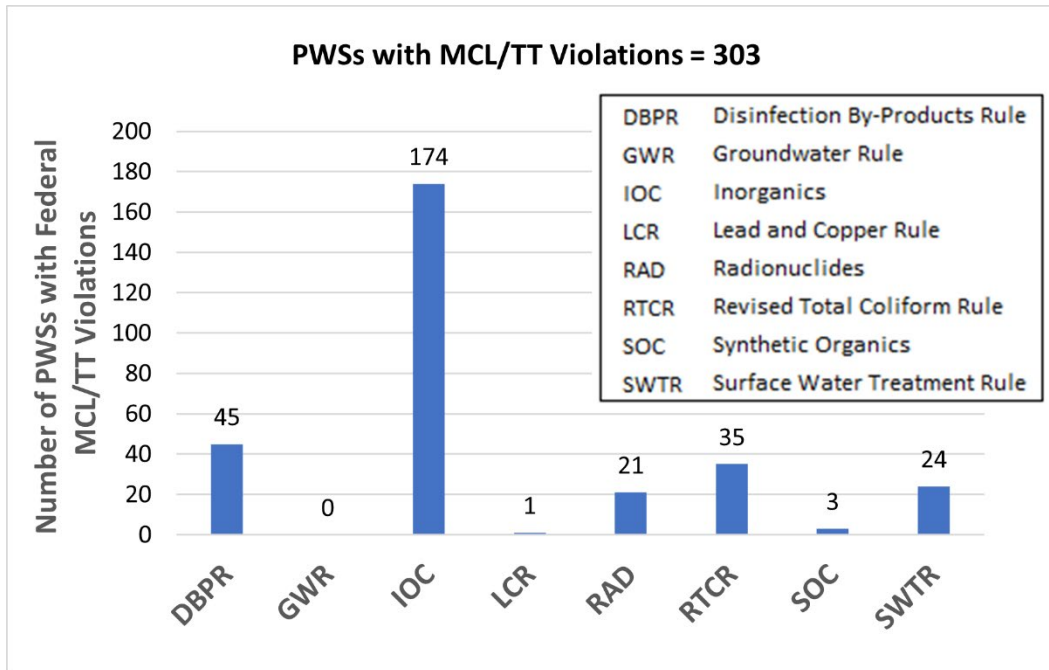


Figure ES-2: Number of public water systems with federal violations in 2022 of the maximum contaminant level (MCL) or treatment technique (TT) requirement.

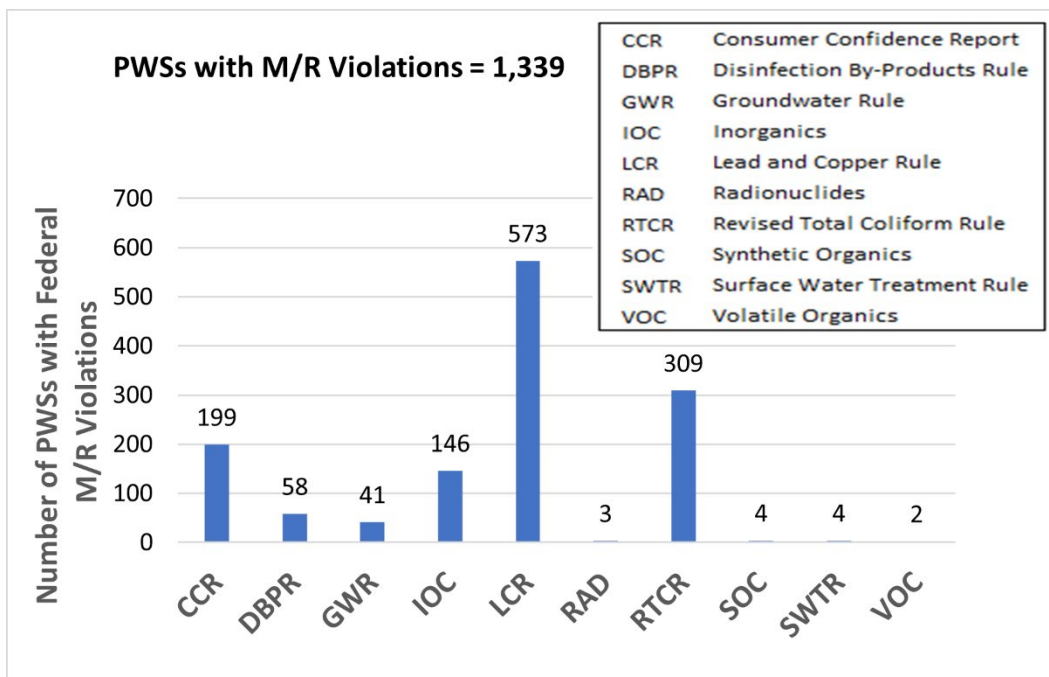


Figure ES-3: Number of public water systems with federal violations in 2022 of the monitoring or reporting requirements.

Figure ES-4 shows the classification and sizes of PWSs (as represented by the number of service connections) that incurred one or more MCL/TT violations in 2022. Community water systems (CWSs) that incurred at least one MCL/TT violation in 2022 represented 6% of the total number of active CWSs in the state. About 93% of the MCL/TT violations were incurred by CWSs that serve fewer than 500 service connections, nontransient noncommunity water systems (NTNCs) such as schools, or transient noncommunity water systems (TNCs) such as campgrounds.

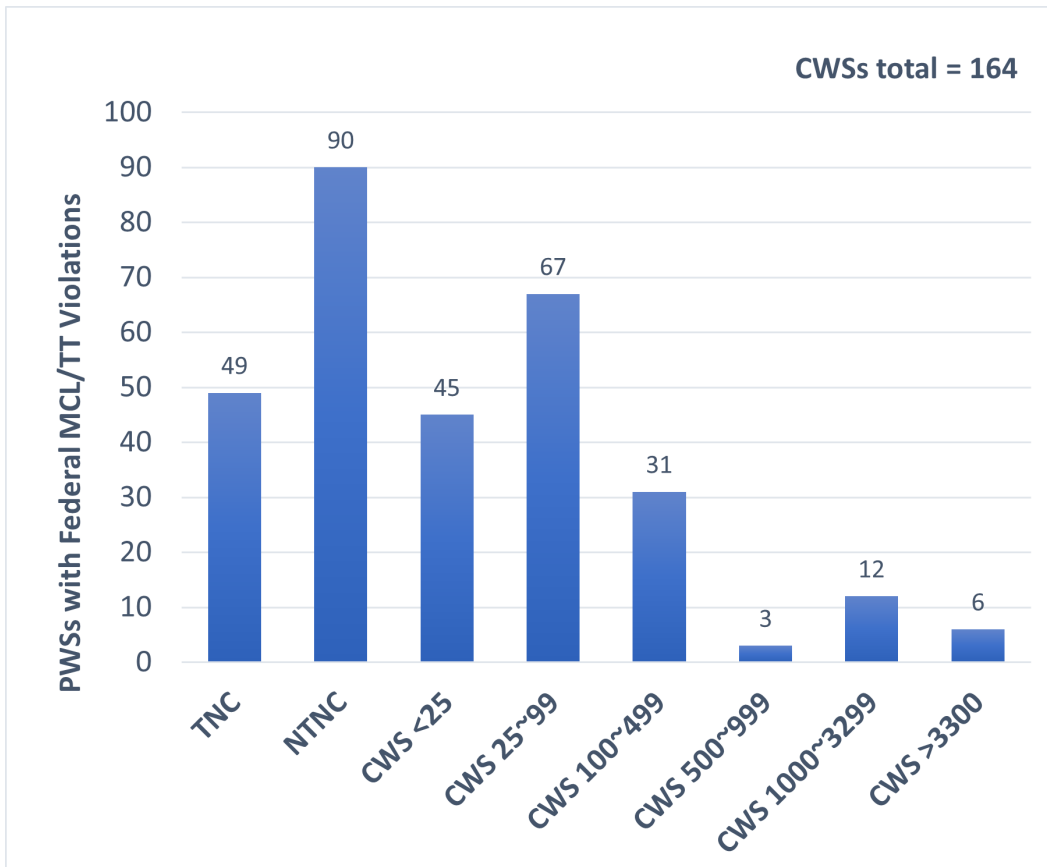


Figure ES-4: Number of PWSs by classification and size (as service connections) with MCL or TT violations in 2022. CWS = Community Water System; TNC = Transient Noncommunity Water System; NTNC = Nontransient Noncommunity Water System. See Section 1.3 for definitions of these different types of public water systems.

Table ES-1 summarizes the number of MCL and TT violations of the federal SDWA that have been documented and reported for calendar year 2022 and compares the 2022 numbers with the previous year’s numbers. An estimate of the population served by PWSs that failed an MCL or TT standard in 2022 is provided, based on the total estimated population-served reported by PWSs. Please note that the population estimates of water systems is not intended to represent the number of people impacted by the violation since some violations may impact only a portion of a very large system.

Table ES-1: Violations of Maximum Contaminant Levels (MCLs) or Treatment Techniques (TT), Comparison between 2021 and 2022

Category	2021 MCL/TT Violations	2021 Estimated Population	2022 MCL/TT Violations	2022 Estimated Population	Change in Number of Violations
Inorganic Contaminants	524	78,128	524	121,500	0
Synthetic Organic Contaminants	5	550	8	215	3
Volatile Organic Contaminants	0	0	0	0	0
Radionuclide Contaminants	66	7,486	57	9,056	-9
Revised Total Coliform Rule	26	10,173	39	61,666	13
Disinfection By-Products Rule	97	121,851	103	111,145	6
Surface Water Treatment Rules	29	1,450	32	20,572	3
Groundwater Rule	3	3,066	0	0	-3
Lead and Copper Rule	3	4,876	1	250	-2
Totals	753	223,730 (a)	764	322,219 (a)	11

(a) The total estimated population is less than the sum of the populations for each violation category, since a PWS may have one or more violations in one or more violation category.

Table ES-2 below summarizes the number of violations of the federal SDWA rules for other violation reporting categories for calendar year 2022, including violations of public notification and Consumer Confidence Report (CCR) requirements, the number of public water systems that incurred the violation, as well as a comparison to the previous year's numbers.

Table ES-2: Other Violation Reporting Categories

Violation Category	2021 Number of Violations	2021 Number of PWSs	2022 Number of Violations	2022 Number of PWSs	Change in Number of Violations
Public Notification Rule	30	16	32	17	2
Consumer Confidence Report Notification	216	158	268	199	52
Variances and Exemptions	2	2	2	2	0

Table ES-3 below summarizes the number of MCL violations of California-specific regulated chemicals, and the estimated population served by the PWS incurring the violations. California initiated implementation of the MCL for 1,2,3-trichloropropane (123TCP) in 2018, and PWSs began to conduct initial quarterly monitoring. The large number of SOC MCL violations shown in Table ES-3 was due to implementation of the 123TCP state drinking water standard in 2018, with a notable decrease in 123TCP violations from 2021 to 2022.

Since California revised the state’s Total Coliform Rule (TCR) regulations to incorporate the federal Revised Total Coliform Rule (rTCR) in July 2021, DDW regulated both the rTCR and the state TCR concurrently for the first half of 2021. The rTCR amends and expands the TCR’s sampling requirements. The summary of violations of the rTCR is presented in Table ES-1, and the pre-2022 violations of California’s TCR Total Coliform MCL (non-acute) are presented in Table ES-3 below. The number of TCR Total Coliform MCL violations reported here is fewer than those incurred by PWSs in previous years due to the regulatory change.

Table ES-3: Violations of California-specific Maximum Contaminant Levels (MCL) and Treatment Techniques (TT)

MCL Violation Category	2021 MCL/TT Violations	2021 Estimated Population	2022 MCL/TT Violations	2022 Estimated Population	Change in Number of Violations
Primary Inorganic Contaminants	10	64,795	80	5,340	70
Synthetic Organic Contaminants (SOCs)	321 (b)	378,598	219	327,334	-98
Volatile Organic Contaminants (VOCs)	0	0	0	0	0
Secondary Standards	60	19,587	66	146,093	6
Total Coliform Rule (TCR)	21	62,132	14	4,682	-7
Treatment Technique (TT)	17	53,012	19	1,374	2
Totals	429	570,375 (a)	407	511,130 (a)	-22

(a) The total estimated population is less than the sum of the populations of each violation category, since a PWS may have violations in more than one category.

(b) All 321 SOCs violations are violations of the 1,2,3-trichloropropane (123TCP) MCL requirement.

In 2022, the Drinking Water Program issued approximately 2,940 enforcement actions to public water systems for failing to comply with either federal or state drinking water regulations. An enforcement action addresses one or more violations, and prescribes public notification requirements as necessary, corrective actions, and deadlines that the public water system must meet in order to be considered “returned to compliance” (RTC).

Figure ES-5 shows the number of public water systems that have returned to compliance in 2022 for a federal rule for each water system category/size, compared with the number of public water systems that had incurred one or more MCL/TT violations in 2022 or in prior years. The water systems that had an RTC during 2022 may have had the initial violation in 2022 or in prior years. Public water systems are required to provide routine (typically quarterly) public notification of MCL/TT violations that are on-going and are not resolved.

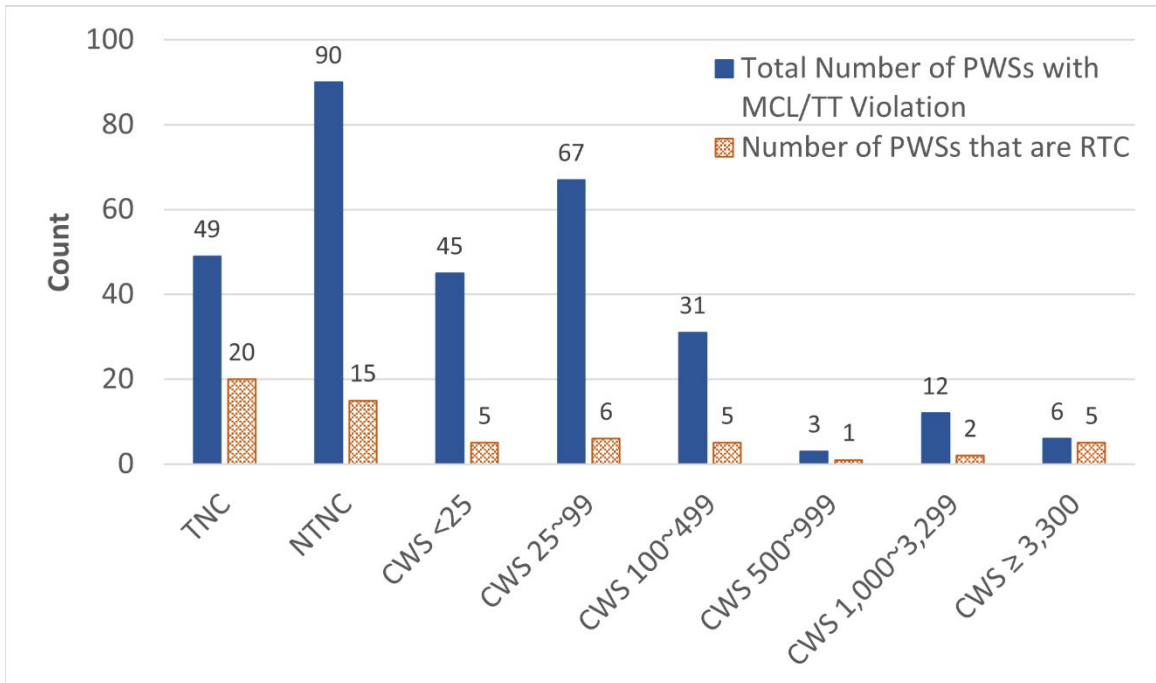


Figure ES-5: Number of public water systems that have returned to compliance in 2022 for a federal MCL/TT violation incurred in 2022 or prior. PWSs are categorized by type/CWS size (number of service connections).

Of all the public water systems that had federal MCL or TT violations incurred in 2022 or prior, 19% of them have returned to compliance in 2022. DDW continues to monitor the compliance status of public water systems, working to identify and track public water systems that do not meet drinking water standards and provide technical assistance as well as take appropriate and effective enforcement measures and other addressing actions, to ensure that these public water systems are working towards a path of compliance with the SDWA.

This report also includes data on violations of the California SDWA for calendar year 2022, which includes the regulation of several chemicals such as perchlorate and 123TCP, as well as other state requirements such as certification of distribution system and treatment operators, which are not included in federal regulations. Violations of state drinking water standards are discussed and accounted for separately in Sections 3.4 and 3.5.

Message from the Drinking Water Program Manager

The Division of Drinking Water (DDW) is pleased to present the 2022 Annual Compliance Report, which summarizes the state of compliance of California’s public water systems with the federal Safe Drinking Water Act (SDWA) as well as California’s SDWA, for calendar year 2022.



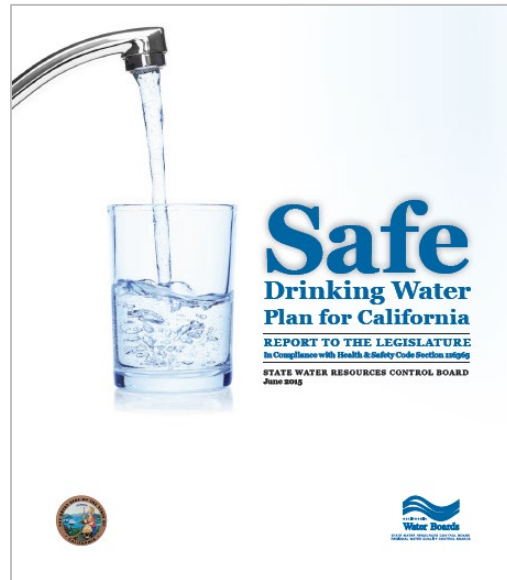
DARRIN POLHEMUS

DEPUTY DIRECTOR,
DIVISION OF DRINKING WATER
STATE WATER RESOURCES CONTROL BOARD

The violations data for 2022 shows that 96% of public water systems, serving more than 99% of Californians, complied with maximum contaminant levels (MCLs) and treatment techniques (TT) contained in federal rules established under the SDWA.

Our records show that 303 public water systems (PWSs), out of a total of 7,295 active public water systems, had one or more violations of an MCL or TT in 2022. Of these, about 93% are the smaller public water systems - including

noncommunity water systems and community water systems having fewer than 500 service connections. DDW takes appropriate progressive enforcement to ensure that these public water systems are on a path to compliance with the SDWA.



The State Water Board, through programs such as the Drinking Water State Revolving Fund, the Safe and Affordable Drinking Water Fund, and funding from state bonds, helps to provide financing through loans or grants for planning or construction projects to address water quality problems to provide an adequate and affordable supply of safe drinking water.

In 2015, the DDW gained authority to mandate consolidation of failing water systems as a strategy to reduce the number of PWSs that are consistently unable to provide safe drinking water. In September of 2021, Senate Bill 403 expanded this authority to allow consolidation of at-risk water systems

serving disadvantaged communities. Nine failing or at-risk water systems began mandatory consolidation during 2022 to better serve their communities. For more information about the status of consolidation projects, please visit our website:

https://www.waterboards.ca.gov/drinking_water/programs/compliance/index.html.

DDW provides assistance and resources to PWSs to help ensure that they maintain long-term sustainability and capacity to maintain compliance with drinking water laws and regulations. Information about DDW's technical, managerial, and financial capacity development program, is available at our website:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html.

The Safe Drinking Water Plan for California was updated in September 2021 and provides the State Water Board's strategy for ensuring that all Californians have access to safe affordable drinking water. For more information about the Safe Drinking Water Plan, please visit our website:

https://www.waterboards.ca.gov/drinking_water/safedrinkingwaterplan/.

DDW continues to work with all public water systems to ensure that they achieve compliance with the SDWA and provide water that is pure, wholesome, and potable to their customers.

How to get information on the compliance status of California public water systems:

2022 ANNUAL COMPLIANCE REPORT:

A copy of this report and the associated data tables will be available to the public by contacting DDW at (916) 449-5577, or through the State Water Board website at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Publications.html

SAFER DASHBOARD:

DDW maintains a dashboard for the Safe and Affordable Funding for Equity and Resilience Program (SAFER Program): https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/saferdashboard.html

DRINKING WATER WATCH:

DDW maintains a public webpage on the inventory of public water systems, including violations and enforcement actions: <https://sdwis.waterboards.ca.gov/PDWW/>

Annual Compliance Report

Chapter 1. Overview of the Drinking Water Program

1.1. Federal Program

The USEPA established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 Amendments, USEPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs). For some regulations, USEPA establishes Treatment Techniques (TT) in lieu of an MCL to control unacceptable levels of contaminants in water. The USEPA also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the states or USEPA. Generally, the larger the population served by a water system, the more extensive and frequent are the monitoring and reporting (M/R) requirements. In addition, USEPA requires selected community and nontransient noncommunity water systems (see page 4 for water system type explanations) to monitor for unregulated contaminants to provide data for future regulatory development. Finally, USEPA requires PWSs to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA among other things require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation, and the possibility of alternative water supplies during the violation.



The SDWA allows states, tribes, and territories to seek USEPA approval to administer their own PWS Supervision Programs. The authority to run a PWS Supervision Program is called primacy. For a state to receive primacy, USEPA must determine that the state meets certain requirements laid out in the SDWA and the federal regulations, including the adoption of drinking water regulations that are at least as stringent as the federal regulations and a demonstration that they can enforce the program requirements.

1.2. California Program

California's Drinking Water Program was created in 1915, when the California Bureau of Sanitary Engineering was established by the California State Board of Health. The bureau's primary duty at that time was to prevent and eliminate water-borne diseases.

Two years after the 1974 federal SDWA was passed, the state adopted the California Safe Drinking Water Act. The state's SDWA has two main goals: to continue the state's Drinking Water Program, and to be delegated primacy by USEPA with authority for enforcement of the federal SDWA. California was first granted primacy for implementation of the federal SDWA on June 2, 1978.

The Drinking Water Program was transferred in its entirety from the California Department of Public Health to the State Water Resources Control Board (State Water Board) on July 1, 2014. The State Water Board Division of Drinking Water (DDW) oversees implementation of the SDWA over public water systems within California. The State Water Board has further delegated regulatory authority through a delegation agreement with County Environmental Health Departments. Currently, 27 counties in California have retained primacy as a Local Primacy Agency (LPA) under delegation agreements issued and signed in 2014 and amended in 2017. These LPAs oversee SDWA compliance of small PWSs that serve fewer than 200 service connections within their county jurisdictions.

Figure 1 shows the geographic distribution of DDW's 26 District Offices, under the Field Operations Branch, located throughout the state that oversee SDWA compliance of PWSs as well as the 27 LPAs (with asterisks*).

