

2025 Report on Water Quality Relative to Public Health Goals

Background

The California Health and Safety Code¹ requires water utilities with more than 10,000 service connections to prepare a triennial report comparing water quality results to the Public Health Goals (PHGs) or Maximum Contaminant Level Goals (MCLGs). PHGs are non-enforceable goals set by the California Office of Environmental Health Hazard Assessment (OEHHA), a division of the California Environmental Protection Agency (Cal-EPA). If OEHHA has not adopted a PHG for a drinking water constituent, the law requires water utilities to use MCLGs adopted by United States Environmental Protection Agency (USEPA), which are also non-enforceable goals. This report addresses constituents that have a California primary drinking water standard (a Maximum Contaminant Level, MCL) and either a PHG or MCLG.²

This triennial report for Dublin San Ramon Services District (DSRSD) covers the calendar years 2022, 2023, and 2024. If a constituent with an established MCL was detected in the DSRSD water supply during this period at a level exceeding an applicable PHG, MCLG, or MCL, this report provides the following information, as required by law:

- The numerical public health risk associated with the MCL and the PHG or MCLG, if possible, to quantify;
- The category or type of health risk that could be associated with the constituent;
- The best available technology (BAT) that could be used to reduce the level of the constituent in our drinking water; and
- An estimate of the cost to install that treatment if it is appropriate and feasible.

Public Health Goals

A Public Health Goal is the level of a constituent's concentration in drinking water that poses no significant health risk. OEHHA sets PHGs solely on public health risk and does not consider practical risk-management factors used by the USEPA and the California Division of Drinking Water (DDW) to set enforceable drinking water standards (MCLs). These practical factors include the capability to detect and analyze constituents at very low levels, technologies available to reduce constituents to these levels, and the benefits and costs of constituent reduction. PHGs are not enforceable, and no public water systems are required to meet them. When a PHG is absent, an MCLG will be used as the concentration of comparison. MCLGs, like PHGs, are strictly health-based and include a margin of safety.

Water Quality Data

All of DSRSD's potable water is sourced from Zone 7 Water Agency (Zone 7). Zone 7 maintains a diverse regional water portfolio that ensures water supply reliability. The water quality compliance data collected by both DSRSD and Zone 7 in calendar years 2022, 2023, and 2024 were used to create this report. This data is summarized separately in DSRSD's 2022, 2023, and 2024 Annual Water Quality Reports.³

Report Guidelines

The Association of California Water Agencies (ACWA) formed a work group that prepared guidelines for water utilities to use in preparing the required report on water quality relative to PHGs. DSRSD staff used the 2025 ACWA guidelines⁴ to prepare this report.

Treatment Technologies and Estimated Costs

Both USEPA and DDW identify "best available technologies," which are the best-known methods of reducing contaminant levels to below the MCL. Costs can be estimated for using BAT technologies; however, many PHGs and all MCLGs are set much lower than the MCL. It is not always possible or feasible to determine a treatment that could reduce the level of a constituent down to the level of PHG or MCLG, many of which are set at zero. Estimating the cost to reduce a constituent to zero is difficult, if not impossible, because it is not possible to verify by analytical means that the level has been lowered to zero. In some cases, installing treatment to try and further reduce very low levels of one constituent may adversely affect other aspects of water quality.

Constituents that Exceeded a PHG or MCLG

The following constituents were detected in our drinking water distribution system at levels above the PHG or MCLG.

Total Coliform Bacteria

Coliforms are bacteria that are naturally present or ubiquitous in the environment. They are used as an indicator of other organisms because of the ease of monitoring and analysis. The District collects samples for total coliform bacteria at locations across the distribution system, and Zone 7 measures for them weekly for each of their drinking water supply sources.

In 2023, total coliform bacteria were found to be present in two samples. In 2022 and 2024, none were detected. There is no MCL for total coliform bacteria; instead, a Coliform Treatment Technique is required when a water system detects total coliforms in 5% of all samples collected within a month. DSRSD did not exceed this threshold during the 2022, 2023, and 2024 years.

Health risk category: Total coliforms are a group of related bacteria that are, with a few exceptions, not harmful to humans. USEPA has determined that the health risk associated with the MCLG is 0.

Best available treatment technology: Exceeding zero Total Coliform bacteria at any one time, in and of itself, does not normally constitute the need for any treatment or action. There is no action that could be taken with absolute certainty that could ensure that the system would