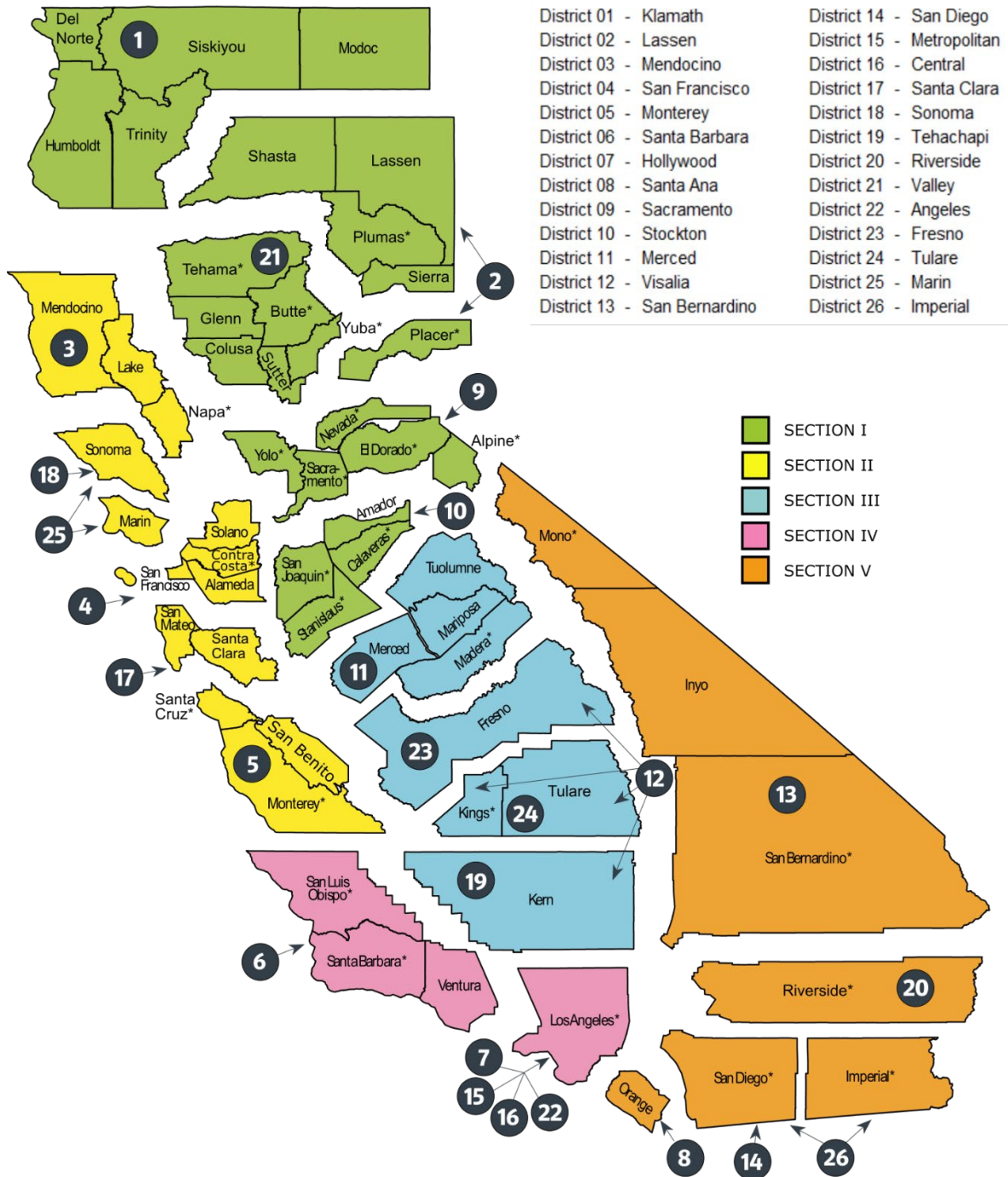


Figure 1: Division of Drinking Water (DDW) Sections and District Offices.
Counties that are Local Primacy Agencies have asterisks (*).

1.3. Public Water Systems

A public water system (PWS) is defined as a system for the provision of water for human consumption, through pipes or other constructed conveyances, that has 15 or more service connections or regularly serves at least 25 individuals daily for at least 60 days out of the year.

PWSs are divided into three principal classifications: community water systems (CWSs), nontransient noncommunity water systems (NTNCs), and transient noncommunity water systems (TNCs).

Community water systems serve cities, towns, and other areas with at least 15 service connections or 25 year-long residents. Examples include water districts, cities, mutual water companies, mobile home parks, and farm labor housing.

Nontransient noncommunity water systems are systems that provide water to the same non-residential users daily for at least 180 days out of the year but not to at least 25 year-long residents. Examples include day cares, schools, and places of employment.

Transient noncommunity water systems are systems that provide water for a population that is transient in nature, serving 25 or more people per day for at least 60 days per year. Examples include campgrounds, parks, ski resorts, roadside rest areas, or gas stations and motels.

A **wholesale water system** means a public water system that supplies water to other public water systems for resale. These wholesale water systems are regulated as community water systems.

DDW and LPAs together regulate a total of 7,295 PWSs in California (as of April 2023). LPAs are responsible for regulatory oversight of approximately 3,118 small PWSs in 27 counties. This regulatory responsibility includes tasks such as issuance of operating permits, conducting sanitary surveys, monitoring for compliance with regulations, and taking enforcement actions to compel compliance when violations are identified, and reporting on those actions taken.

Figure 2 shows the number of public water systems in each of the classifications described above. Community water systems are further classified by size, as shown in Figure 3. Regulations sometimes specify different requirements, such as monitoring requirements, for different sizes and types of water systems.

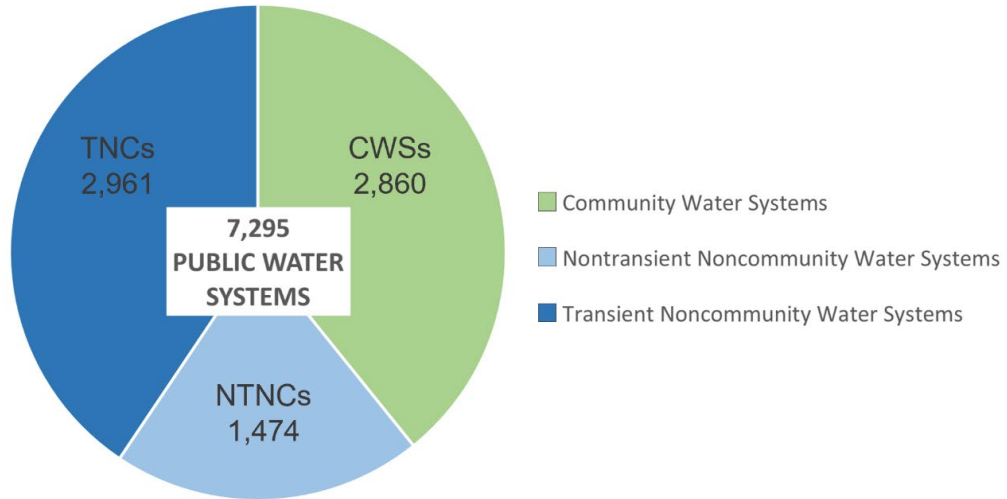


Figure 2: Number of public water systems by system classification (as of April 2023).

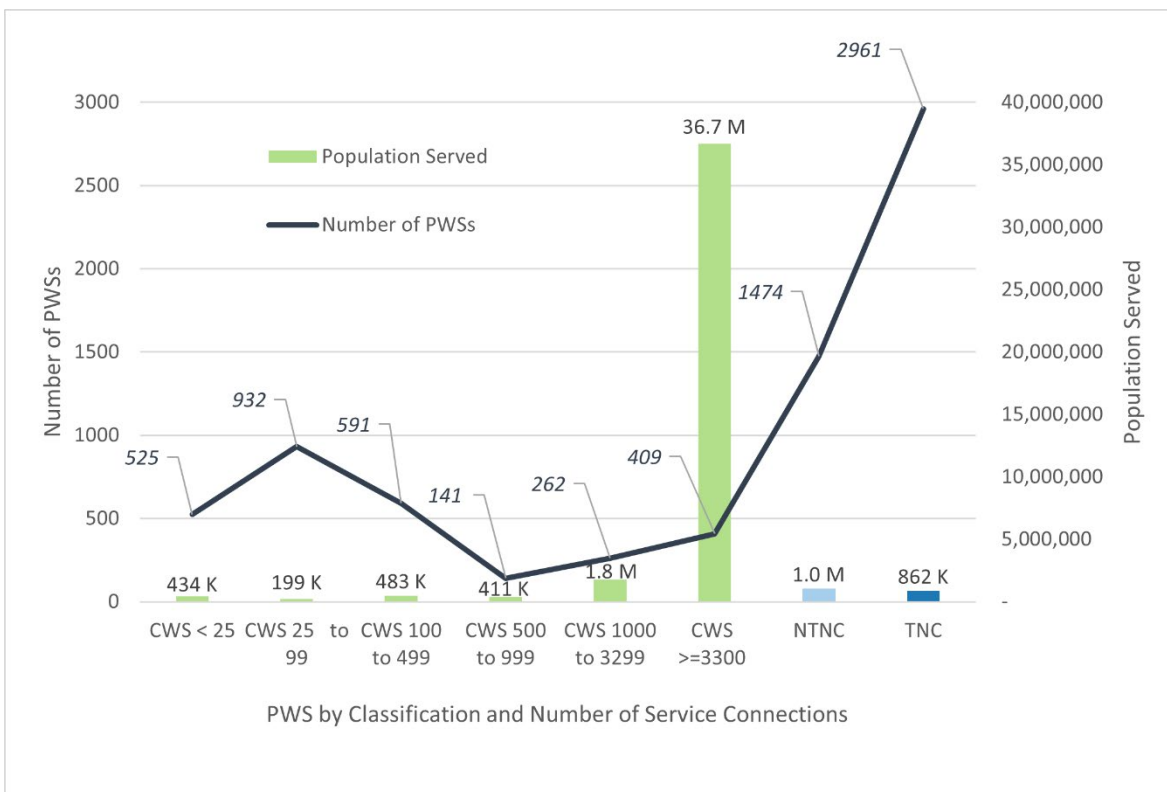


Figure 3: Categories of public water systems by size (number of service connections) and population served (as of April 2023). These numbers may not match the overall state population due to potential double counting based on water system classification.

While community water systems serving 3,300 or more service connections make up about 14% of the total number of CWSs, they provide water to 92% of the population served by CWSs.

Table 1 shows how many water systems are in each size range, categorized by the number of connections served by the water system, and the total population that is served by water systems of that size range. Population figures are based on information submitted by public water systems. Public water systems use a variety of methods to estimate the population served that are not always derived from census counts (especially for the smaller water systems). A wholesale water system is a public water system that delivers some or all of its finished drinking water to another public water system. Some wholesale water systems also directly serve finished drinking water to customers through a small number of service connections. The population directly served by these wholesale water systems is reflected in Table 1 under each service connection category. The total population listed here is the number served by public water systems statewide. There may be incidents where population is counted twice depending on the type of public water system (e.g., populations that attend or work at a school may also be counted in a nearby community public water system).

Table 1: Number of Community Water Systems Statewide (as of April 2023)

Number of Service Connections	Number of Water Systems	Total of Population Served
3,300 or more	409	36,697,713
1,000 to 3,299	262	1,790,883
500 to 999	141	410,669
100 to 499	587	481,373
25 to 99	925	198,630
Fewer than 25	485	242,110
Wholesale Water Systems	51	192,929
Total	2,860	40,014,307

1.4. Sources of Drinking Water

Figure 4 shows the primary types of water sources that public water systems use to supply drinking water to their customers. Some regulations are applied differently for surface water and groundwater sources, and there are specific regulations in place that pertain to the treatment of surface water.

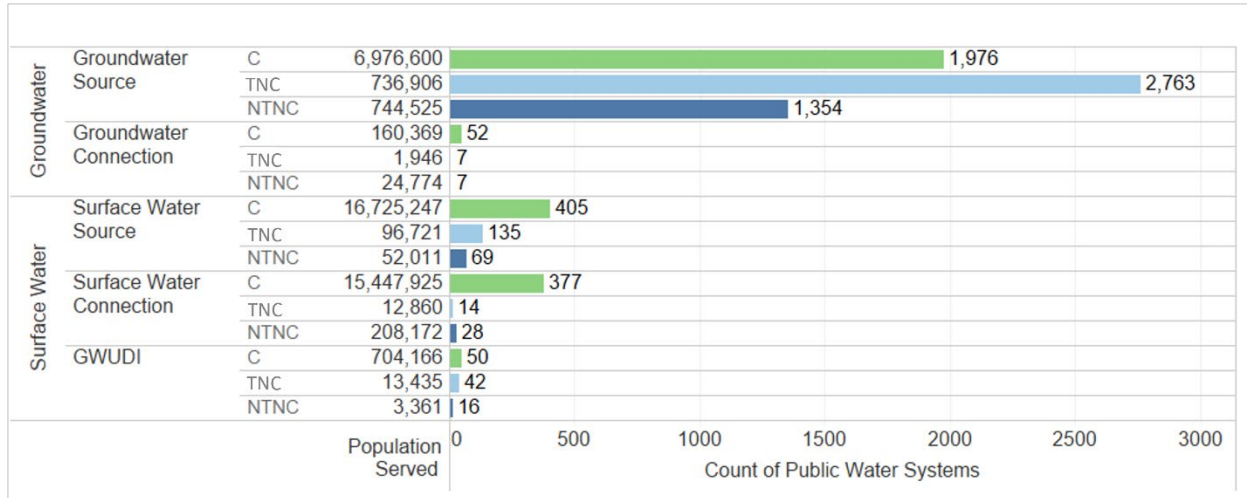


Figure 4: Primary sources of drinking water used by public water systems (as of April 2023), showing population served and corresponding count of water systems by type.

Most public water systems in California use groundwater as their primary source of supply, but those that use surface water serve most of the population. Public water systems that use both groundwater sources and surface water sources are categorized as surface water systems by convention. Groundwater under the direct influence of surface water (GWUDI) sources are categorized as surface water per regulations. Many public water systems do not operate their own sources and rely on interconnections with neighboring public water systems to supply potable drinking water to their customers and are classified as consecutive systems with a source type matching the wholesale provider.

Although about 84% of public water systems use only groundwater, these water systems serve less than 21% of the population. Sixteen percent (16%) of public water systems use surface water or a combination of surface water and groundwater, and these public water systems supply 79% of the population.

1.5. Safe Drinking Water Act

Under the 1974 federal SDWA and subsequent reauthorizations in 1986 and 1996, USEPA sets national limits on contaminant levels in drinking water for human consumption to protect the health of consumers. These limits are known as maximum contaminant levels (MCL) and maximum residual disinfectant levels (MRDL). For some regulations, treatment techniques (TT) or action levels (AL) have been established in lieu of an MCL as a means to control levels of specific contaminants in drinking water. Water systems are also regulated as to the frequency of monitoring and the reporting (M/R) of water quality or rule compliance. Systems can incur a violation for failure to collect required samples during a monitoring period (monitoring violations) or failure to report sample results or rule compliance in the required manner (reporting violations).

The SDWA requires PWSs to notify their consumers when a drinking water standard has been violated, including MCL, TT, AL, and M/R requirements. This notification is required to include:

- A clear and understandable explanation of the nature of the violation
- The potential adverse health effects from the violation
- The steps that the water system is undertaking to correct the violation
- The possible use of alternative water supplies available during the violation

There are three basic types of violations that a water system can incur:

- Violation of a Maximum Contaminant Level (MCL): Primary drinking water standards have been adopted by the State Water Board for contaminants that may be found in drinking water supplies in California. These limits are known as MCLs and are necessary to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.
- Violation of a Treatment Technique (TT): Treatment techniques and performance standards have been adopted as means to provide safe drinking water in instances where adoption of a specific MCL may be impractical or impossible. Treatment techniques are a proven means to reduce the risk from various contaminants by closely controlling the treatment processes.
- Violation of a Monitoring and/or Reporting Requirement (M/R): A water system is required to monitor and verify that the levels of contaminants present in the drinking water supplies do not exceed an MCL, MRDL or TT. A monitoring violation occurs when a water system fails to have its water tested as required within the required time frame. A reporting violation occurs when a water system fails to report test results in a timely manner to the regulatory agency or fails to provide certification that mandated information was provided to the public, such as through the issuance of a public notice or the annual Consumer Confidence Report. A water system that fails to perform required monitoring for a group of chemicals (such as synthetic organic chemicals or volatile organic chemicals) would incur one violation.

1.6. Annual Compliance Report

Section 1414(c)(3) of the federal Safe Drinking Water Act requires states to provide USEPA and the public with an annual report of violations of the federally adopted primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, treatment techniques, variances and exemptions, significant monitoring and/or reporting violations, and significant public or consumer notification violations. Significant monitoring and/or reporting violations occur when no samples are taken, or no results are reported during a compliance period. A significant public notification or CCR notification violation occurs when a public water system completely fails to provide the required notification to its customers or to the public.

California adopted more stringent MCLs than the federally adopted primary drinking water standards for several contaminants, summarized in Table 2. Reported MCL violations for contaminants listed in this table are violations of the more stringent California standards.

Table 2: Regulated Contaminants Where California MCLs Are More Stringent Than Federal MCLs

Contaminant	CA MCL	Federal MCL	Units
<i>Inorganic Contaminants:</i>			
• Barium	1	2	mg/L
• Chromium	50	100	ug/L
• Cyanide	150	200	ug/L
• Fluoride	2	4	mg/L
<i>Synthetic Organic Contaminants:</i>			
• Atrazine	1	3	ug/L
• Carbofuran	18	40	ug/L
• Chlordane	0.1	2	ug/L
• Di (2-ethylhexyl) phthalate	4	6	ug/L
• Heptachlor	0.01	0.4	ug/L
• Heptachlor Epoxide	0.01	0.2	ug/L
• Methoxychlor	30	40	ug/L
• Oxamyl	50	200	ug/L
<i>Volatile Organic Contaminants:</i>			
• Benzene	1	5	ug/L
• Carbon Tetrachloride	0.5	5	ug/L
• 1,4-Dichlorobenzene	5	75	ug/L
• 1,2-Dichloroethane	0.5	5	ug/L
• 1,1-Dichloroethylene	6	7	ug/L
• cis-1,2-Dichloroethylene	6	70	ug/L
• trans-1,2-Dichloroethylene	10	100	ug/L
• Ethylbenzene	300	700	ug/L
• Monochlorobenzene	70	100	ug/L
• Toluene	150	1000	ug/L
• 1,2,4 Trichlorobenzene	5	70	ug/L
• Vinyl Chloride	0.5	2	ug/L
• Xylenes	1,750	10,000	ug/L

This report does not address private domestic wells serving individual homes and facilities that are not public water systems, including state small water systems (water

systems having between 5 and 14 service connections) that are not regulated under the California SDWA.

1.7. Data Presented in This Report

The data presented in this Annual Compliance Report is from the state's Safe Drinking Water Information System (SDWIS-State), the database of record for the inventory and compliance data required to support California's Drinking Water Program and reporting to USEPA. In past years, DDW used data downloaded from USEPA (SDWIS/FED) that was previously uploaded by DDW to USEPA. Because of the complex data handling process between DDW and USEPA, DDW has found inaccuracies in the information retrieved from SDWIS/FED. DDW's Data Management Unit provides technical support for reporting and data cleanup activities. While DDW continues efforts to improve the quality of the data reported to USEPA to ensure data extractions provide accurate and useful information, DDW has determined that data retrieved from SDWIS-State is the most accurate dataset to use as the basis of this and future Annual Compliance Reports.

DDW continues to upload data each quarter from SDWIS-State to USEPA. The data submitted include, but are not limited to, PWS inventory information; information on MCL, MRDL, monitoring and reporting, and treatment technique violations for regulated contaminants; violations concerning public and consumer notification; information on enforcement activities related to these violations; and data associated with the Lead and Copper Rule. The USEPA Regional offices also report federal enforcement actions taken against state-regulated public water systems.

The 2022 Annual Compliance Report lists federal violations by the following categories:

1. Inorganic Contaminants (IOC)
2. Synthetic Organic Contaminants (SOC)
3. Volatile Organic Contaminants (VOC)
4. Radionuclide Contaminants (RAD)
5. Revised Total Coliform Rule (rTCR)
6. Disinfectants and Disinfection By-Products Rule (DBPR), including Stage 1 DBPR and Stage 2 DBPR
7. Surface Water Treatment Rule (SWTR), including the Filter Backwash Rule, Interim Enhanced SWTR, Long Term 1 Enhanced SWTR, and Long Term 2 Enhanced SWTR
8. Groundwater Rule (GWR)
9. Lead and Copper Rule (LCR)
10. Public Notification Rule (PN)

- 11. Consumer Confidence Report Rule (CCR)
- 12. Variances and exemptions (V/E)

1.8. California-Specific Drinking Water Standards

This report provides a separate summary and accounting of violations of state-regulated contaminants that are not federally regulated. A list of these California-specific regulated contaminants is presented in Table 3. Discussion of California-specific violations is provided in Section 3.4 and 3.5.

Table 3: Contaminants Additionally Regulated Under the California SDWA

<p><i>Inorganic Contaminants</i></p> <ul style="list-style-type: none"> • Perchlorate • Aluminum • Nickel <p><i>Synthetic Organic Contaminants</i></p> <ul style="list-style-type: none"> • Bentazon • Molinate • Thiobencarb • 1,2,3-Trichloropropane <p><i>Volatile Organic Contaminants</i></p> <ul style="list-style-type: none"> • Methyl tert-butyl ether (MTBE) • 1,1-Dichloroethane • 1,3-Dichloropropene • 1,1,2,2-Tetrachloroethane • Trichlorofluoromethane • 1,1,2-Trichloro-1,2,2-trifluoroethane

Additionally, DDW maintains violation records of California-specific drinking water standards, including the following:

1. CA TCR and rTCR - In July 2021, DDW updated the state bacteriological regulations (formerly CA TCR) to reflect the federal Revised Total Coliform Rule (rTCR). Bacteriological safety of California drinking water is now monitored through the rTCR federal requirements. Unresolved pre-2022 CA TCR violations are counted in this report with California-specific violations in Table 21.
2. Secondary Standards - California regulates the contaminants or water quality constituents in the following table for aesthetic effects, including taste, odor, and appearance. CWS sources must be monitored for these contaminants on a regular basis to determine compliance with Secondary MCLs, which are also called “consumer acceptance contaminant levels” (or “consumer acceptance contaminant level ranges” for certain constituents).

Contaminants with Secondary MCLs:

- Aluminum
- Color
- Copper
- Foaming Agents (MBAS)
- Iron
- Manganese
- Methyl-tert-butyl ether (MTBE)
- Odor
- Silver
- Thiobencarb
- Turbidity
- Zinc
- Total Dissolved Solids (TDS)
- Specific Conductance
- Chloride
- Sulfate

3. The Drinking Water Program collects violation information for the following state requirements:

- Operator Certification (OP) – failure of a PWS to have an operator certified by the state at the appropriate certification level
- Waterworks Standards (WW) – failure to comply with the California Waterworks Standards
- Permit (PT/PP) – operating a water system without a permit, or violation of a permit provision
- Annual Report (AR) – failure to submit an annual report to the Drinking Water Program
- Cross-Connection Control (CC) – failure to comply with the Cross-Connection Control Regulations
- Treatment Technique (TT) – failure to provide treatment as specified in the operating permit
- Reporting Requirement (RR) – failure to submit a compliance report to the Drinking Water Program, including those related to the school lead sampling program or PFAS (California Health and Safety Code (CHSC) section 116277)
- Point of Use/Point of Entry (POU/POE) – maximum contaminant violation for treatment devices serving a single water tap or a single building
- Lead Service Line Inventory (LSL)– failure to comply with the requirements of CHSC section 116885

Chapter 2. Review of 2022 Violation Data

Public water systems must conduct monitoring on a routine basis for regulated contaminants and to satisfy treatment technique requirements to document that the water provided meets the drinking water standards. PWSs must submit the data and compliance information to DDW and LPAs as the results are received and must summarize and report the compliance status on a regular basis as prescribed by the regulations. DDW and LPAs track the violations incurred by PWSs in DDW's SDWIS-State database. Major violations described below are summarized in this section. Detailed tables of violations are included in the Appendix of the report.

- Maximum contaminant level (MCL) violations
- Maximum residual disinfectant level (MRDL) violations
- Treatment technique requirement (TT) violations
- Significant monitoring and/or reporting requirements (M/R) violations
- Variances and exemptions violations
- Recordkeeping violations
- Significant public notification requirement violations
- Significant consumer confidence report (CCR) notification requirement violations

2.1. Overview of Violations for Calendar Year 2022

In 2022, about 2,667 violations for federally regulated contaminants or rules were incurred by public water systems, with 764 violations for failing to meet an MCL/TT and 1,903 violations for failing to meet a monitoring and/or reporting (M/R) requirement. Violations are recorded carefully by the Districts and LPAs providing oversight of public water systems; however, DDW has identified there are unresolved violations incurred prior to 2022 where on-going violations were not identified in 2022 that were not included in this report. DDW is working to improve violation reporting and advance data extraction methods to eliminate potential errors for subsequent reports. Table 4 shows the number of violations by category for MCL/TT and M/R requirements that occurred in 2020, 2021 and 2022. The counts of MCL/TT violations in 2022 are comparable to the levels in 2021, but show some reduction compared to 2020 as a result of DDW's continuous effort to provide safe drinking water to Californians. Ongoing efforts include providing increased funding towards those water systems to support projects addressing ongoing violations and prioritization for support under the Safe Affordable Funding for Equity and Resilience (SAFER) program. The highest number of MCL/TT violations incurred in 2022 is for violation of the Inorganic Contaminants MCL, followed by violation of a Disinfection By-Products Rule and Radionuclide Contaminants requirement. The high number of MCL violations for inorganic contaminants were primarily due to nitrate and arsenic. The highest number of M/R violations were for the

Lead and Copper Rule, the Revised Total Coliform Rule, Consumer Confidence Report Rules, as well as Inorganic Contaminants.

Table 4: Number of Federal Violations by Rule Category for Maximum Contaminant Levels / Treatment Techniques (MCL/TT) and Monitoring / Reporting Requirements (M/R)

No.	Category	2020 MCL /TT	2020 M/R	2021 MCL /TT	2021 M/R	2022 MCL/ TT	2022 M/R
1	Inorganic Contaminants	491	111	524	238	523	179
2	Synthetic Organic Contaminants	9	12	5	1	8	4
3	Volatile Organic Contaminants	0	3	0	5	0	4
4	Radionuclide Contaminants	70	5	66	8	57	4
5	Revised Total Coliform Rule	11	277	26	377	39	426
6	Disinfection By-Products Rule	124	26	97	72	103	86
7	Surface Water Treatment Rules	103	10	29	16	32	6
8	Groundwater Rule	2	11	3	34	0	48
9	Lead and Copper Rule	2	277	3	521	1	844
10	Public Notification Rule	---	1	---	30	---	32
11	Consumer Confidence Report Rule	---	38	---	216	---	268
12	Variances and Exemptions	---	7	---	2	---	2

In 2022, about 914 violations of California-specific drinking water standards were incurred by public water systems, with 402 violations for failing to meet an MCL/TT, 253 violations for failing to meet a monitoring or reporting requirement, and 259 violations of other California SDWA requirements that are currently being tracked in SDWIS-State.

Table 5 shows the number of violations by category for MCL/TT, M/R, and other requirements. The highest number of MCL/TT violations were for violations of the MCL for 1,2,3 trichloropropane (123TCP). The violations of federal rTCR are presented in Table 4, and the violations of California’s TCR are presented in Table 5.

Table 5: Number of California-specific Violations by Category for MCLs/TTs, M/R and other Requirements

No.	Category	2021 MCL/TT	2021 M/R	2021 Other	2022 MCL/TT	2022 M/R	2022 Other
1	Primary Inorganic Contaminants & TT	10	6	---	80	36	---
2	Synthetic Organic Contaminants (SOCs)	321	33	---	219	25	---
3	Volatile Organic Contaminants (VOCs)	0	0	---	0	0	---
4	Secondary Standards	60	17	---	66	3	---
5	CA Total Coliform Rule (TCR)	21	31	---	14	30	---
6	Operator Certification - Failure to have an operator at the appropriate certification level	---	---	23	---	---	45
7	Waterworks Standards - Failure to comply with a Waterworks Standard	---	---	36	---	---	88
8	Permits - Violation of a permit provision	---	---	105	---	---	96
9	Permits - Operating without a permit	---	---	9	---	---	14
10	Annual Report - Failure to submit an Annual Report to DDW	---	168	---	---	138	---

No.	Category	2021 MCL/TT	2021 M/R	2021 Other	2022 MCL/TT	2022 M/R	2022 Other
11	Cross-Connection Control	---	---	8	---	---	16
12	Treatment Technique	17	---	---	19	2	---
13	Point of Use/Point of Entry (POU/POE)	---	---	---	---	4	---
14	Reporting Requirement	---	17	---	---	15	---
15	Lead Service Line Inventory	---	---	0	---	---	0

2.2. Overview of Public Water System Compliance for Calendar Year 2022

In 2022, 1,661 public water systems violated at least one federal drinking water standard described in Section 1.7, with 303 public water systems violating one or more MCL/TTs, 1,339 public water systems violating one or more M/R requirements, and 80 public water systems violating both MCL/TTs and M/R requirements.

Figure 5 shows that about 93% of the MCL or TT violations were incurred by NTNCs, TNCs, and CWSs serving fewer than 500 service connections. About 54% of PWSs that incurred an MCL or TT violation in 2022 were CWSs. A breakdown by size of the CWS, categorized by the number of service connections served by the CWS (greater than 3,300 service connections, between 1000 and 3,300 service connections, etc.), is shown in the bar graph in Figure 5. A similar trend is seen for the public water systems that incurred monitoring and reporting violations in 2022 as shown in Figure 6.

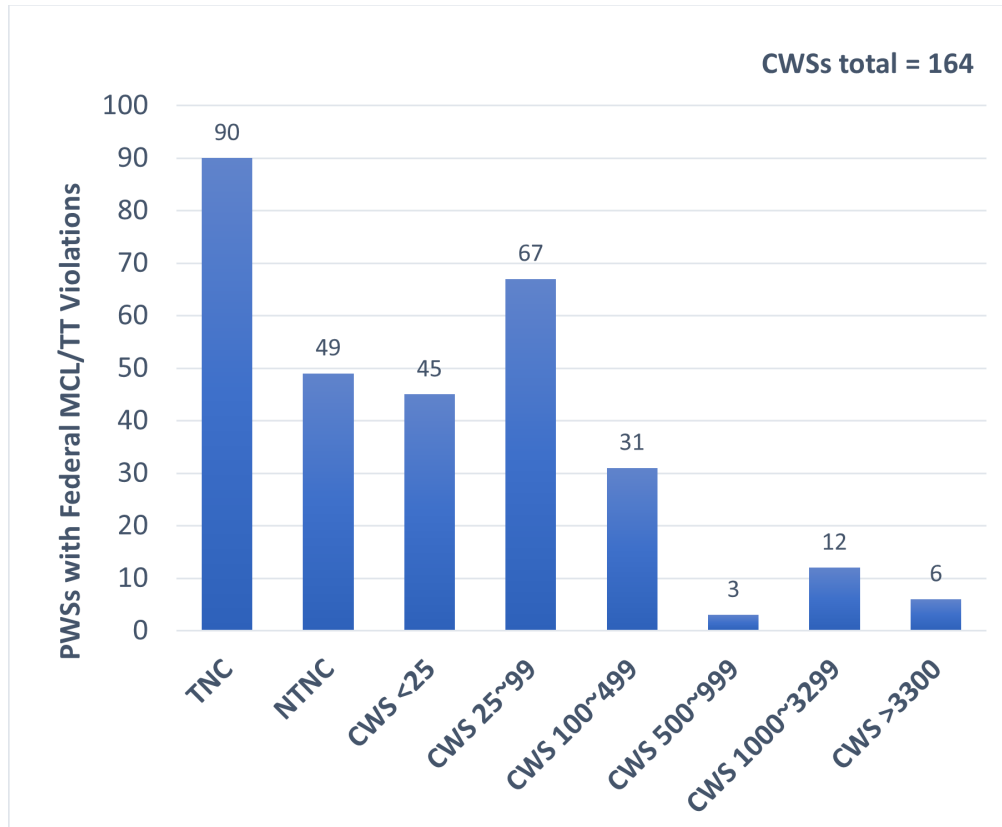


Figure 5: Number of PWSs with one or more federal regulated MCL/TT violations in 2022, by water system type/CWS size (number of service connections).

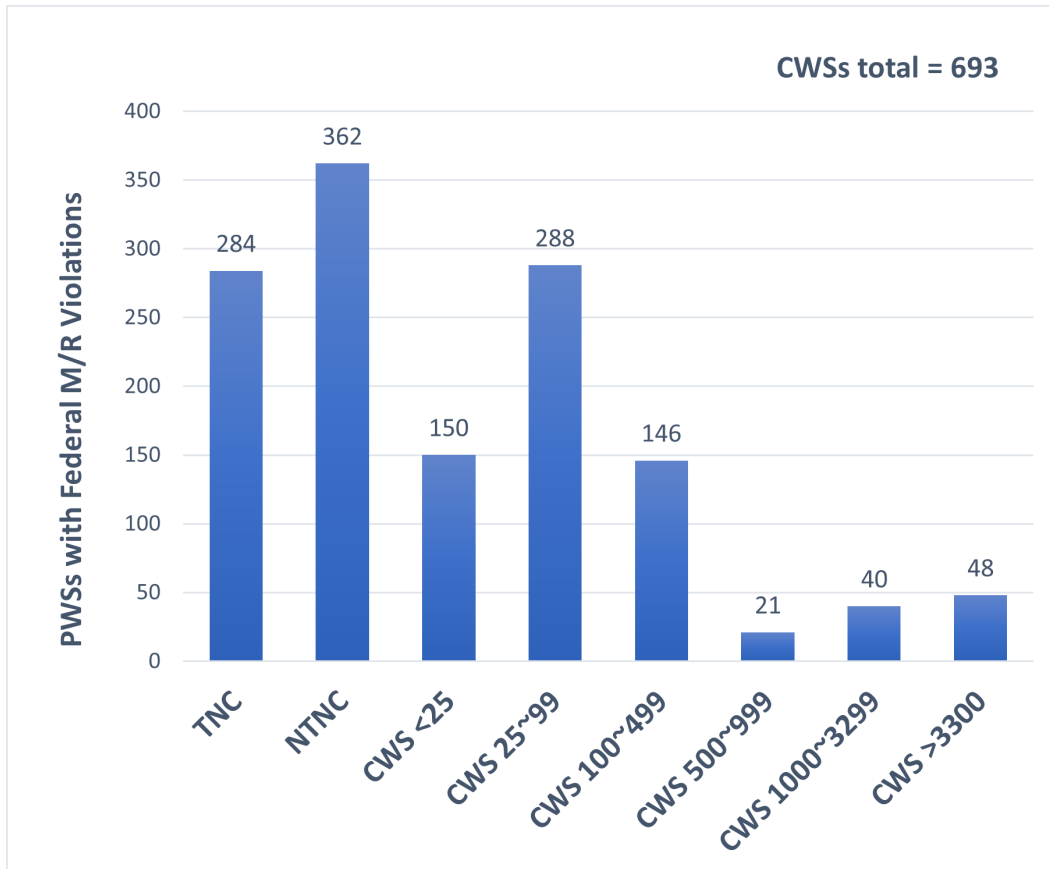


Figure 6: Number of PWSs with one or more federal regulated monitoring and reporting violations in 2022, by water system type/CWS size (number of service connections).

Table 6 summarizes the number and population of water systems with violations of maximum contaminant levels, maximum residual disinfectant levels and treatment techniques for the past three years. The Federal Revised Total Coliform Rule (rTCR) changed how TCR violations are accounted for in federal reporting. As noted previously, California had been tracking compliance with the TCR until it adopted state regulations for the rTCR on July 1, 2021. Under the TCR, an exceedance of the Total Coliform MCL is a violation. Under rTCR, a “corrective action” process must be followed if a Total Coliform MCL is exceeded; and failure to complete the corrective action is also a violation.

Table 6: Number and Population of Water Systems with Violations of Maximum Contaminant Level (MCL), Maximum Residual Disinfection Level (MRDL), and/or Treatment Technique (TT)

No.	Category	<u>2020</u> # of PWSs	<u>2020</u> Population	<u>2021</u> # of PWSs	<u>2021</u> Population	<u>2022</u> # of PWSs	<u>2022</u> Population
1	Inorganic Contaminants	165	59,965	181	78,128	175	121,500
2	Synthetic Organic Contaminants	3	630	2	550	3	215
3	Volatile Organic Contaminants	0	0	0	0	0	0
4	Radionuclide Contaminants	25	9,121	21	7,486	21	9,056
5	Revised Total Coliform Rule	12	2,064	25	10,173	35	61,666
6	Disinfection By-Products Rule	39	138,711	41	121,851	45	111,145
7	Surface Water Treatment Rules (SWTR)	13	1,229	16	1,450	24	20,572
8	Groundwater Rule	2	769	3	3066	0	0
9	Lead and Copper Rule	2	350	3	4,876	1	250

Table 7 summarizes the number and population of water systems with violations of monitoring and reporting requirements for the last three years.

In addition to the federal rules and violations required to be reported in the Annual Compliance Report, 465 public water systems violated at least one California-specific drinking water standard described in Section 1.8, with 130 public water systems violating one or more MCL/TTs, 207 public water systems violating one or more M/R requirements, and 4 public water systems violating both MCL/TTs and M/R requirements for state-regulated contaminants. One hundred sixty-six (166) PWSs violated other requirements specific to California’s drinking water regulations, such as permit provision requirements. A water system may have a violation in one or more of these categories. These California-specific violations are further discussed in Section 3.13.

Table 7: Number and Population of Water Systems with Federal Violations of Monitoring and Reporting Requirements (M/R).

No.	Category	<u>2020</u> # of PWSs	<u>2020</u> Population	<u>2021</u> # of PWSs	<u>2021</u> Population	<u>2022</u> # of PWSs	<u>2022</u> Population
1	Inorganic Contaminants	83	22,631	212	244,121	146	218,641
2	Synthetic Organic Contaminants	3	580	1	36	4	122,607
3	Volatile Organic Contaminants	3	365	5	499	2	130,242
4	Radionuclide Contaminants	2	101	3	245	3	1,109
5	Revised Total Coliform Rule	190	1,948,015 (a)	251	814,829	309	937,528
6	Disinfectant and Disinfection By-Products Rule	17	29,693	43	117,493	58	429,249
7	Surface Water Treatment Rules	4	7,413	4	3,171	4	1,046
8	Groundwater Rule	11	87,504	28	421,846	41	1,467,506
9	Lead and Copper Rule	163	88,216	355	522,239	573	973,118
10	Public Notification Rule	1	77	0	0	17	31,506
11	Consumer Confidence Report Rule	29	11,353	158	93,991	199	280,793
12	Variances and exemptions	4	547	0	0	2	91

(a) One rTCR monitoring violation occurred at City of San Diego (population served 1,394,515) from December 2019 to April 2020 and the system returned to compliance in May 2020. Another rTCR monitoring violation occurred at Irvine Ranch Water District (population served 422,000) in September 2020 and the system returned to compliance in October 2020.

The following additional data summary tables are included in the appendices to this report. These tables list public water system that have incurred violations of MCLs of three compounds of interest, sorted by county and water system number. The table also provides the population served by these water systems.

- Appendix A – exceedance of arsenic MCL.
- Appendix B – exceedance of the nitrate MCL.
- Appendix C – exceedance of the 1,2,3-trichloropropane MCL.

Chapter 3. Discussion of Violations

This section contains summary information on violations of MCLs and TTs. More specific information on the quality of water provided by a public water system can be obtained by requesting a copy of the Consumer Confidence Report (CCR) that all CWSs and NTNCs are required to issue to their customers annually. To obtain a copy of a CCR, customers may contact the public water system serving the area. Many public water systems also post their CCR online. The State Water Board provides access to the CCRs received from PWSs on the CA Drinking Water Watch webpage at <https://sdwis.waterboards.ca.gov/PDWWW/>. The CA Drinking Water Watch webpage also provides access to public water system contact information, water quality data, and violation and enforcement information. When a public water system has violated a drinking water standard, the public water system is required to provide a public notice to their consumers and make copies of the notice available upon request to others.

Sections 3.1 of this report discuss violations of federal primary MCL and TT requirements, Section 3.2 discuss violations of federal monitoring and reporting requirements, Section 3.3 discuss variance and exemption violations, Section 3.4 reports violations of California-specific drinking water MCL standards and Section 3.5 reports violations of California-specific monitoring, reporting and other standards.

3.1. Federal Maximum Contaminant Level and Treatment Technique Violations

3.1.1. Inorganic Contaminants (IOCs)

All CWSs and NTNCs are required to meet primary drinking water standards for 18 inorganic contaminants. TNCs must monitor and comply with the MCLs for nitrate and nitrite. A total of 523 violations of inorganic contaminant MCLs were recorded for the year, as summarized in Table 8.

Table 8: Summary of Inorganic Contaminates MCL Violations and PWS Counts

Contaminant	Violation Category	Number of Violations	Number of PWSs
Arsenic	MCL	225	65
Cadmium	MCL	3	1
Fluoride	MCL	15	5
Nitrate	MCL	269	101
Selenium	MCL	11	3
Total		523	175 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant listed, since a PWS may have violations of more than one contaminant.

Figure 7 below shows that of the 175 PWSs that incurred one or more inorganic contaminant MCL violations in 2022, about 97% were non-community water systems or CWSs with fewer than 500 service connections.

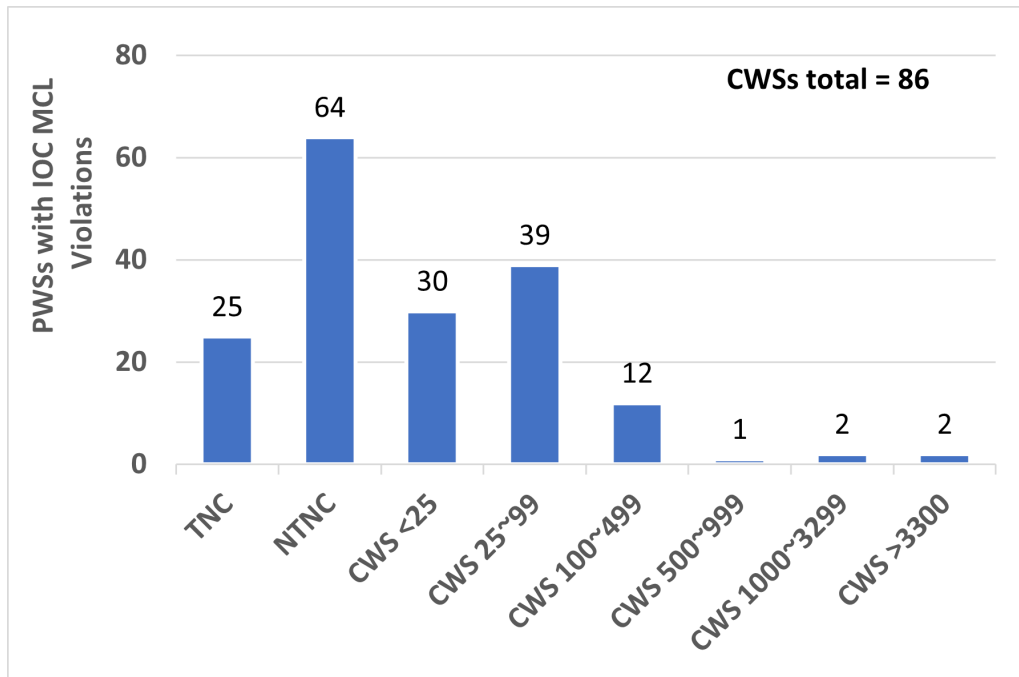


Figure 7: Number of PWSs with inorganic contaminant MCL violations, by water system type/CWS size (number of service connections).

Arsenic - In 2022, 65 PWSs incurred 225 arsenic MCL violations. Arsenic violations accounted for about 43% of all inorganic chemical MCL violations in 2022. The arsenic MCL is 0.010 mg/L, and compliance with the arsenic MCL is determined based on a running annual average. When a PWS exceeds the arsenic MCL, it must provide public notice to its customers of the violation, potential health impacts of the contaminant, and when the PWS will return to compliance with the MCL, among other things. A PWS must continue to provide public notification on a quarterly basis until such time the PWS is able to comply with the MCL.

The major sources of arsenic in drinking water are from erosion of natural deposits. Other sources of arsenic may include runoff from orchards and wastes from glass and electronics production. Some people who drink water containing arsenic in excess of the MCL for many years could experience skin damage or problems with their circulatory system and may have an increased risk for cancer.

Figure 8 shows the types of PWSs that incurred arsenic MCL violations in 2022. Noncommunity water systems and CWSs serving fewer than 500 connections account for 97% of the total number of PWSs that incurred an arsenic MCL violation in 2022.

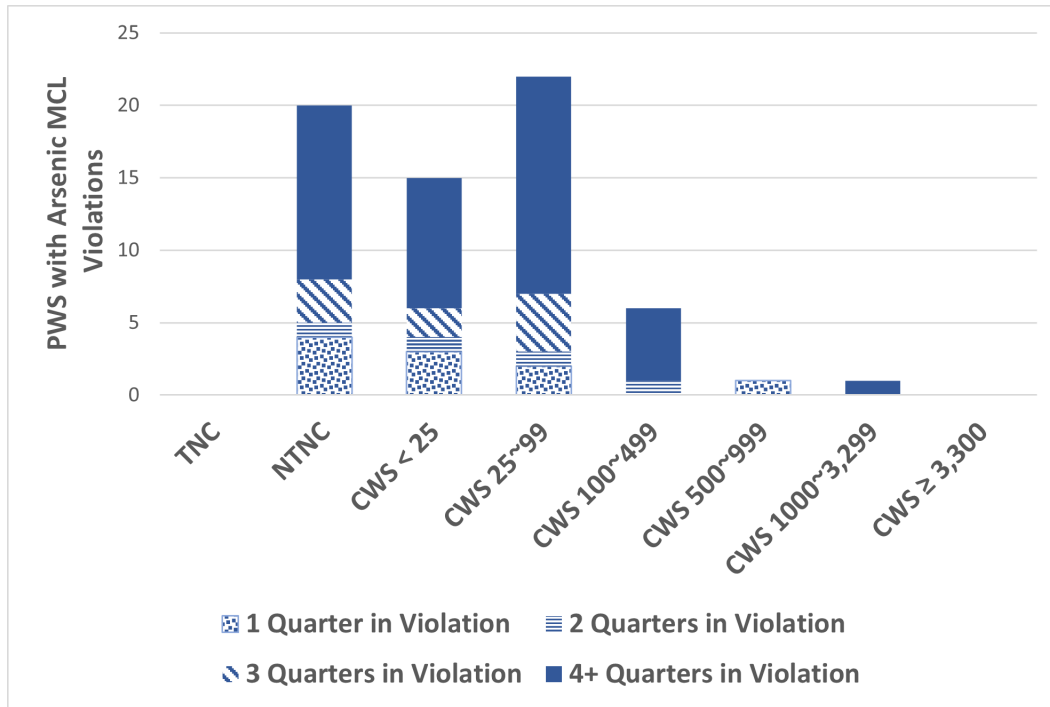


Figure 8: Number of PWSs with arsenic MCL violations for each PWS type/CWS size and duration of the violation.

Figure 9 shows the areas in the state where PWSs have incurred arsenic MCL violations in 2022. A list of PWSs with arsenic MCL violations in 2022 is included in Appendix A.

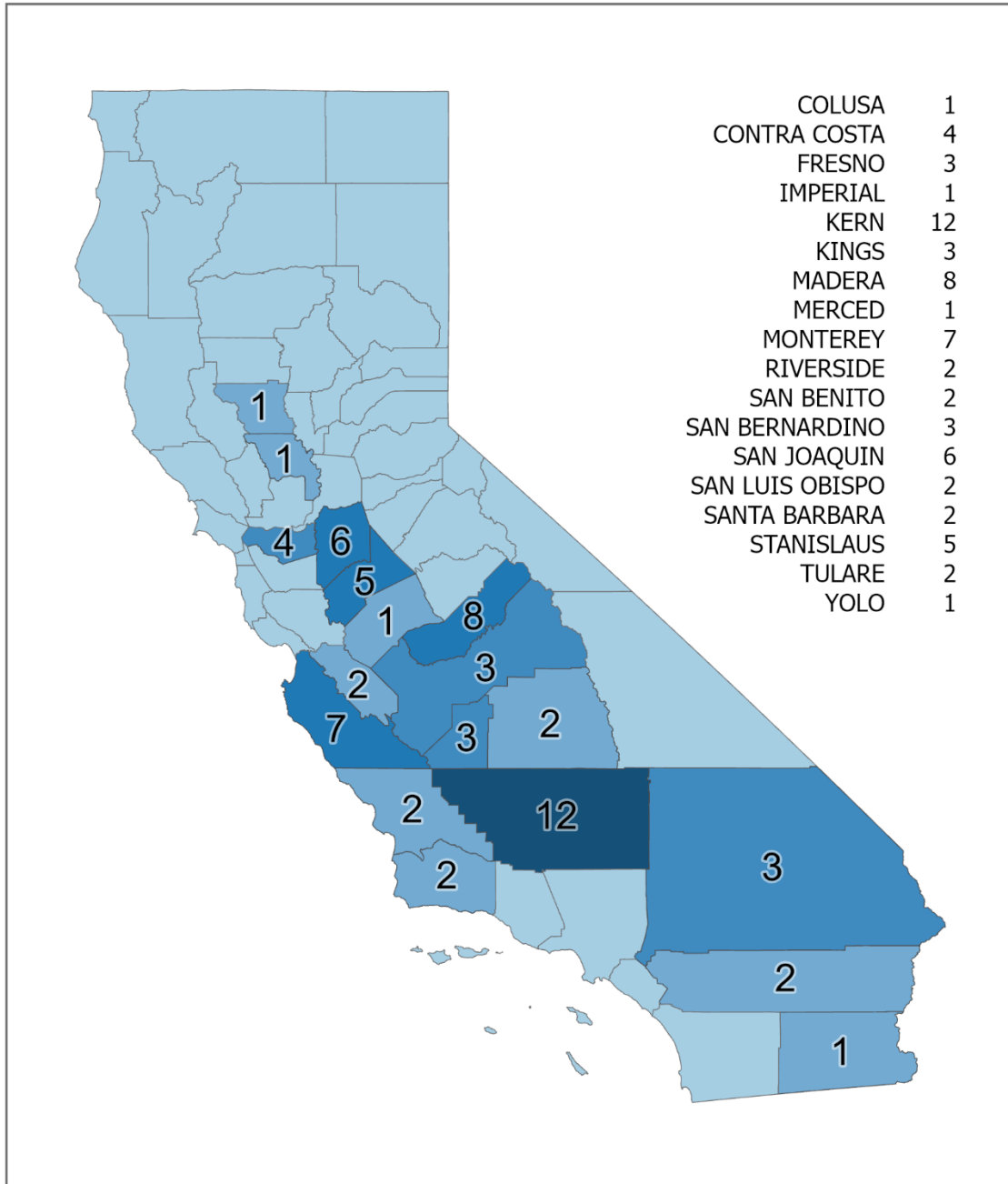


Figure 9: The number of PWSs with arsenic MCL violation(s) in each county.

Figure 10 shows the duration of arsenic violations recorded in 2022. Forty-two (42) PWSs incurred arsenic MCL violations in all four quarters of 2022, indicating persistent non-compliance with the arsenic MCL for these systems. During 2022, fourteen (14) PWSs (22% of the PWSs with arsenic MCL violations) received funding through the State Water Board to address the arsenic violations.

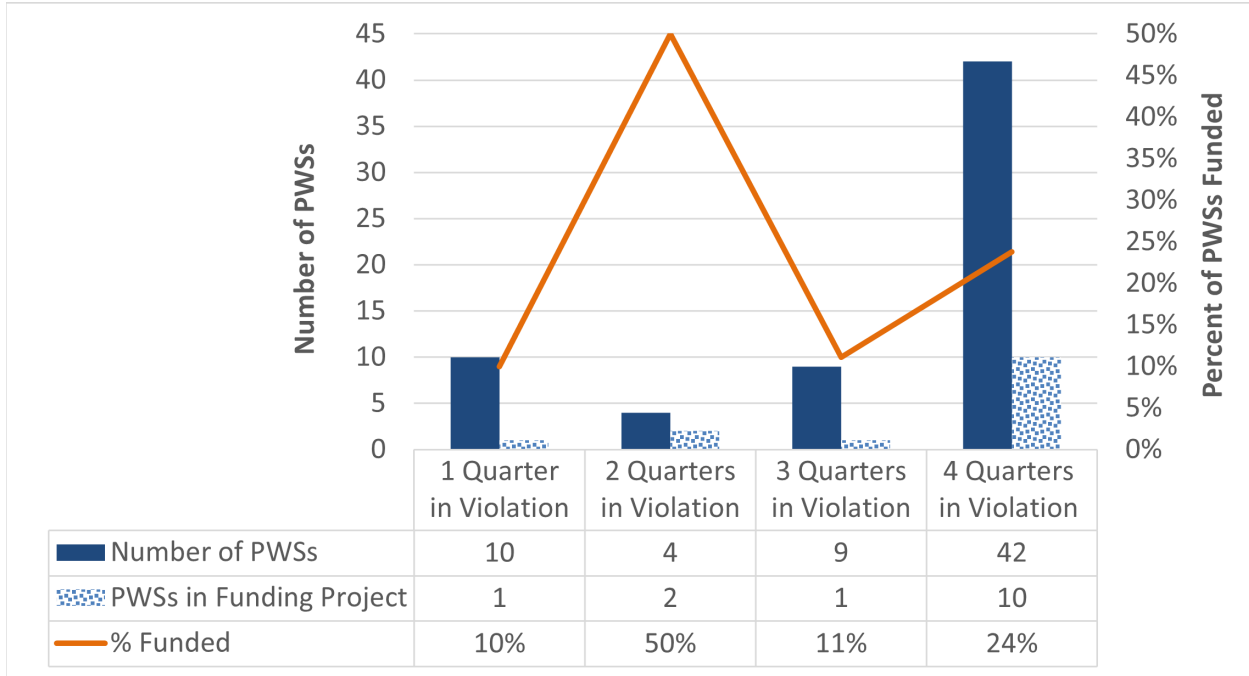


Figure 10: Number of PWSs with arsenic MCL violations and percentage of the PWSs with funding projects for different durations of the violation.

Cadmium - In 2022, one PWS incurred three cadmium MCL violations. This PWS is in Monterey County. The major sources of cadmium in drinking water are internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating, industrial chemical factories, and metal refineries; runoff from waste batteries and paints. Some people who drink water containing cadmium in excess of the MCL over many years may experience kidney damage.

Fluoride - In 2022, 5 PWSs incurred 15 fluoride violations against the federal fluoride MCL. These PWSs are in Los Angeles, Madera, Monterey, San Bernardino, and San Luis Obispo Counties. Seventeen (17) additional violations were recorded for the more stringent California fluoride MCL against 7 PWSs in Kern, Riverside, and San Bernardino Counties. The MCL for fluoride in California is 2 mg/L, which is lower than the 4 mg/L federal MCL. The major source of naturally occurring fluoride in drinking water is erosion of natural deposits. Sources of fluoride associated with human activities include discharges from fertilizer and aluminum processing facilities. Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children under nine years of age who drink water containing fluoride in excess of the California MCL may get mottled teeth (a brownish staining of the teeth called “dental fluorosis”).

Because fluoride also has a beneficial effect in preventing dental caries (tooth decay), some communities may add fluoride to their drinking water (fluoridation). Where fluoridation is practiced, fluoride concentrations are maintained at the optimal level for reduction of dental caries which is well below the state MCL.

Nitrate (including nitrite and nitrate+nitrite combined) - In 2022, 101 PWSs incurred 269 nitrate MCL violations and 0 nitrite or nitrate+nitrite combined MCL violations, accounting for 51% of all inorganic chemical MCL violations in 2022. Nitrate and nitrite are commonly found in fertilizers used in farming and gardening. Nitrates are also found in sewage and waste from humans, animals, and some industrial processes, and may be a result of erosion of natural deposits. Contamination from nitrate and nitrite is usually the result of human activities. There are few mineral deposits containing naturally occurring nitrate or nitrite in California.

Excessive levels of nitrate and nitrite in drinking water can cause serious illness and, in rare cases, even death in infants less than six months of age. This is a result of interference with the oxygen carrying capacity of the infant's blood, called "blue baby syndrome" or "methemoglobinemia." This is an acute disease in that symptoms can develop rapidly. Symptoms of nitrate exposure in infants include shortness of breath and a marked blueness of the skin. As infants mature, changes in the digestive system naturally occur that stop the conversion of nitrates to nitrites, hence reducing the risk of health effects.

High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women. Expert medical advice and an alternate source of drinking water are recommended if one suspects nitrate levels may be a cause for concern. Local and state health authorities are the best sources for information concerning alternate sources of drinking water. The State Water Board has set the drinking water standard at 10 mg/L nitrate (measured as nitrogen, or 'N'), 1 mg/L for nitrite (measured as N), and 10 mg/L nitrate+nitrite (sum as N) to protect against the risk of these adverse effects. Drinking water that meets the drinking water standard is associated with little to no risk for nitrate or nitrite toxicity and is considered safe with respect to those compounds.

Due to the acute health effects of nitrate and nitrite, an MCL violation is incurred if the average of a sample result and the confirmation sample result exceeds the MCL. The confirmation sample must be collected within 24 hours of notification by the laboratory that a sample exceeded the MCL. If a confirmation sample is not collected within 24 hours of notification, the PWS is immediately in violation of the MCL, and must therefore issue a public notice to its customers as soon as possible within 24 hours, informing the public of the violation, including key information such as the potential health impacts, what the PWS is doing to correct the problem, and what the public can do to protect their health in the interim.

Figure 11 shows the categories of PWSs that incurred nitrate MCL violations in 2022. Noncommunity water systems and CWSs serving fewer than 500 connections account for 98% of the total number of PWSs that incurred a nitrate MCL violation in 2022. TNCs accounted for 25% while NTNCs accounted for 42% of PWSs with nitrate violations, and CWSs serving fewer than 500 connections accounted for 37% of the PWSs with nitrate/nitrite violations.

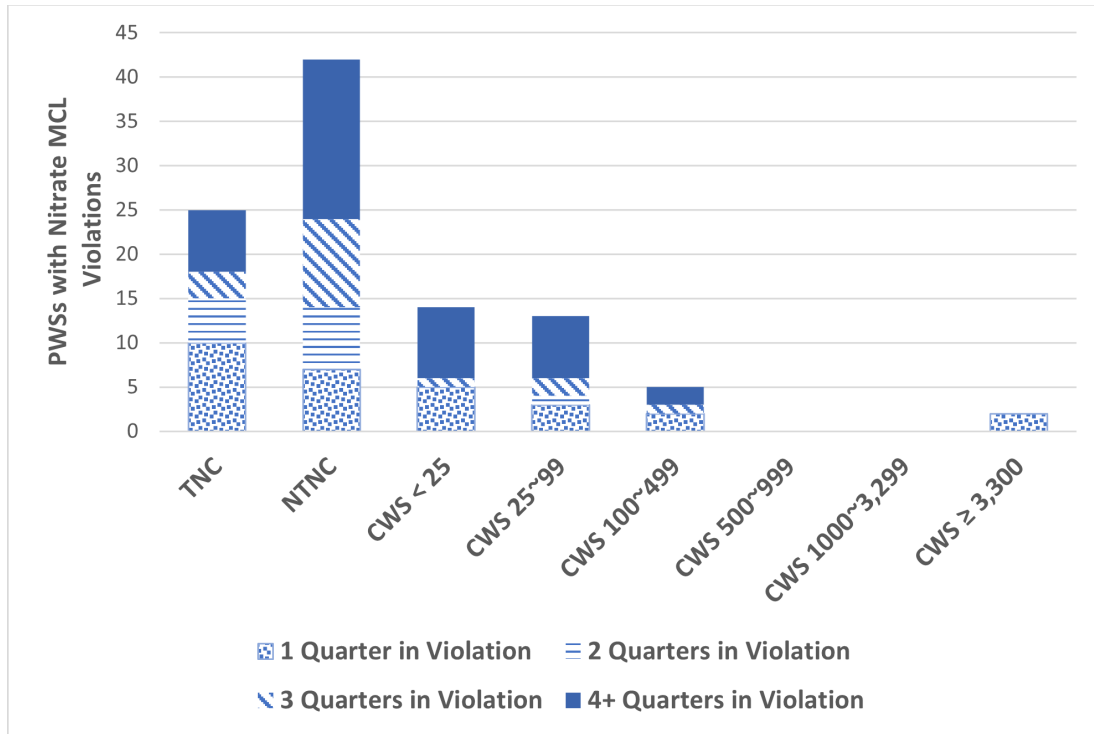


Figure 11: Number of PWSs with nitrate MCL violations for each PWS type/CWS size and duration of violation.

Figure 12 shows the areas in the state where PWSs have incurred nitrate MCL violations in 2022.

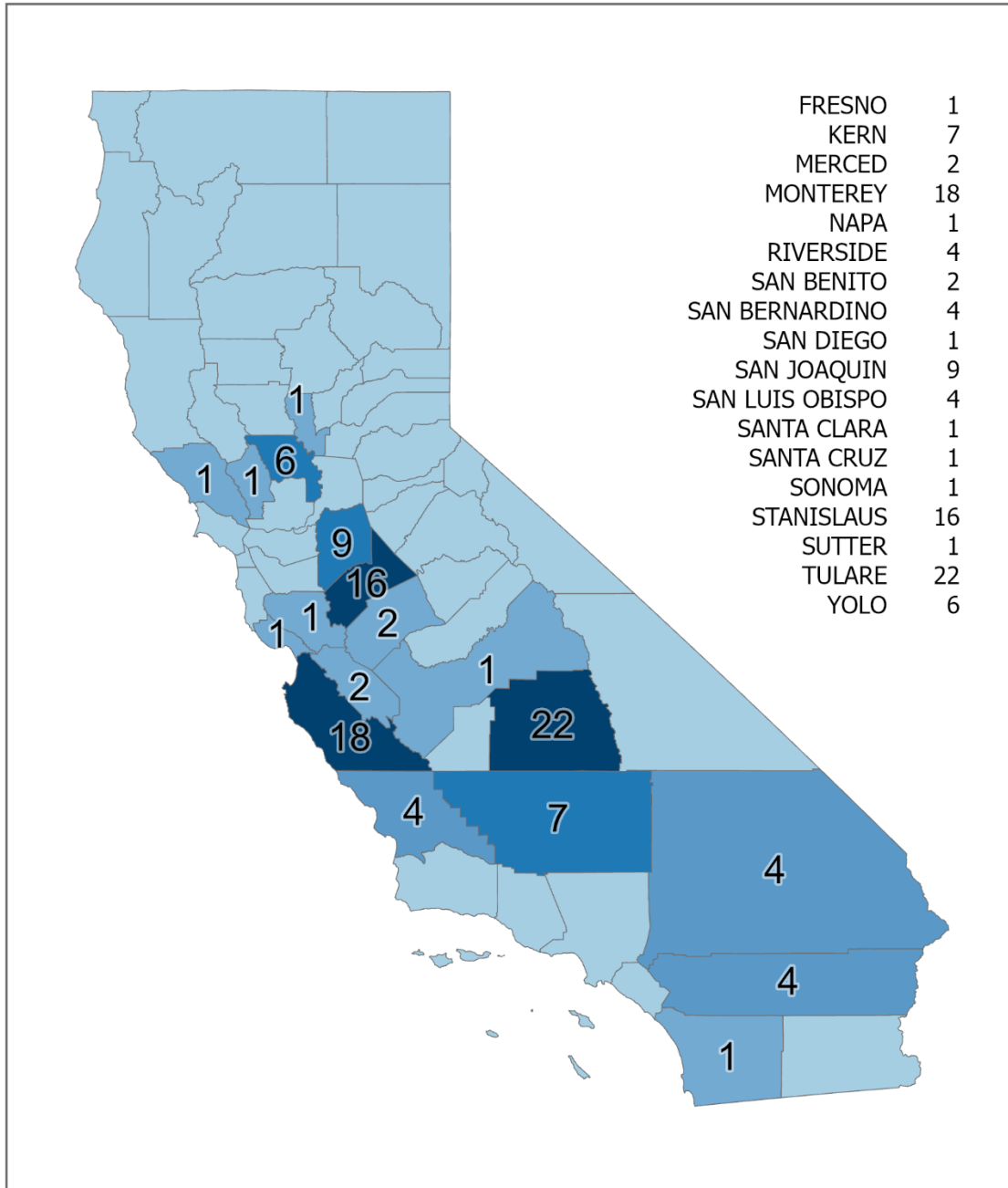


Figure 12: The number of PWSs with nitrate MCL violations in each county.

PWSs that incur nitrate or nitrite MCL violations generally take measures to provide other sources of drinking water or install treatment if they have the capability to do so. PWSs that do not have the capacity to return to compliance with the MCL must at least provide regular (at least quarterly) public notification to their customers so that the public can take action to protect their health. A list of PWSs with nitrate MCL violations in 2022 is included in Appendix B.

Figure 13 below shows the duration of nitrate violations recorded in 2022. A total of 101 PWSs incurred nitrate MCL violations, 29 PWSs for a duration of 1 quarter (3 months or less), 13 PWSs for 2 quarters, 17 PWSs for 3 quarters and 42 PWSs for four quarters. Records show that four (4) of these PWSs (4% of the PWSs with nitrate MCL violations) received funding during 2022 through a State Water Board program, such as the Drinking Water State Revolving Fund, to address the MCL violation.

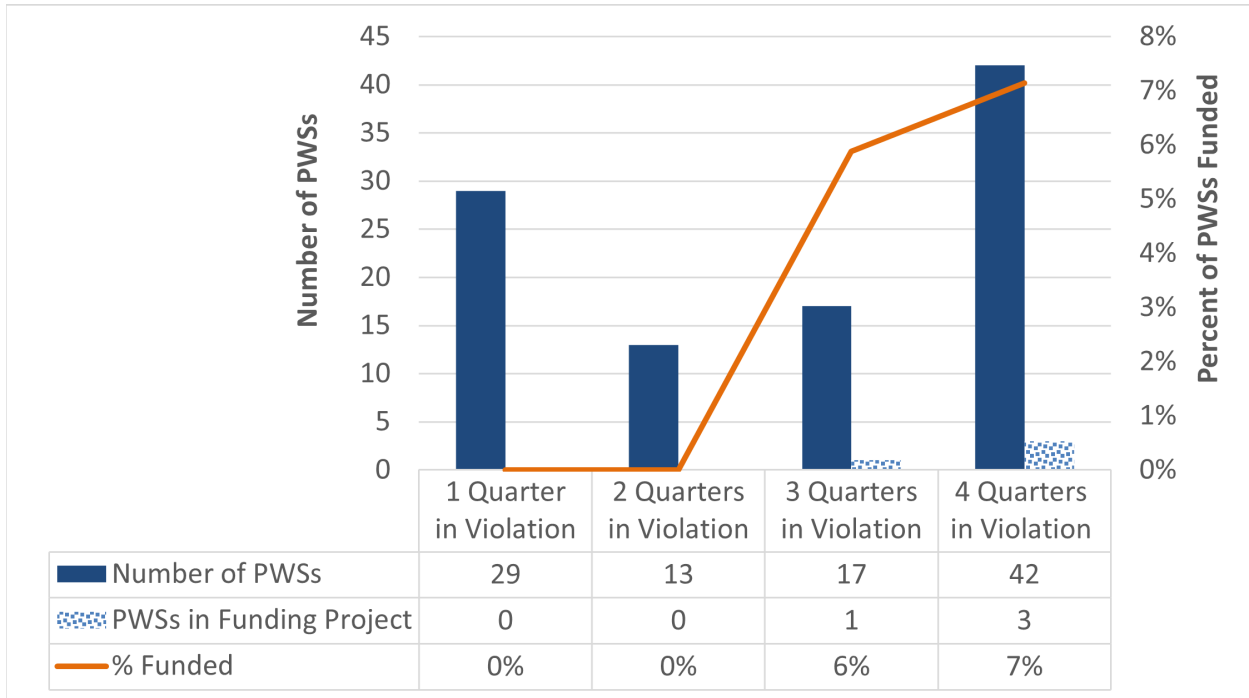


Figure 13: Number of PWSs with nitrate MCL violations and percentage of the PWSs with funding projects for different durations of the violation.

Selenium - In 2022, 3 PWSs incurred 11 selenium MCL (50 ug/L) violations. These PWSs are in San Diego and San Luis Obispo Counties. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years may experience hair or fingernail losses, numbness in fingers or toes, circulation system problems and may have an increased risk of getting cancer. Sources of selenium are discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; or runoff from livestock lots (feed additive).

3.1.2. Synthetic Organic Contaminants (SOCs)

CWSs and NTNCs are required to meet primary drinking water standards for up to 33 synthetic organic contaminants (SOCs). Waivers from monitoring can be granted. Of the 33 SOC, 3 are California-specific (not federally regulated); violations for the California-specific SOC are discussed in Section 3.4.

Table 9: Summary of Synthetic Organic Contaminates MCL Violations and PWS Counts

Contaminant	Violation Category	Number of Violations	Number of PWSs
DBCP	MCL	5	2

During 2022, there were five (5) violations of the 1,2-Dibromo 3-Chloropropane (DBCP) MCL of 0.2 ug/L. The violations were incurred by one CWS in Tulare County and another in Madera County. DBCP is a banned nematicide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit. Some people who use water containing DBCP in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

3.1.3. Volatile Organic Contaminants (VOCs)

CWSs and NTNCs are required to comply with primary drinking water standards for 27 volatile organic contaminants (VOCs). In 2022, no MCL violations were reported for VOCs.

3.1.4. Radionuclide Rule (RAD)

CWSs and NTNCs are required to meet primary drinking water standards for six alpha-emitting radionuclide contaminants regulated under the Radionuclide Rule. Monitoring for beta particle and photon radioactivity is required only if the Drinking Water Program determines that a source of water supply is vulnerable based on proximity to a nuclear facility. During 2022, there were 57 violations of radionuclide MCLs by 21 public water systems. Radionuclide MCL violations were for gross alpha particle activity and combined uranium.

Table 10: Summary of Radionuclide MCL Violations and PWS Counts

Contaminant	Violation Category	Number of Violations	Number of PWSs
Combined Uranium	MCL	54	20
Gross Alpha Particle Activity	MCL	3	2
Totals		57	21 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant listed, since a PWS may have violations of more than one contaminant.

The major source of uranium in drinking water is from erosion of natural deposits. Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of getting cancer. The State Water Board has set the drinking water standard for uranium at 20 pCi/L to protect against the risk of

these adverse health effects. USEPA has set a federal drinking water standard for uranium at 30 ug/L, which is equivalent to the state MCL.

3.1.5. Revised Total Coliform Rule (rTCR)

All public water systems are required to comply with the Revised Total Coliform Rule (rTCR), which specifies monitoring of the water in the distribution system for the presence of coliform bacteria. The rTCR became effective on July 1, 2021, in California to replace the Total Coliform Rule (TCR). Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

CWSs are required to collect samples ranging from one sample per month to 120 samples per week in the water distribution system, depending on the size of the PWS. NTNC and TNC systems are generally on a monthly or quarterly sampling frequency. Whenever samples are total coliform-positive, repeat samples must be collected at that location and in surrounding areas and analyzed for fecal coliform or *E. coli* bacteria. Fecal coliform and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal waste. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

The rTCR requires PWSs that have an indication of coliform contamination (e.g., as a result of total coliform positive (TC+) samples, *E. coli* MCL violations, performance failure) to assess the problem and take corrective action. There are two levels of assessments (i.e., Level 1 and Level 2) based on the severity or frequency of the problem:

- Level 1 Assessments
 - Triggered by 2 or more TC+ routine samples in a month for PWS collecting fewer than 40 samples per month (smaller PWSs), or greater than 5% TC+ samples in a month for PWS collecting 40 or more samples per month (larger PWSs); or
 - Triggered by a PWS failing to take every required repeat sample after any single TC+ sample.
- Level 2 Assessments
 - Triggered by a PWS incurring an *E. coli* MCL violation; or
 - Triggered by a PWS having a second Level 1 Assessment within a rolling 12-month period; or

- Triggered by a PWS on state-approved annual monitoring having a Level 1 Assessment trigger in 2 consecutive years.

Since California revised the state’s TCR regulation to incorporate rTCR in July 2021, DDW regulated both the rTCR and the state TCR concurrently for the first half of 2021. Because violation of the monthly Total Coliform MCL was no longer reportable to USEPA, DDW tracked these as state violations, and this report includes both ongoing TCR violations and rTCR violations. A summary of the TCR Monthly Total Coliform MCL violations is presented in Section 3.4.

A PWS is in violation of the rTCR *E. coli* MCL or Coliform Treatment Technique requirements when any of the following occurs:

- *E. coli* MCL (acute)
 - Same criteria as the existing Acute Total Coliform MCL conditions
- Coliform Treatment Technique
 - Failure to complete the required corrective action(s) within the specified timeframe after identifying a sanitary defect in a Level 1 or Level 2 assessment.
 - Failure to conduct the required assessment within 30 days after exceeding a treatment technique trigger.
 - Failure of a seasonal system to complete the drinking water primacy agency-approved start-up procedure prior to serving water to the public.

The federally reported rTCR MCL/TT violations for 2022 are summarized in the table below.

Table 11: Summary of Revised Total Coliform Rule Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
rTCR	<i>E. coli</i> MCL Violation	20	17
rTCR	TT – Level 1 Assessment	13	12
rTCR	TT – Level 2 Assessment	4	4
rTCR	TT – Failure to complete a seasonal start-up procedure	2	2
Total		39	35

Figure 14 shows that of the 35 PWSs that incurred one or more rTCR MCL/TT violations in 2022, 60% of them were non-community water systems.

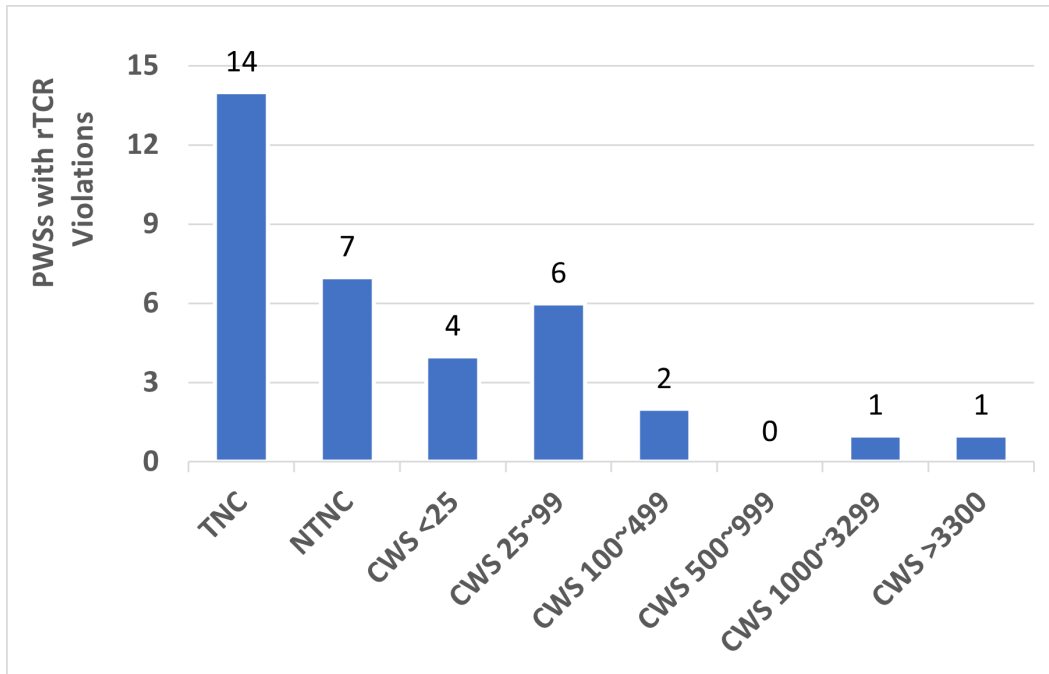


Figure 14: Number of PWSs with rTCR MCL violations for each PWS type/CWS size.

3.1.6. Disinfectants and Disinfection By-Products Rule (DBPR)

All CWSs and NTNCs that provide disinfected drinking water are required to comply with the Stage 1 and Stage 2 Disinfectants and Disinfection By-Products Rule (DBPR). Additionally, TNCs that use chlorine dioxide are required to comply with the requirements for chlorine dioxide. The DBPR established MCLs for four by-products of drinking water disinfection - total trihalomethanes (TTHMs), haloacetic acids (HAA5), bromate, and chlorite; maximum residual disinfectant levels (MRDLs) for three disinfectants – chlorine, chloramine, and chlorine dioxide; TT requirements for the control of total organic carbon (TOC), a disinfection byproduct precursor in surface water sources using conventional surface water treatment; TT requirements for minimum disinfectant residual levels and TT requirements for certified treatment operators.

TTHMs and HAA5s are found primarily in some treated surface water systems but have been found to develop in some disinfected groundwater systems as well. Some people who drink water containing TTHMs in excess of the MCL over many years may experience liver, kidney or nervous system problems and may have an increased risk of getting cancer. HAA5s also present a cancer risk to some people who drink water containing concentrations in excess of the MCL over many years. Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant

women who drink water containing chlorite in excess of the MCL. Some people may experience anemia if drinking water containing excess chlorite.

TTHM and HAA5 MCL violations occur when the average or locational running annual average (LRAA) exceeds the MCL. The determination of a chlorite MCL violation is complex and can occur under a combination of the following scenarios: whether an entry point sample exceeded the MCL, whether a routine or triggered distribution system sample exceeded the MCL, whether confirmation samples were collected or whether they confirmed the original sample result, and whether consecutive entry point samples exceeded the MCL.

The DBPR MCL and TT violations are summarized in Table 12 below. In 2022, 43 PWSs incurred 102 MCL/TT violations. Six (6) PWSs violated both TTHM and HAA5 MCLs in 2022.

Table 12: Summary of Disinfection By-Products Rule Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
DBPR	MCL, Average – Haloacetic Acids (HAA5)	13	5
DBPR	MCL, LRAA – Haloacetic Acids (HAA5)	24	13
DBPR	MCL, Average – Total Trihalomethanes (TTHM)	18	8
DBPR	MCL, LRAA – Total Trihalomethanes (TTHM)	37	20
DBPR	TT – Total Carbon	1	1
DBPR	TT – Total Chlorine	3	2
DBPR	TT, Stage 1 Qualified Operator Failure	6	5
Total		102	43 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant/rule listed, since a PWS may have violations of more than one violation category.

As a requirement of the DBPR, water systems must have a certified operator if they are adding chemical disinfectant to the water in any part of the drinking water treatment process. In 2022, there were a total of six (6) violations from five (5) water systems which failed to have a certified operator under the DBPR requirement.

Figure 15 shows that NTNCs and CWSs serving fewer than 500 connections accounted for 76% of the total number of PWSs that had DBPR MCL/TT violations in 2022.

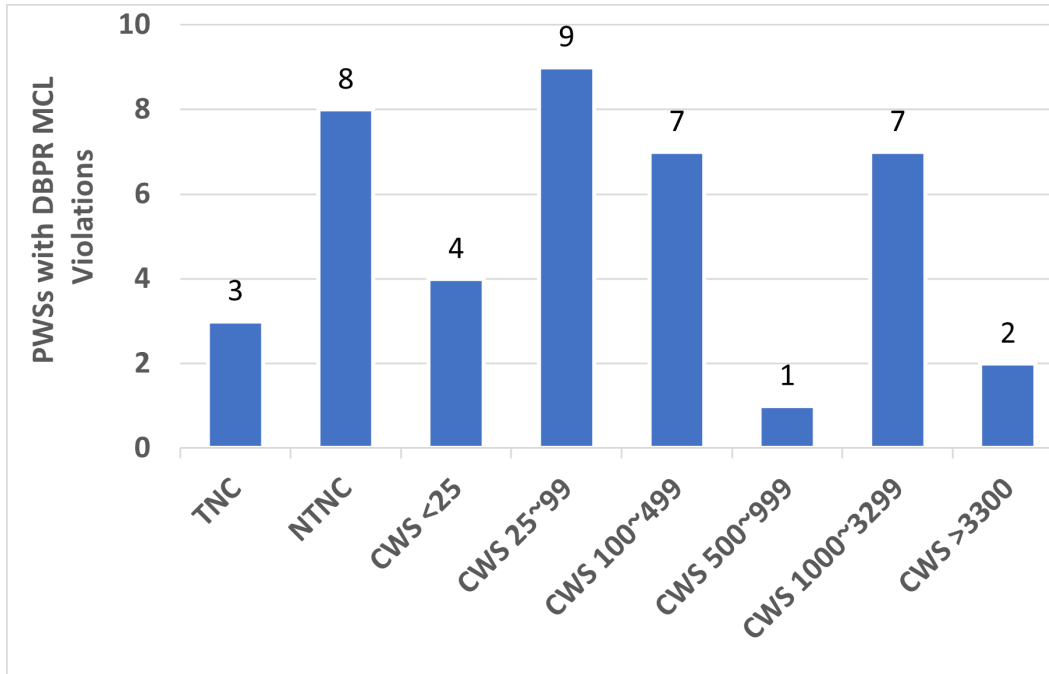


Figure 15: Number of PWSs with DBPR MCL/MRDL/TT violations for each PWS type/CWS size.

3.1.7. Surface Water Treatment Rules (SWTR)

The surface water treatment rules include the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long-term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), Long-term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), and the Filter Backwash Rule. These rules establish monitoring and reporting requirements, treatment techniques, performance standards, and turbidity standards to be met by public water systems using surface water as a drinking water source. As used in this report, the term “surface water” also includes groundwater that has been determined to be under the direct influence of surface water (GWUDI).

Treatment techniques and performance standards are used to establish water quality objectives instead of MCLs for microbiological contaminants that may be found in surface waters, including *Giardia lamblia*, *Cryptosporidium parvum*, Legionella, heterotrophic plate count bacteria, and viruses. Public water systems that use surface water are required to provide multiple levels of treatment (termed ‘multi-barrier’ treatment) to protect against adverse health effects from microbiological contaminants. All multi-barrier treatment systems must include the use of an approved filtration technology as a first barrier, and a reliable disinfection system as a second barrier. Some PWSs can avoid filtration by meeting special requirements including rigorous standards on their source water quality and watershed controls. These PWSs must still disinfect their water.

The following table summarizes the TT violations of the surface water treatment rules. In 2022, 22 PWSs incurred 32 treatment technique violations of the surface water treatment rules, such as failure to meet the turbidity requirements for filtration or failure to provide the required level of disinfection treatment.

Table 13: Summary of Surface Water Treatment Rules Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
SWTR	TT - Failure to filter	23	17
SWTR	TT- Residual Disinfectant Concentration	5	4
LT2ESWTR	TT –Failure to provide LT2 treatment	2	2
IESWTR	TT- Uncovered storage facility	2	1
Total		32	22 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant/rule listed, since a PWS may have violations of more than one violation category.

Figure 16 shows that 92% of PWSs that incurred SWTR TT violations in 2022 were noncommunity water systems and CWSs serving fewer than 500 connections.

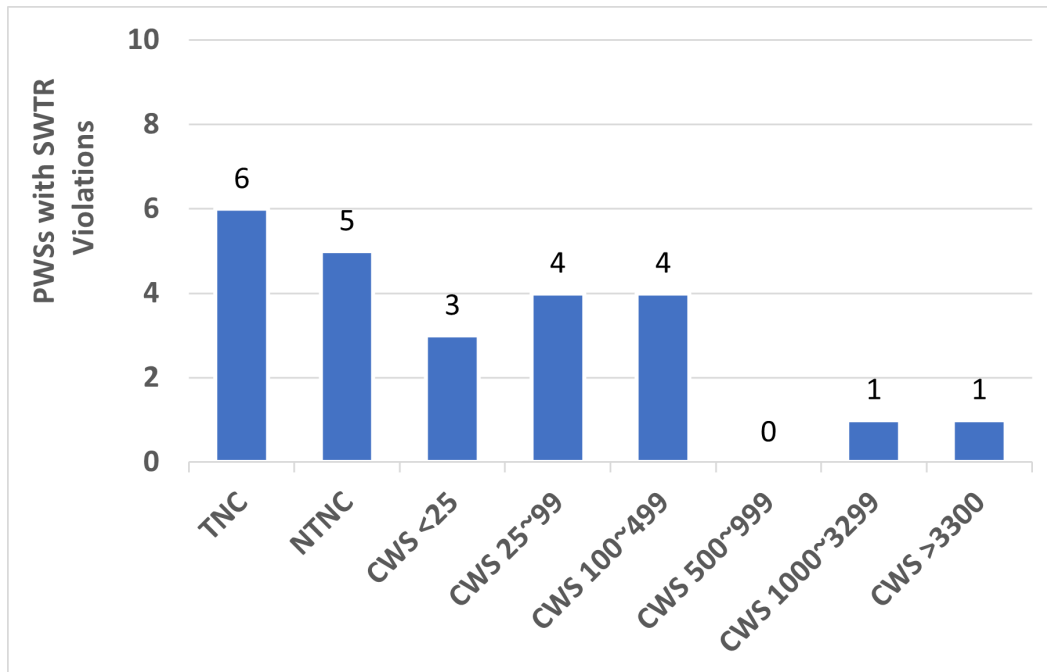


Figure 16: Number of PWSs with SWTR TT violations for each PWS type/CWS size.

3.1.8. Groundwater Rule (GWR)

All public water systems that use groundwater, such as wells or springs, must comply with the Groundwater Rule (GWR) to reduce the occurrence of disease associated with microorganisms in drinking water derived from groundwater. The GWR establishes a risk-based approach to target groundwater systems that are vulnerable to fecal contamination. Groundwater systems that are identified as being at risk of fecal contamination must take corrective action to reduce potential illness from exposure to microbial pathogens.

Special monitoring of the groundwater source for a fecal indicator microorganism must be conducted whenever a sample collected in the water distribution system pursuant to the rTCR is positive for total coliform (triggered source monitoring). California has chosen to use *E. coli* monitoring as the indicator of fecal contamination. A summary of MCL and TT violations of the GWR, such as failure to provide the required level of virus inactivation treatment, is provided below.

Table 14: Summary of Groundwater Rule Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
GWR	TT – Failure to address deficiency	0	0
GWR	TT – Failure to maintain microbiological treatment	0	0
GWR	TT – Failure to provide GWR treatment	0	0
Total		0	0

3.1.9. Lead and Copper Rule (LCR)

All CWSs and NTNCs must comply with the Lead and Copper Rule (LCR). The LCR requires that “first draw” tap samples be collected for lead and copper analysis from sites (typically single-family homes or multi-family residences for CWSs) that are at risk of containing lead pipes or copper pipe with lead solder, or which may be served by a lead service line. Samples are often collected by the occupants who live at the residences prioritized for sampling. PWSs are required to collect the samples from sites that meet the site selection criteria, send the samples to a certified laboratory for analysis, and report the results to DDW and the occupant of each residence sampled.

The action level for lead is 0.015 mg/L, and copper has an action level of 1.3 mg/L, based on the 90th percentile concentration in all samples collected during a sampling period. For each monitoring compliance period, PWSs must determine the 90th percentile lead and copper concentration calculated based on the results of all samples collected and determine whether the action levels for lead and copper are met. A finding that the 90th percentile lead or copper level is at a concentration above their respective action levels is not in itself a violation, but it triggers actions that PWSs must take - the

PWS must take specified steps to evaluate the need for corrosion control treatment, including conducting an optimal corrosion control treatment (OCCT) study and/or a source water treatment (SOWT) study, and implementation of study recommendations. A PWS must replace lead service lines if it fails to install treatment or if the treatment fails to control lead levels. For lead action level exceedances, PWSs must conduct public education on the effects of lead and the ways that the public can reduce lead exposure.

The following table summarizes the LCR TT violations recorded for 2022.

Table 15: Summary of Lead and Copper Rule Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
LCR	TT – Failure to install or demonstrate Optimal Corrosion Control (OCCT) or Source Optimal Water Treatment (SOWT)	1	1

Lead is generally present in drinking water as a result of internal corrosion of household plumbing or from lead fittings or service lines. It may also be present in source waters due to discharges from industrial manufacturers or erosion of natural deposits. Infants and children who drink water containing lead at concentrations above the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink water with lead above the action level over many years may develop kidney problems or high blood pressure.

The major sources of copper in drinking water are from internal corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage.

Figure 17 below shows the one (1) PWS with a lead and copper rule violation in 2022.

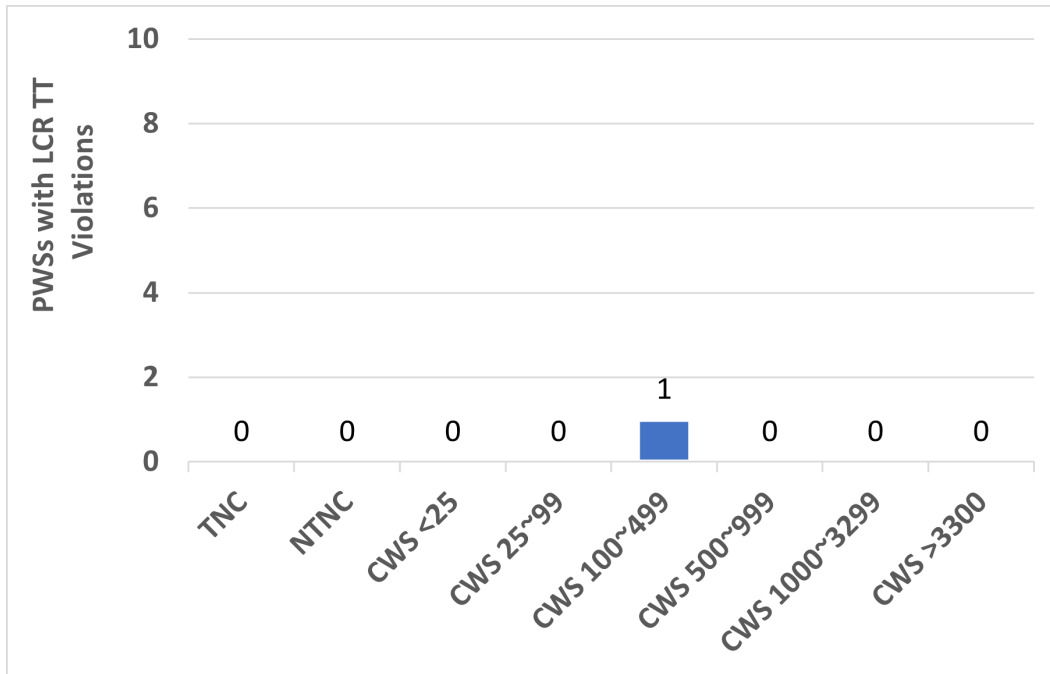


Figure 17: Number of PWSs with LCR TT violations for each PWS type/CWS size.

3.2. Federal Public Notification, Consumer Confidence Report, Monitoring, and/or Reporting Violations

3.2.1. Public Notification (PN)

Public water systems are required to notify the people that are served by the water system whenever a violation of a drinking water standard occurs. Public notices are required to be issued immediately, usually within 24 hours, for violations of MCLs for contaminants with acute (short term) health effects. Examples of these include violation of the *E. Coli* MCL, violation of the nitrate, nitrite, or combined nitrate and nitrite MCL, or violation of the perchlorate MCL. Public notices are issued for violations of drinking water standards for contaminants with chronic (long term) health effects, as soon as possible, usually within 30 days. Examples of these include violations of MCLs for arsenic, radioactivity, or organic chemicals. A violation occurs when there is a failure to provide the required notice to the public within the required time frame. There were thirty-two (32) violations for failure to provide the required notice to the public in 2022.

Table 16: Summary of Public Notification Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
Public Notice	Failure to provide public notification of a violation	32	17

3.2.2. Consumer Confidence Report Violations (CCR)

CWSs and NTNCs are required to provide their customers with a report each year of the quality of the water served by their water system during the prior calendar year. Each year’s Consumer Confidence Report (CCR) must also include information on the source(s) of drinking water, the levels of any detected contaminants, and compliance with drinking water regulations. Public water systems must describe any violations of the water quality standards in the CCR.

In 2022, 199 public water systems incurred violations for failure to prepare and distribute their CCR to their customers.

Table 17: Summary of Consumer Confidence Report Violations and PWS Counts

Rule	Violation Category	Number of Violations	Number of PWSs
CCR	Failure to prepare and deliver a CCR	268	199

Figure 18 shows that 94% of CCR violations were incurred by NTNCs and CWSs serving fewer than 500 connections.

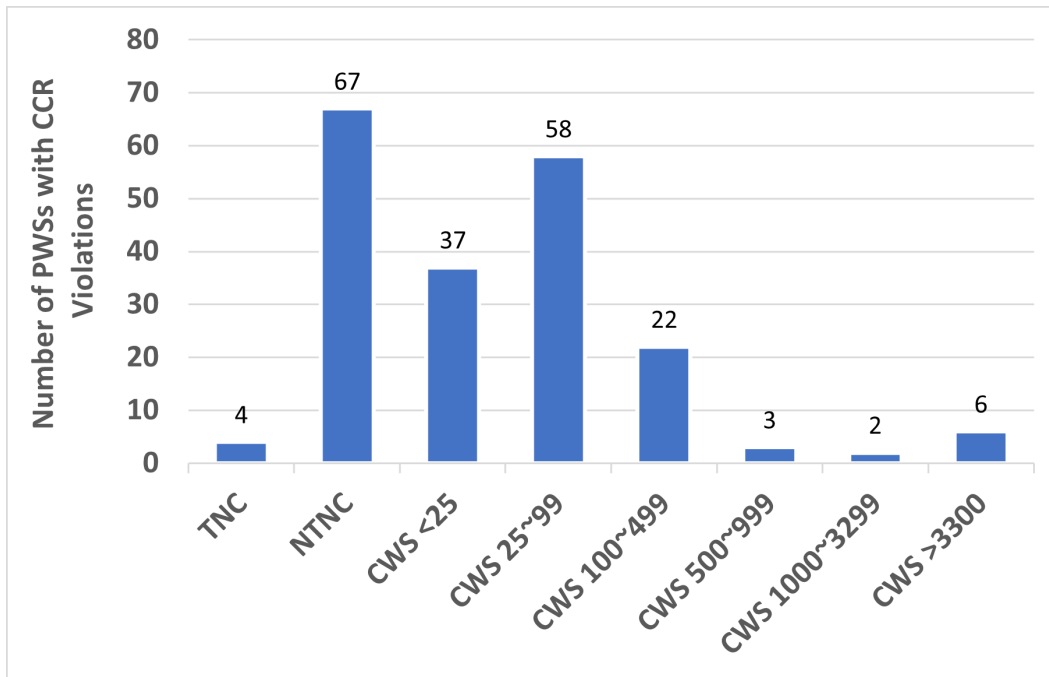


Figure 18: Number of PWSs with CCR violations for each PWS type and CWS size.

3.2.3. Monitoring and/or Reporting Violations Other Than Consumer Confidence Report and Public Notification

PWSs are required to monitor the water for specified contaminants at a required frequency and report the results to the State. Generally, the larger the population served by a water system, the more extensive and frequent are the monitoring and reporting (M/R) requirements. Finally, the State requires PWSs to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA among other items require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation, and the possibility of alternative water supplies during the violation.

In 2022, 1,023 PWSs incurred federal monitoring and/or reporting violations as shown in Table 18.

Table 18: Summary of Monitoring and/or Reporting Violations and PWS Counts by Rule

Rule	Violation Category	Number of Violations	Number of PWSs
DBPR	MON	86	58
GWR	MON	48	41
IOC	MON	179	146
LCR	MON	844	573
RAD	MON	4	3
rTCR	MON/RPT	426	309
SOC	MON	4	4
SWTR	MON/RPT	6	4
VOC	MON	4	2
Total		1,601	1,023 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each rule listed, since a PWS may have violations of more than one contaminant.

3.3. Variance and Exemption Violations (V/E)

The State Water Board is authorized under the federal SDWA to issue variances and exemptions from meeting drinking water standards to PWSs under special circumstances. Two (2) PWSs incurred a violation of a variance or exemption in 2022 as shown in Table 19.

Table 19: Summary of Variance and Exemption Violations and PWS Counts

Violation Category	Number of Violations	Number of PWSs
V/E	2	2

3.4. California-Specific Maximum Contaminant Level Violations

All CWSs and NTNCs are required to comply with primary drinking water standards contained in Title 22 California Code of Regulations. Contaminants with primary MCLs regulated by California but not regulated by USEPA include the following:

- Inorganic Contaminants:
 - Perchlorate
 - Aluminum
 - Nickel
- Synthetic Organic Contaminants:
 - Bentazon
 - Molinate
 - Thiobencarb
 - 1,2,3-Trichloropropane
- Volatile Organic Contaminants:
 - Methyl tert-butyl Ether (MTBE)
 - 1,1-Dichloroethane
 - 1,3-Dichloropropene
 - 1,1,2,2-Tetrachloroethane
 - Trichlorofluoromethane
 - 1,1,2-Trichloro-1,2,2-trifluoroethane

In 2022, about 355 violations were incurred by public water systems for failing to meet an MCL of a California-regulated contaminant. The table below summarizes the violations of a primary MCL or secondary MCL for California regulated contaminants (see section 1.8 for list of the contaminants).

Table 20: Summary of California-Specific MCL Standards Violations and PWS Counts

Contaminant/Rule	Violation Category	Number of Violations	Number of PWSs
1,2,3-TCP	Primary MCL	219	71
CA TCR	Monthly Total Coliform MCL	12	11
Perchlorate	Primary MCL	8	2
Aluminum	Secondary MCL	1	1
Iron	Secondary MCL	48	11
Manganese	Secondary MCL	65	22
TDS	Secondary MCL	2	2
Total		355	118 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant/rule listed, since a PWS may have violations of more than one violation category.

1,2,3-Trichloropropane (123TCP) - The State Water Board established a MCL for 123TCP of 0.005 ppt (ug/L) on December 14, 2017. All CWSs and NTNCs must comply with the 123TCP drinking water standards. These water systems started conducting initial monitoring of their sources in the first quarter of 2018.

123TCP is used as an industrial solvent, paint and varnish remover, and cleaning and degreasing agent. It is also a byproduct of the production of pesticides and other compounds and was an impurity and inactive ingredient of soil fumigant pesticides historically used in California. The major sources of 123TCP in drinking water include runoff/leaching of soil fumigant pesticides applied on agricultural lands and leaching from hazardous waste sites. Some people who drink water containing 123TCP in excess of the MCL over many years may have an increased risk of getting cancer.

In 2022, 71 PWSs incurred 219 violations of the 123TCP MCL. Figure 19 summarizes the number of CWSs and NTNCs that incurred one or more MCL violations for 123TCP in 2022. It shows that 80% of PWSs that incurred MCL violations were NTNCs or small CWSs serving fewer than 500 connections. A list of PWSs with 123TCP MCL violations in 2022 is included in Appendix C.

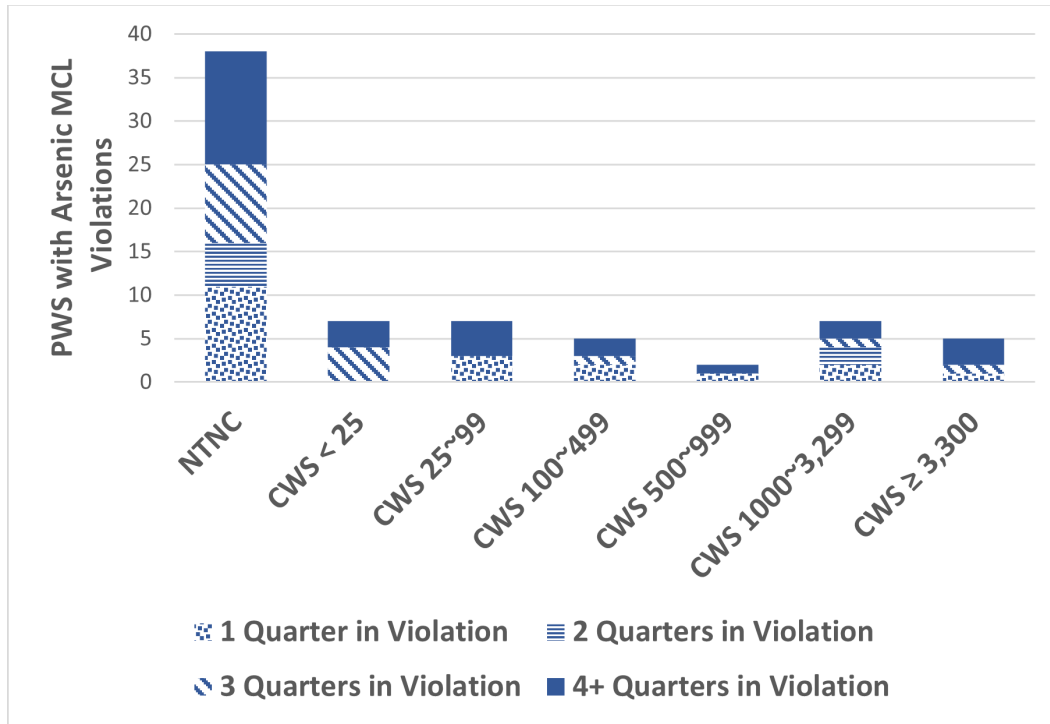


Figure 19: Number of PWSs with 123TCP MCL violations for each PWS type and CWS size.

Figure 20 shows a map of all counties with the number of PWSs in each county that exceeded the 123TCP MCL in 2022.

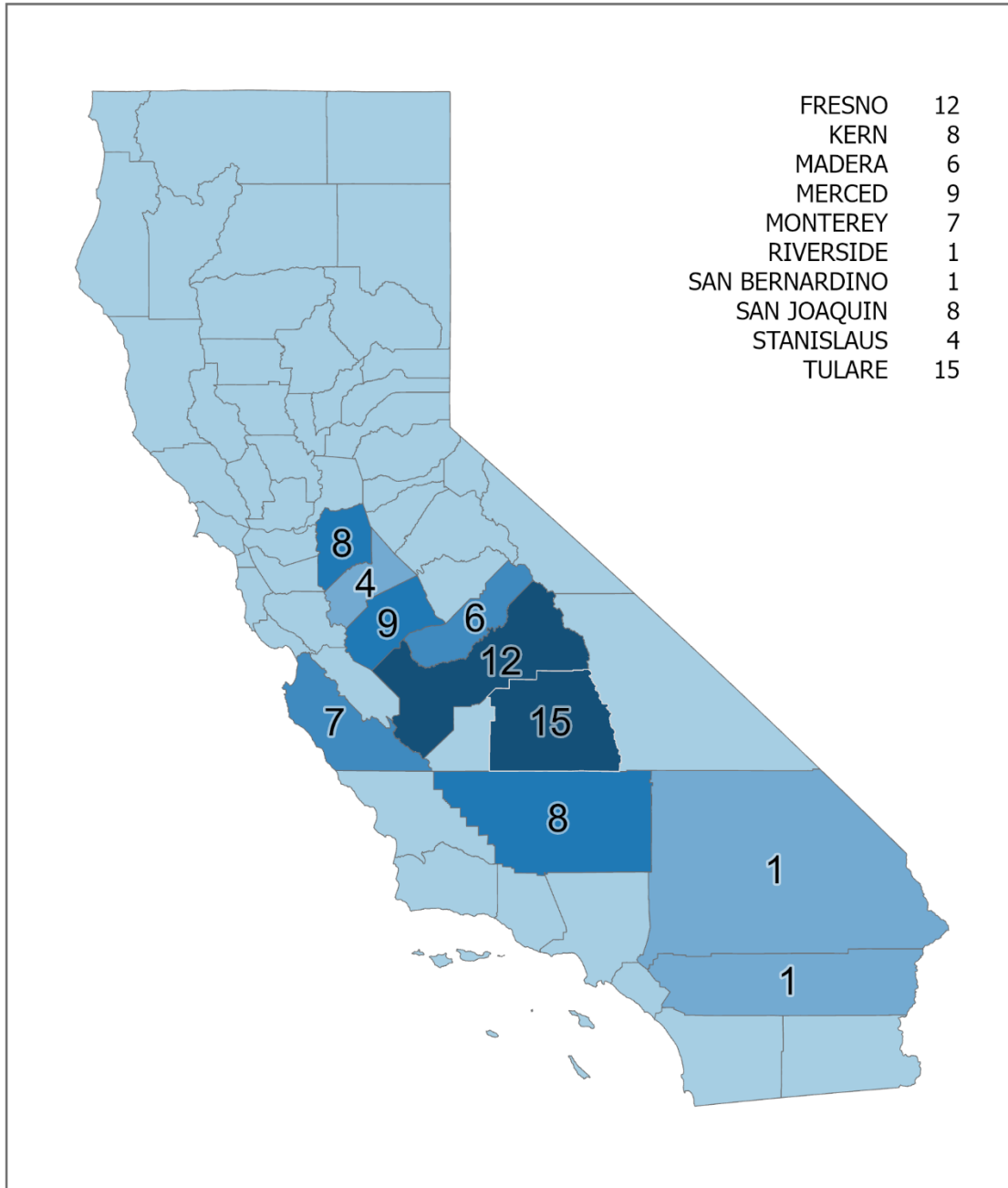


Figure 20: The number of PWSs with 123TCP MCL violations in each county.

Figure 21 shows the duration of 123TCP violations recorded in 2022. Twenty-eight (28) PWSs incurred 123TCP MCL violations in every quarter in 2022, compared to 52 PWSs in 2021. Two (2) of these PWSs are participating in funding projects with the State Water Board to address the 123TCP problem.

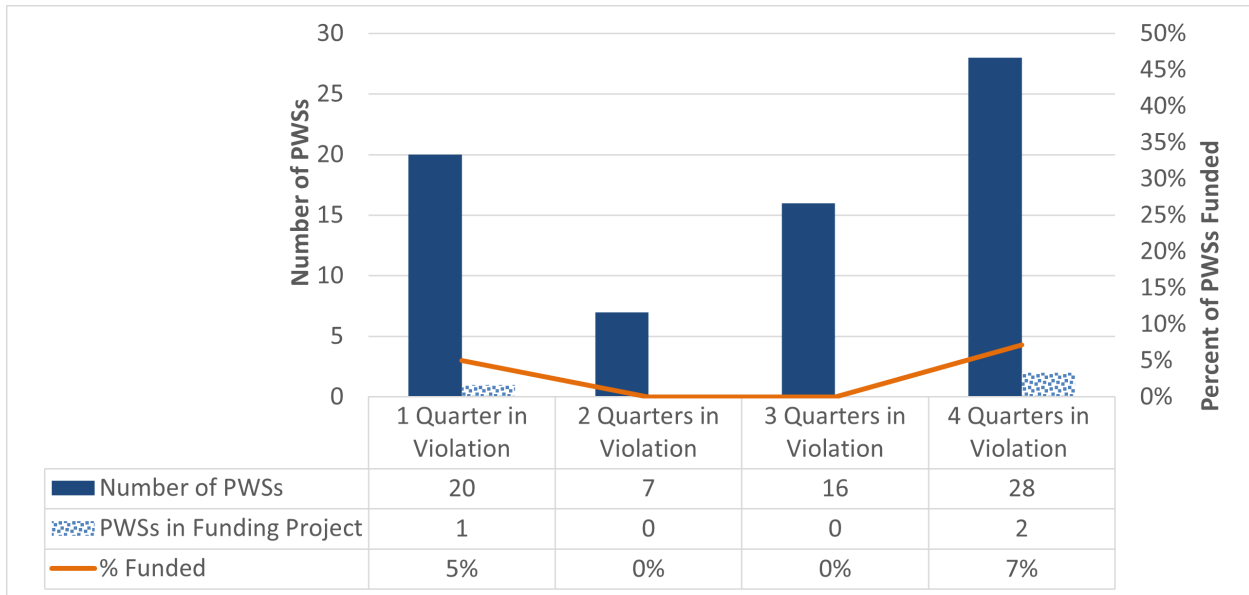


Figure 21: Number of PWSs with 123TCP MCL violations and the duration of the violation.

CA TCR - As discussed in Section 2.1 and Section 3.1.5, the Drinking Water Program tracked violations for the state TCR in the first half of 2021 and in previous years, because in July of 2021, California updated the state regulations to reflect the federal rTCR. Twelve (12) monthly TCR MCL violations were incurred by 11 PWSs in 2022.

Perchlorate - In 2022, eight (8) violations were incurred by two (2) PWSs for Perchlorate MCL. Both systems are in San Bernardino County.

The major sources of perchlorate in drinking water are solid rocket propellants, fireworks, explosives, flares, matches, and a variety of industries. Perchlorate usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that use, store, or dispose of perchlorate and its salts. Perchlorate's interference with iodide uptake by the thyroid gland can decrease production of thyroid hormone, which is needed for prenatal and postnatal growth and development, as well as for normal metabolism and mental function in the adult.

Aluminum - A secondary MCL violation was incurred by one PWS in 2022. The sources of aluminum in drinking water are erosion of natural deposits, and residue from some surface water treatment processes.

Iron - Secondary MCL violations were incurred by eleven (11) PWSs in 2022. The sources of iron in drinking water are leaching from natural deposits, and industrial wastes.

Manganese - Secondary MCL violations were incurred by 22 PWSs in 2022. The source of manganese in drinking water is leaching from natural deposits.

TDS (Total Dissolved Solids) - Two (2) PWSs incurred secondary MCL violations in 2022. TDS is a measure of all dissolved substances in water, including organic and suspended particles.

3.5. State-Specific Monitoring and/or Reporting and Other Violations

There are 512 violations of California-specific monitoring, reporting and other violations in 2022, as listed in Table 21.

Table 21: Summary of California-Specific Monitoring and/or Reporting and Other Violations by Rule

Rule	Violation Category	Number of Violations	Number of PWSs
Secondary Standards	MON	3	1
California Total Coliform Rule (TCR)	MON	30	23
Primary Inorganic Contaminants (IOC)	MON	36	11
Synthetic Organic Contaminants (SOC)	MON	25	25
Volatile Organic Contaminants (VOC)	MON	0	0
Cross-Connection Control (CC)	OTHR	16	16
Annual Report (AR)	RPT	138	124
Permit, operating without a permit (PT)	OTHR	14	13
Operator Certification (OP)	OTHR	45	31
Reporting Requirement (RR)	RPT	15	15
Treatment Technique (TT)	TT	2	12
Permit, violation of provision (PP)	OTHR	96	61
Point-of-use/Point-of-entry (POU/POE)	OTHR	4	1
Waterworks Standards (WW)	OTHR	88	56
Total		512	355 (a)

(a) The total number of PWSs is less than the sum of the PWSs of each contaminant/rule listed, since a PWS may have violations of more than one violation category.

Chapter 4. Enforcement Activities

DDW and LPAs take enforcement actions when a PWS violates an MCL or treatment technique or fails to conduct the required monitoring and reporting activities.

Enforcement action is an essential element of the DDW's regulatory program to bring all public water systems into full compliance with drinking water standards and regulations to ensure that the public receives a safe and reliable supply of drinking water. Carrying out an enforcement program is a requirement of the primacy delegation from USEPA. DDW may take a variety of enforcement actions depending on the type of violation and recurrence of a violation that includes both formal and informal enforcement actions. Issuance of progressively more stringent enforcement actions is the means used to bring a non-responsive water system into compliance with drinking water standards.

DDW's enforcement strategy for public water systems that violate a primary drinking water MCL includes issuance of formal enforcement actions in a timely manner. The California Health and Safety Code (CHSC) section 116655(a) specifies that whenever the State Water Board determines that any person has violated or is violating the California SDWA or any permit, regulation, or standard issued or adopted pursuant to the California SDWA, the director may issue an order doing any of the following:

- 1) Directing compliance forthwith;
- 2) Directing compliance in accordance with a time schedule set by the State Water Board;
- 3) Directing that appropriate preventive action be taken in the case of a threatened violation.

Per CHSC section 116655(b), an order that DDW issues may include, but not be limited to, the following requirements:

- 1) That the existing plant, works, or system be repaired, altered or added to;
- 2) That purification or treatment works be installed;
- 3) That the source of water supply be changed;
- 4) That no additional service connection be made to the system;
- 5) That the water supply, the plant, or the system be monitored;
- 6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the State Water Board.

Formal enforcement actions available to DDW include citations, compliance orders, permit amendments, and revocation or suspension of an existing operating permit. The CHSC also authorizes assessing civil penalties up to \$25,000 per day for each day a drinking water standard violation occurs or placing a water system into receivership.

DDW has implemented an enforcement strategy that includes the requirement for the PWS to submit a compliance plan within a short time frame that achieves compliance within a specified time period. Failure to achieve compliance within that time period may result in escalated enforcement, including issuance of civil penalties.

4.1. Enforcement Actions Taken

In 2022, the Drinking Water Program issued 2,940 formal enforcement actions. An enforcement action can be a notice of violation, a citation, or a compliance order. An enforcement action can address one or more violations and prescribe public notification requirements as necessary corrective actions and deadlines that the public water system must meet, in order to return to compliance (RTC).

Figures 22 and 23 show the number of federal and state violations, respectively, that were addressed by an enforcement action. Of the 3,580 violations (combined federal and state violations) that occurred in 2022, records show that over 82% were addressed with formal enforcement actions. The remaining violations were associated with an informal enforcement action, which is considered unaddressed and were mostly state regulated 1,2,3-TCP, the federally regulated Lead and Copper Rule violations, and failure to comply with California Waterworks Standards (WW).

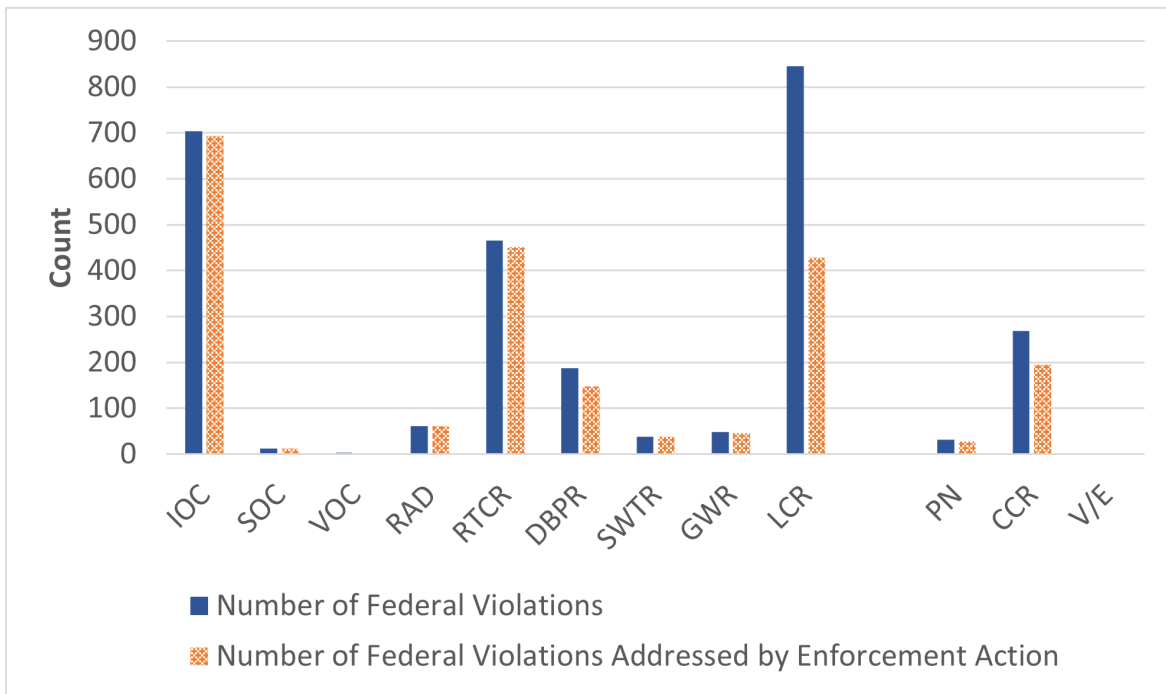


Figure 22: Number of federal violations that were addressed with an enforcement action.

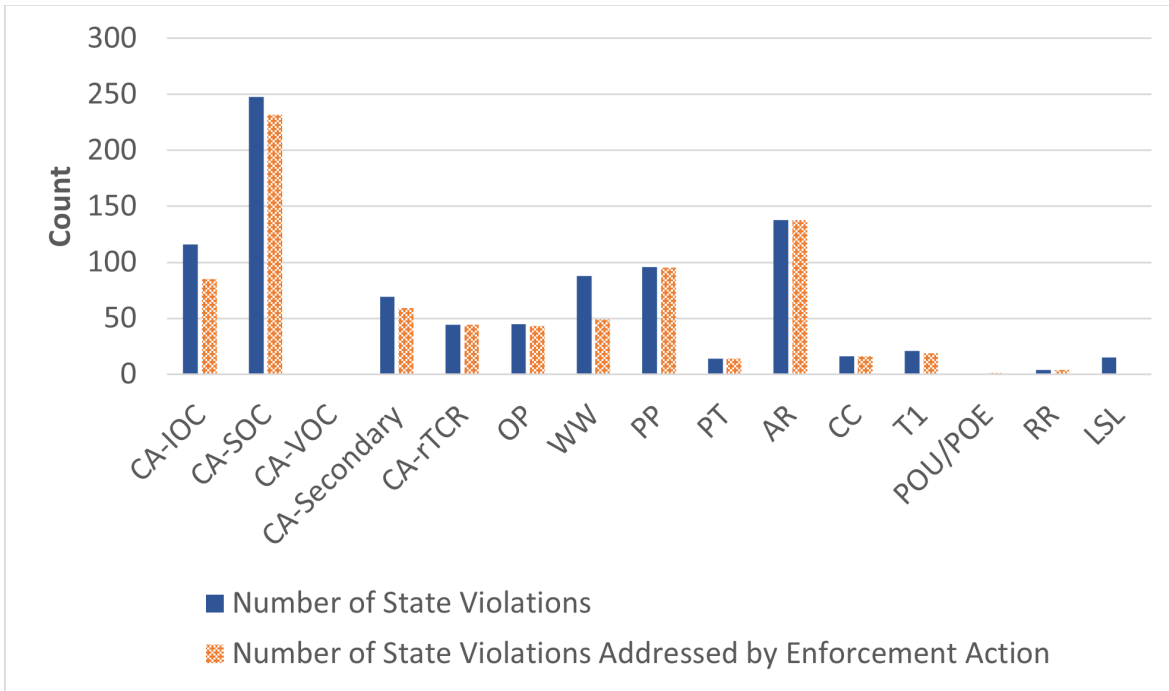


Figure 23: Number of state violations that were addressed with an enforcement action.

4.2. Enforcement Targeting Tool (ETT)

In 2009, the USEPA implemented a new approach designed to identify public water systems that are in significant non-compliance. An Enforcement Targeting Tool (ETT) was developed to prioritize public water systems that have incurred health-based violations and those that show a history of violations across multiple rules. An ETT score is calculated based on points assigned to the various types of violations, the severity of the violation (e.g., higher points are assigned for violations of drinking water standards associated with acute health effects than those associated with chronic health effects) and the duration of the violation. Public water systems with an ETT score of 11 or greater are prioritized for evaluation of enforcement strategy and resources required to ensure a return to compliance.

The DDW coordinates with the USEPA to track the ETT scores and has reduced the number of PWSs that are identified as significant non-compliers. It was found that many violation records were not routinely updated after a PWS has returned to compliance, and this contributed to high ETT scores. DDW continues to work to ensure accurate and timely updates of inventory data for violations and enforcement actions, so that the ETT score accurately reflects the PWSs that are significant non-compliers.

4.3. Return to Compliance

When a PWS exceeds a drinking water standard, the Drinking Water Program issues enforcement actions that prescribe what must be done in order for the PWS to return to compliance (RTC). The criteria for when RTC is achieved may depend on the rule, type of violation, and contaminant. As an example, for an MCL violation of a chemical with chronic health effects, RTC is achieved when the PWS stops providing water that exceeds the MCL, issues the public notification, and submits the information required in the enforcement action, such as a corrective action plan. PWSs may inactivate the source that exceeds the MCL, provide an alternate source of water that complies with drinking water standards, or provide reliable treatment such that the treated source of supply complies with the MCL. Depending on factors such as the technical, managerial, and financial capacity (TMF) and resiliency of the public water system, the MCL violation can be resolved in a matter of days or it can take years. PWSs that remain out of compliance with the MCL are typically required to provide regular public notification and conduct increased monitoring until such time that the PWS returns to compliance with the MCL. Failures to conduct monitoring and public notification resulting from an MCL violation are also considered violations. Many violations on record are not consistently updated in the database even though the violations may have been resolved. DDW continues to work on ways to efficiently conduct data maintenance activities.

Figure 24 shows the number of PWSs of each classification and CWS size that have returned to compliance in 2022 following a federal MCL/TT violation that was incurred in 2022 or prior years. This includes PWSs that are newly out of compliance in 2022; and PWSs that have been and continue to be out of compliance from previous years. Overall, 20% of PWSs that incurred an MCL/TT violation returned to compliance in 2022.

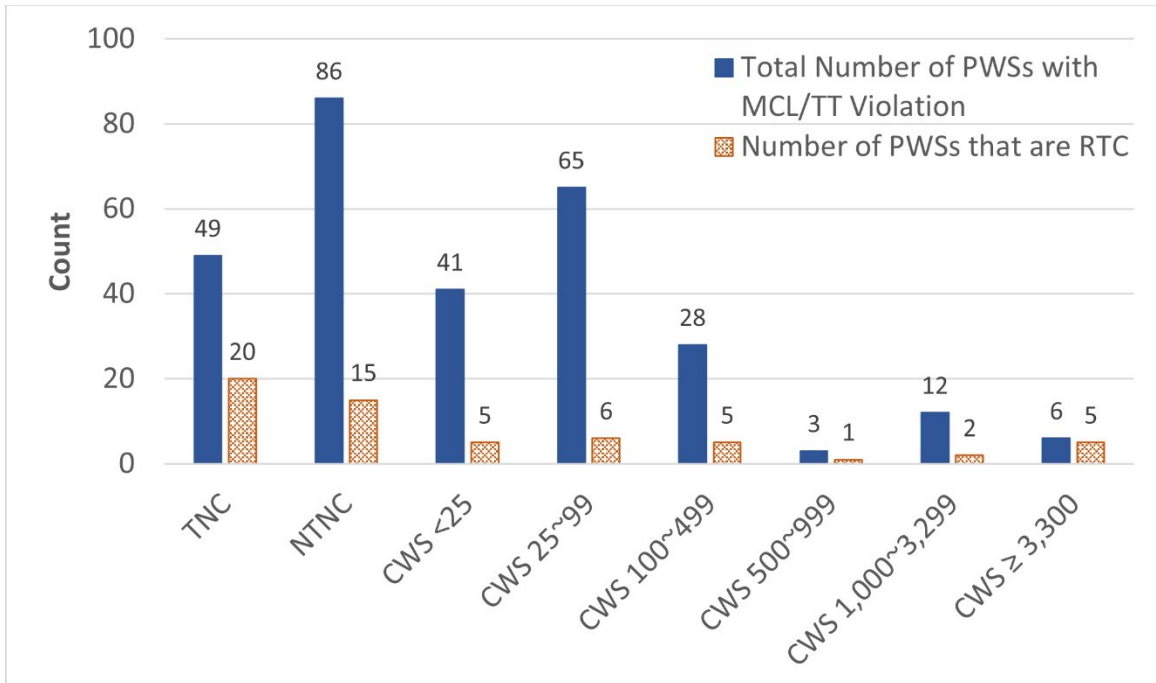


Figure 24: Number of PWSs that returned to compliance in 2022 for a federal MCL/TT violation.

For monitoring and reporting violations, the criteria for when RTC is achieved is generally when the delinquent samples are collected, when the report is submitted, or when the results reported to the State Water Board. Depending on the rule, RTC can be achieved within a month; for rules such as the Lead and Copper Rule, where sampling must occur in specific periods of the year, delinquent samples may not be collected for several months.

Figure 25 below shows the number of PWSs of each classification and CWS size that have returned to compliance in 2022 following a federal monitoring or reporting violation that was incurred in 2022 or prior years. This includes PWSs that are newly out of compliance in 2022; and PWSs that have been and continue to be out of compliance from previous years. Overall, 60% of PWSs that incurred a monitoring/reporting violation returned to compliance in 2022.

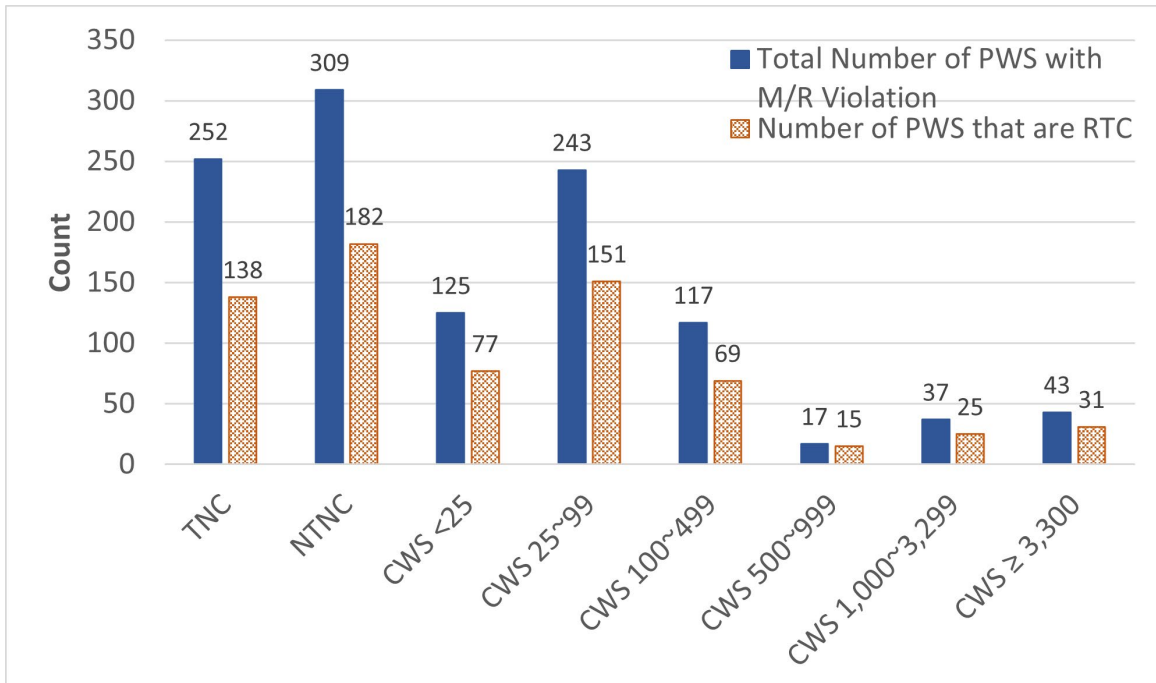


Figure 25: Number of PWSs that returned to compliance in 2022 for federal M/R violations.

The rate of RTC is generally higher for monitoring and reporting violations than MCL/TT violations. Often the SDWIS-State records are not regularly updated by District/LPA staff to reflect when a PWS has returned to compliance. DDW has implemented a data clean-up report to correct data validation errors and update those records in SDWIS-State as needed to have an accurate compliance status. DDW continues to work to improve data procedures and data systems in order to ensure timely reporting of accurate compliance information for PWSs in SDWIS-State.

Chapter 5. Conclusion

The State Water Board is the primacy agency responsible for the administration and enforcement of the SDWA requirements in California. The implementation of the program includes a range of activities and authorities including issuing operating permits, conducting inspections, monitoring for compliance with regulations, and taking enforcement action to compel compliance when violations are identified.

Overall, water systems in California have a high rate of compliance with drinking water standards. However, many public water systems continue to incur water quality violations as a result of contamination of drinking water sources. Arsenic and nitrate continue to impact communities in the state.

The State Water Board continues to track compliance, take enforcement actions to address violations, provide technical assistance to public water systems to address violations, provide funding assistance to public water systems that are capable of undertaking planning or construction projects in order to address violations, and compel public water systems that do not have adequate technical, managerial, and financial capacity to provide reliable and safe drinking water to its customers to consolidate with other public water systems that are able to provide safe drinking water.

5.1. Drinking Water Program Compliance Activities for 2022

DDW has planned a number of activities and projects that will ultimately improve the reporting of violations and enforcement actions, improve data quality, as well as assist in returning PWSs to compliance after a violation has occurred.

DDW began updating the 2020 Safe Drinking Water Plan in 2018 and released the draft 2020 Safe Drinking Water Plan for public comment and held multiple public workshops in 2021. The 2020 Safe Drinking Water Plan was revised based on the comments received and was approved by the Board in September 2021. The Safe Drinking Water Plan is a comprehensive assessment of drinking water in California which covers the quality and safety, types of problems that need to be addressed, overall health risks, current and projected costs, and current regulatory programs. The plan contains specific recommendations to address issues identified and improve the overall quality and safety of California's drinking water. More information about the 2020 Safe Water Plan and a link to the document can be found at

https://www.waterboards.ca.gov/drinking_water/safedrinkingwaterplan/.

DDW continues to implement initiatives to address unsustainable public water systems, including mandatory water system consolidations, funding and installing water system administrators, and preventative measures to stop the establishment of unsustainable PWSs. The State Water Board is currently utilizing Safe and Affordable Funding for Equity and Resilience (SAFER) program to identify water systems that are failing or at-risk, create new policy tools to address these systems and provide funding and

expertise to support both interim and long-term solutions. Information about SAFER is available on the webpage here: <https://www.waterboards.ca.gov/safer/>.

The DDW's Quality Assurance Section (QAS) is currently under the DDW Resiliency and Data Branch and continues to improve the quality of data that the DDW receives from laboratories and PWSs, and the quality of the inventory data that the DDW maintains in SDWIS-State. Within QAS, the Data Management Unit develops tools to increase efficiency in routine data cleanup activities to ensure data quality, the Data Support Unit facilitates information sharing within the DDW, with water systems, and with the public, and the Needs Analysis Unit works to identify at-risk PWSs and develop analytical tools for proactive solutions.

DDW continues to work on a multi-year project to modernize the SDWA compliance data management system and integrate a multitude of compliance tracking tools into a single system.

5.2. Obtaining a Copy of the Report

A copy of this Annual Compliance Report is available from DDW's webpage at https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Publications.html. You may also contact DDW at (916) 449-5577 to obtain a copy of the report.

5.3. SAFER Dashboard

The State Water Board released the SAFER Dashboard in 2022 to display the current list of Failing and At-Risk public water systems and the results of the Risk Assessment for public water systems. The Dashboard displays risk drivers for public water systems, incorporating data from the State Water Board, the Department of Water Resources, and the Office of Environmental Health Hazard Assessment. The Dashboard is used by internal staff and members of the public to identify and explore Failing and At-Risk public water systems and how they perform in the following risk categories: water quality, accessibility, affordability, and TMF (technical, managerial, and financial) capacity. The Dashboard can be viewed at:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/saferdashboard.html.

Glossary of Terms

Term	Description
Public Water System (PWS)	A system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves at least 25 people for at least 60 days each year.
Community water system (CWS)	A water system serving facilities such as cities, towns, mobile home parks.
Nontransient noncommunity water system (NTNC)	A water system serving facilities such as schools, factories or other facilities that serve the same group of non-resident users at least 180 days out of the year.
Transient noncommunity water system (TNC)	A water system serving facilities such as restaurants, parks, rest stops, campgrounds and other facilities that serve a transient population for at least 60 days out of the year.
Primary Drinking Water Standards	MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
Maximum Contaminant Level (MCL)	The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the public health goals (PHGs) Maximum Contaminant Level Goals (MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
Maximum Residual Disinfectant Level (MRDL)	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Treatment Techniques (TT)	A required process intended to reduce the level of a contaminant in drinking water in lieu of an MCL. For example, treatment techniques have been established for the treatment of surface waters in order to control the levels of viruses, bacteria, and other pathogens.
Variances and Exemptions	State Water Board permission to exceed an MCL or not comply with a TT under certain conditions.
Monitoring and Reporting (M/R)	A water system is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. A monitoring violation occurs when a water system fails to have its water tested as required

	or fails to report test results correctly to the regulatory agency.
Secondary Drinking Water Standards	MCLs for contaminants for aesthetics effects, to protect the odor, taste, and appearance of drinking water. Contaminants with secondary MCLs (SMCL) are not considered to present a risk to human health at the SMCL.
Significant Monitoring or Reporting Violations	For this report, significant monitoring or reporting violations are defined as when no samples were taken, or no results were reported.
Public Notification	The Public Notification Rule requires all PWSs to notify their consumers any time a PWS violated a national primary drinking water regulation or has a situation posing a risk to public health. The time period that a PWS must notify the public depends upon the risk posed by the violation or situation. Notices must be provided to persons served (not just billing consumers).
Significant Public Notification Violations	For this report, a significant public notification violation occurs when a PWS completely fails to notify its consumers that the PWS violated a national primary drinking water regulation or had a situation posing a risk to public health.
Consumer Confidence Report (CCR)	All community water systems and nontransient noncommunity water systems are required to deliver to their customers an annual CCR, summarizing water quality data collected during the year. The report is to include educational material, provide information on the source water(s), levels of any detected contaminants, and any compliance issues with the drinking water regulations.
Significant Consumer Notification Violations	For this report, a significant consumer notification violation is incurred if a community or nontransient noncommunity water system completely fails to provide its customers the required annual CCR.
pCi/L	Picocuries per liter, a measure of radioactivity
ppm	Parts per million, equivalent to about 32 seconds out of a year. Same as milligrams per liter (mg/L).
ppb	Parts per billion, equivalent to about three seconds out of a century. Same as micrograms per liter (ug/L).

Appendix A: Summary of MCL Violations for Arsenic by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
COLUSA	Arsenic	CA0600008	COLUSA CO. WWD #1 - GRIMES	305	4
CONTRA COSTA	Arsenic	CA0706004	OAKLEY MUTUAL WATER COMPANY	170	4
CONTRA COSTA	Arsenic	CA0707507	WILLOW PARK MARINA	380	4
CONTRA COSTA	Arsenic	CA0707573	DELTA MUTUAL WATER COMPANY	225	4
CONTRA COSTA	Arsenic	CA0707589	BELLA VISTA WATER SYS	93	4
FRESNO	Arsenic	CA1000577	DUNLAP LEADERSHIP ACADEMY	44	1
FRESNO	Arsenic	CA1009051	CANTUA CREEK VINEYARDS, IV, LLC.	52	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
FRESNO	Arsenic	CA1010039	CARUTHERS COMM SERV DIST	2503	1
IMPERIAL	Arsenic	CA1300555	MITCHELLS CAMP FAMILY ASSOC.	175	1
KERN	Arsenic	CA1500424	LANDS OF PROMISE MWC	174	4
KERN	Arsenic	CA1500436	HUNGRY GULCH MWC	74	4
KERN	Arsenic	CA1500442	SUNSET APARTMENTS WS	31	4
KERN	Arsenic	CA1500455	WILLIAM FISHER MEMORIAL WATER COMPANY	56	4
KERN	Arsenic	CA1500461	FOUNTAIN TRAILER PARK WATER	68	4
KERN	Arsenic	CA1500571	KERN MOBILE ESTATES LLC	73	4
KERN	Arsenic	CA1500525	LAKEVIEW RANCHOS MUTUAL WATER COMPANY	120	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
KERN	Arsenic	CA1502068	DI GIORGIO SCHOOL WATER SYSTEM	238	4
KERN	Arsenic	CA1502231	ROSAMOND SCHOOL WATER SYSTEM	940	2
KERN	Arsenic	CA1502569	FIRST MUTUAL WATER SYSTEM	35	4
KERN	Arsenic	CA1510016	RAND COMMUNITIES WATER DISTRICT	303	4
KERN	Arsenic	CA1510052	NORTH EDWARDS WD	944	4
KINGS	Arsenic	CA1600050	CENTRAL VALLEY MEAT CO INC.	525	1
KINGS	Arsenic	CA1600605	BAKER COMMODITIES INC.	47	4
KINGS	Arsenic	CA1600609	NETTO AG INC.	50	4
MADERA	Arsenic	CA2000506	SIERRA LINDA MUTUAL WATER CO.	200	6

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MADERA	Arsenic	CA2000527	YOSEMITE FORKS EST MUTUAL	110	4
MADERA	Arsenic	CA2000534	LEISURE ACRES MUTUAL WATER COMPANY	45	1
MADERA	Arsenic	CA2000538	CEDAR VALLEY MUTUAL WATER CO.	137	4
MADERA	Arsenic	CA2000552	MD 24 TEAFORD MEADOW LAKES	150	7
MADERA	Arsenic	CA2000561	MD 08 NORTH FORK WATER SYSTEM	264	4
MADERA	Arsenic	CA2000737	MD 42 STILL MEADOW	100	8
MADERA	Arsenic	CA2000866	AGRILAND FARMING	60	4
MERCED	Arsenic	CA2400335	OLIVARES FARMS WATER SYSTEM	30	4
MONTEREY	Arsenic	CA2700536	CORRAL DE TIERRA ESTATES WC	45	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MONTEREY	Arsenic	CA2700612	LAGUNA SECA WC	162	4
MONTEREY	Arsenic	CA2700702	PRUNEDALE MWC	277	2
MONTEREY	Arsenic	CA2701221	WASHINGTON SCHOOL WS	25	3
MONTEREY	Arsenic	CA2701926	MORO RD WS #09	210	3
MONTEREY	Arsenic	CA2702009	LAGUNA SECA RECREATION WS	10040	4
MONTEREY	Arsenic	CA2702550	GRANGE HALL WS	25	5
RIVERSIDE	Arsenic	CA3301380	SAINT ANTHONY TRAILER PARK	340	3
RIVERSIDE	Arsenic	CA3301990	AMEZCUA - GARCIA WATER	316	3
SAN BENITO	Arsenic	CA3500581	RANCHO SAN JOAQUIN MWC	914	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SAN BENITO	Arsenic	CA3500919	WILLIS CONSTRUCTION WS	56	1
SAN BERNARDINO	Arsenic	CA3600025	BAR-LEN MWC	124	4
SAN BERNARDINO	Arsenic	CA3600504	KNOLL ENTERPRISES	500	4
SAN BERNARDINO	Arsenic	CA3601130	CEMEX CALIF CEMENT LLC AV	100	4
SAN JOAQUIN	Arsenic	CA3900579	CENTURY MOBILE HOME PARK	50	3
SAN JOAQUIN	Arsenic	CA3901169	MUSD-NILE GARDEN SCHOOL	804	3
SAN JOAQUIN	Arsenic	CA3901213	SUNNY ROAD WATER SYSTEM	34	4
SAN JOAQUIN	Arsenic	CA3901418	AUSTIN INDUSTRIAL PARK WATER SYSTEM	25	4
SAN JOAQUIN	Arsenic	CA3901486	CENTRAL VALLEY BAPTIST CHURCH WS	556	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SAN JOAQUIN	Arsenic	CA3902189	GICO MANAGEMENT	60	4
SAN LUIS OBISPO	Arsenic	CA4000631	ALMIRA WATER ASSOCIATION	40	5
SAN LUIS OBISPO	Arsenic	CA4000750	RIM ROCK WATER COMPANY	55	6
SANTA BARBARA	Arsenic	CA4200814	JONATA HOMEOWNERS ASSOCIATION	35	1
SANTA BARBARA	Arsenic	CA4200822	SANTA RITA WATER	59	4
STANISLAUS	Arsenic	CA5000033	COBLES CORNER	50	4
STANISLAUS	Arsenic	CA5000218	COUNTRY VILLA APTS	60	4
STANISLAUS	Arsenic	CA5000316	HAKAM MISSON	45	1
STANISLAUS	Arsenic	CA5000498	GOLDEN STATE PFT PROPERTIES LLC	35	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
STANISLAUS	Arsenic	CA5010008	HUGHSON, CITY OF	7000	4
TULARE	Arsenic	CA5400754	SOUTH KAWEAH MUTUAL WATER COMPANY	381	3
TULARE	Arsenic	CA5403074	LACTALIS HERITAGE DAIRY	200	1
YOLO	Arsenic	CA5700508	OLD SUGAR MILL WINERY	50	3

Appendix B: Summary of MCL Violations for Nitrate by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
FRESNO	NITRATE	CA1000554	FCSA #10A/ MANSIONETTE ESTATES	81	1
KERN	NITRATE	CA1500393	RAINBIRD VALLEY MUTUAL WATER COMPANY	238	5
KERN	NITRATE	CA1500401	METTLER COUNTY WATER DISTRICT	157	3
KERN	NITRATE	CA1500458	R.S. MUTUAL WATER COMPANY	67	1
KERN	NITRATE	CA1500464	LAKE ISABELLA KOA CAMPGROUND	280	4
KERN	NITRATE	CA1500584	GOOSELAKE WATER COMPANY	90	3
KERN	NITRATE	CA1502012	HECK CELLARS WATER SYSTEM	47	3
KERN	NITRATE	CA1503688	GRIMMWAY FARMS - DAVID ROAD	114	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MERCED	NITRATE	CA2400245	DELHI KINGDOM HALL	452	1
MERCED	NITRATE	CA2400334	CALIFORNIA SWEET POTATO GROWERS COOP	26	5
MONTEREY	NITRATE	CA2700558	PENTECOSTAL WS	29	2
MONTEREY	NITRATE	CA2700665	OAK HEIGHTS W & R CO INC	105	2
MONTEREY	NITRATE	CA2700771	SPRINGFIELD WATER COMPANY	200	5
MONTEREY	NITRATE	CA2700772	STRUVE RD WS #02	166	1
MONTEREY	NITRATE	CA2701036	APPLE AVE WS #03	60	5
MONTEREY	NITRATE	CA2701040	MCCOY RD WS #05	72	5
MONTEREY	NITRATE	CA2701063	RIVER RD WS #25	65	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MONTEREY	NITRATE	CA2701241	ENCINAL RD WS #01	91	5
MONTEREY	NITRATE	CA2701726	SPENCE RD WS #05	25	2
MONTEREY	NITRATE	CA2701820	CORDA RD WS	54	1
MONTEREY	NITRATE	CA2702259	LHOIST NORTH AMERICA WS	68	5
MONTEREY	NITRATE	CA2702409	EL CAMINO WC INC	133	1
MONTEREY	NITRATE	CA2702453	MARINA LANDFILL WS	55	3
MONTEREY	NITRATE	CA2702608	THIMIO MWC	60	4
MONTEREY	NITRATE	CA2702616	ALTMAN PLANTS WS #02 - SPENCE 20140	25	2
MONTEREY	NITRATE	CA2702830	OP MURPHY & SONS WS	25	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MONTEREY	NITRATE	CA2704623	TOP INDUSTRIES WS	50	4
MONTEREY	NITRATE	CA2708852	FAITH AND FAMILY FARMS WS	25	3
NAPA	NITRATE	CA2800583	WELCOME GRANGE HALL	200	1
RIVERSIDE	NITRATE	CA3301330	INDIAN OAKS TRAILER PARK	90	4
RIVERSIDE	NITRATE	CA3301482	ORTEGA OAKS RV PARK & CAMPGROUND	180	1
RIVERSIDE	NITRATE	CA3301529	RAMONA WATER COMPANY	250	3
RIVERSIDE	NITRATE	CA3302060	CAHUILLA MOUNTAIN MARKET & CAFE	50	2
SAN BENITO	NITRATE	CA3500804	BAYER RESEARCH AND DEVELOPMENT LLC	35	1
SAN BENITO	NITRATE	CA3500929	REITER BERRY WATER SYSTEM	96	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SAN BERNARDINO	NITRATE	CA3600297	GORDON ACRES WATER CO	200	2
SAN BERNARDINO	NITRATE	CA3600391	HILLCREST MOBILE ESTATES	493	5
SAN BERNARDINO	NITRATE	CA3600768	INSTITUTE OF MENTAL PHYSICS	300	5
SAN BERNARDINO	NITRATE	CA3601089	GEN AMERICAN TRANS CORP	65	4
SAN DIEGO	NITRATE	CA3700018	CAMPO ELEMENTARY SCHOOL	300	6
SAN JOAQUIN	NITRATE	CA3900578	ST FRANCIS MOTEL	40	3
SAN JOAQUIN	NITRATE	CA3900799	OLDE TOWNE	25	1
SAN JOAQUIN	NITRATE	CA3900974	STAR MOTEL	27	4
SAN JOAQUIN	NITRATE	CA3901080	ALPINE MEATS INC.	270	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SAN JOAQUIN	NITRATE	CA3901378	SAN-I-PAK INC.	25	3
SAN JOAQUIN	NITRATE	CA3901474	FREMONT ONE	39	4
SAN JOAQUIN	NITRATE	CA3901481	PNP STOCKTON #80	25	5
SAN JOAQUIN	NITRATE	CA3901486	CENTRAL VALLEY BAPTIST CHURCH WS	556	5
SAN JOAQUIN	NITRATE	CA3910014	SAN JOAQUIN COUNTY-RAYMUS VILLAGE	1082	2
SAN LUIS OBISPO	NITRATE	CA4000216	TANK FARM BUSINESS PARK	45	4
SAN LUIS OBISPO	NITRATE	CA4000563	HIGUERA APARTMENTS	30	6
SAN LUIS OBISPO	NITRATE	CA4000655	RINCONADA TRAILER PARK	10	1
SAN LUIS OBISPO	NITRATE	CA4000732	CARRISA PLAINS ELEMENTARY	65	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SANTA CLARA	NITRATE	CA4310004	CITY OF GILROY	58108	1
SANTA CRUZ	NITRATE	CA4400905	KITAYAMA BROTHERS	50	1
SONOMA	NITRATE	CA4900568	VALLEY FORD WATER ASSOCIATION	61	1
STANISLAUS	NITRATE	CA5000076	CATFISH CAMP	36	2
STANISLAUS	NITRATE	CA5000189	NMIP FIRE & WATER SYSTEM, LLC	300	5
STANISLAUS	NITRATE	CA5000295	SHILOH SCHOOL DISTRICT	105	5
STANISLAUS	NITRATE	CA5000372	STORER TRANSPORTATION	40	4
STANISLAUS	NITRATE	CA5000409	SHILOH-PARADISE BASEBALL FOR YOUTH	26	5
STANISLAUS	NITRATE	CA5000411	MCHENRY BUSINESS PARK	27	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
STANISLAUS	NITRATE	CA5000426	LIBERTY BAPTIST CHURCH	65	4
STANISLAUS	NITRATE	CA5000435	BLOOMING CAMP WATER SYSTEM	25	1
STANISLAUS	NITRATE	CA5000443	TRIANGLE TRUCK STOP (WATER)	25	1
STANISLAUS	NITRATE	CA5000454	PURINA MILLS INC	25	1
STANISLAUS	NITRATE	CA5000457	ONE STOP WS	50	6
STANISLAUS	NITRATE	CA5000465	DUARTE NURSERY INC. WATER SYSTEM	75	4
STANISLAUS	NITRATE	CA5000525	OASIS MARKET	25	4
STANISLAUS	NITRATE	CA5000530	FRAZIER NUT FARMS, INC.	40	5
STANISLAUS	NITRATE	CA5000554	HUGHSON NUT #2	25	3

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
STANISLAUS	NITRATE	CA5000600	MID VALLEY NUT CO.	60	4
SUTTER	NITRATE	CA5100112	TIERRA BUENA MHP #1	50	1
TULARE	NITRATE	CA5400526	WESPAK, INC.	53	5
TULARE	NITRATE	CA5400558	SAUCELITO ELEMENTARY SCHOOL	91	4
TULARE	NITRATE	CA5400616	LEMON COVE WATER COMPANY	109	6
TULARE	NITRATE	CA5400670	TRIPLE R MUTUAL WATER CO.	408	4
TULARE	NITRATE	CA5400735	RODRIGUEZ LABOR CAMP	115	6
TULARE	NITRATE	CA5400795	WAUKENA ELEMENTARY SCHOOL	255	6
TULARE	NITRATE	CA5400844	ELBOW CREEK ELEMENTARY SCHOOL	530	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
TULARE	NITRATE	CA5400850	PACKWOOD SCHOOL	105	1
TULARE	NITRATE	CA5400882	PLEASANT VIEW WEST SCHOOL	220	2
TULARE	NITRATE	CA5400964	SIERRA VISTA ASSOCIATION	44	6
TULARE	NITRATE	CA5400994	HOPE ELEMENTARY SCHOOL	265	6
TULARE	NITRATE	CA5401003	EAST OROSI COMMUNITY SERVICES DISTRICT	932	5
TULARE	NITRATE	CA5402022	BRAVO FARMS TRAVER	25	3
TULARE	NITRATE	CA5403046	VISALIA CITRUS PACKING GROUP ORANGE COVE	78	1
TULARE	NITRATE	CA5403080	LEGACY PACKING	125	1
TULARE	NITRATE	CA5403081	PETERS FRUIT FARMS, INC	125	2

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
TULARE	NITRATE	CA5403090	IN & OUT FOODMART	75	1
TULARE	NITRATE	CA5403105	THE BARN	200	3
TULARE	NITRATE	CA5403106	EXETER-IVANHOE CITRUS ASSOCIATION	103	1
TULARE	NITRATE	CA5403122	PC'S FOOD MART, INC.	200	4
TULARE	NITRATE	CA5403211	BOOTH RANCHES LLC	150	8
TULARE	NITRATE	CA5410003	EXETER, CITY OF	11169	1
YOLO	NITRATE	CA5700518	CASA RUIZ	60	1
YOLO	NITRATE	CA5700555	BONFIRE VILLAGE HOTEL	44	4
YOLO	NITRATE	CA5700623	DAVIS JUSD - FAIRFIELD SCHOOL	46	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
YOLO	NITRATE	CA5700788	NORTH DAVIS MEADOWS	314	5
YOLO	NITRATE	CA5700795	HAY KINGDOM	27	1
YOLO	NITRATE	CA5700817	JEHOVAH'S WITNESSES - KINGDOM HALL	245	1

Appendix C: Summary of MCL Violations for 1,2,3-Trichloropropane by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
FRESNO	1,2,3-TCP	CA1000004	BELMONT WATER CORPORATION	264	1
FRESNO	1,2,3-TCP	CA1000023	FCSA #14/BELMONT MANOR	115	1
FRESNO	1,2,3-TCP	CA1000180	ALTA ELEMENTARY SCHOOL	380	1
FRESNO	1,2,3-TCP	CA1000204	AMERICAN UNION SCHOOL	250	1
FRESNO	1,2,3-TCP	CA1000416	EASTON PRESBYTERIAN CHURCH	450	1
FRESNO	1,2,3-TCP	CA1000580	CAMPOS BROS. FARMS	520	1
FRESNO	1,2,3-TCP	CA1010001	BAKMAN WATER COMPANY	16756	2
FRESNO	1,2,3-TCP	CA1010006	CITY OF FOWLER	6700	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
FRESNO	1,2,3-TCP	CA1010018	KERMAN, CITY OF	15282	1
FRESNO	1,2,3-TCP	CA1010025	CITY OF PARLIER	14494	1
FRESNO	1,2,3-TCP	CA1010035	DEL REY COMMUNITY SERV DIST	1358	1
FRESNO	1,2,3-TCP	CA1010039	CARUTHERS COMM SERV DIST	2503	1
KERN	1,2,3-TCP	CA1500096	OLD RIVER MUTUAL WATER COMPANY	128	3
KERN	1,2,3-TCP	CA1500401	METTLER COUNTY WATER DISTRICT	157	1
KERN	1,2,3-TCP	CA1500597	GRIMMWAY FARMS-FROZEN FOODS	300	3
KERN	1,2,3-TCP	CA1502012	HECK CELLARS WATER SYSTEM	47	4
KERN	1,2,3-TCP	CA1502068	DI GIORGIO SCHOOL WATER SYSTEM	238	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
KERN	1,2,3-TCP	CA1503093	GRIMMWAY ENTERPRISES-MALAGA WATER SYSTEM	1200	1
KERN	1,2,3-TCP	CA1503290	THE GARLIC COMPANY	250	2
KERN	1,2,3-TCP	CA1503688	GRIMMWAY FARMS - DAVID ROAD	114	4
MADERA	1,2,3-TCP	CA2000553	MD 28 RIPPERDAN SELF HELP	48	3
MADERA	1,2,3-TCP	CA2000602	RIPPERDAN COMMUNITY DAY SCHOOL	47	1
MADERA	1,2,3-TCP	CA2000659	CBUSO MISSION BELL	450	6
MADERA	1,2,3-TCP	CA2000920	SAN JOAQUIN WINE COMPANY	90	3
MADERA	1,2,3-TCP	CA2000951	SWS LAND DEVELOPMENT INC	529	2
MADERA	1,2,3-TCP	CA2000956	QUADY RESIDENCE AND WNERY	29	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MERCED	1,2,3-TCP	CA2400011	DOLE ATWATER PLANT	1500	12
MERCED	1,2,3-TCP	CA2400079	MCSWAIN ELEMENTARY SCHOOL	8422	4
MERCED	1,2,3-TCP	CA2400084	EVERGREEN MOBILE HOME PARK	36	1
MERCED	1,2,3-TCP	CA2400099	GRACE MENNONITE SCHOOL	100	2
MERCED	1,2,3-TCP	CA2400113	SCHELBY SCHOOL	290	1
MERCED	1,2,3-TCP	CA2400167	BALLICO CSD	238	4
MERCED	1,2,3-TCP	CA2400232	AV THOMAS PRODUCE, INC.	206	3
MERCED	1,2,3-TCP	CA2410004	CITY OF LIVINGSTON	14894	1
MERCED	1,2,3-TCP	CA2410010	WINTON WATER & SANITARY DIST	9500	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
MONTEREY	1,2,3-TCP	CA2700518	WATSONVILLE PRODUCE INC	100	12
MONTEREY	1,2,3-TCP	CA2700579	ELKHORN RD WS #04	60	13
MONTEREY	1,2,3-TCP	CA2700771	SPRINGFIELD WATER COMPANY	200	8
MONTEREY	1,2,3-TCP	CA2701036	APPLE AVE WS #03	60	8
MONTEREY	1,2,3-TCP	CA2701241	ENCINAL RD WS #01	91	6
MONTEREY	1,2,3-TCP	CA2702616	ALTMAN PLANTS WS #02 - SPENCE 20140	25	6
MONTEREY	1,2,3-TCP	CA2708852	FAITH AND FAMILY FARMS WS	25	2
RIVERSIDE	1,2,3-TCP	CA3301577	CSA 62	700	4
SAN BERNARDINO	1,2,3-TCP	CA3601159	CALIFORNIA STEEL INDUSTRIES	500	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
SAN JOAQUIN	1,2,3-TCP	CA3900978	SJ COUNTY-REDWOOD SCHOOL	83	4
SAN JOAQUIN	1,2,3-TCP	CA3900983	CHERRY LANE TRAILER PARK	100	6
SAN JOAQUIN	1,2,3-TCP	CA3901169	MUSD-NILE GARDEN SCHOOL	804	5
SAN JOAQUIN	1,2,3-TCP	CA3901414	MCLAUGHLIN WASTE EQUIPMENT INC	25	4
SAN JOAQUIN	1,2,3-TCP	CA3901425	MORADA PRODUCE	25	2
SAN JOAQUIN	1,2,3-TCP	CA3901486	CENTRAL VALLEY BAPTIST CHURCH WS	556	4
SAN JOAQUIN	1,2,3-TCP	CA3910005	MANTECA, CITY OF	84625	4
SAN JOAQUIN	1,2,3-TCP	CA3910014	SAN JOAQUIN COUNTY-RAYMUS VILLAGE	1082	1
STANISLAUS	1,2,3-TCP	CA5010008	HUGHSON, CITY OF	7000	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
STANISLAUS	1,2,3-TCP	CA5010009	KEYES COMMUNITY SERVICES DIST.	5697	4
STANISLAUS	1,2,3-TCP	CA5010019	TURLOCK, CITY OF	74820	5
STANISLAUS	1,2,3-TCP	CA5010028	CERES, CITY OF	48706	4
TULARE	1,2,3-TCP	CA5400526	WESPAK, INC.	53	2
TULARE	1,2,3-TCP	CA5400558	SAUCELITO ELEMENTARY SCHOOL	91	8
TULARE	1,2,3-TCP	CA5400641	TEVISTON COMMUNITY SERVICES DISTRICT	343	4
TULARE	1,2,3-TCP	CA5400711	SIERRA VIEW JR ACADEMY	117	4
TULARE	1,2,3-TCP	CA5400735	RODRIGUEZ LABOR CAMP	115	4
TULARE	1,2,3-TCP	CA5400792	WOODVILLE FARM LABOR CENTER	650	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
TULARE	1,2,3-TCP	CA5400844	ELBOW CREEK ELEMENTARY SCHOOL	530	4
TULARE	1,2,3-TCP	CA5400964	SIERRA VISTA ASSOCIATION	44	3
TULARE	1,2,3-TCP	CA5403041	FAMILY TREE FARMS	30	4
TULARE	1,2,3-TCP	CA5403080	LEGACY PACKING	125	3
TULARE	1,2,3-TCP	CA5403081	PETERS FRUIT FARMS, INC	125	4
TULARE	1,2,3-TCP	CA5403140	MONARCH NUT COMPANY	400	4
TULARE	1,2,3-TCP	CA5403211	BOOTH RANCHES LLC	150	8
TULARE	1,2,3-TCP	CA5410001	CUTLER PUD	6200	2
TULARE	1,2,3-TCP	CA5410009	PIXLEY PUBLIC UTIL DIST	2772	4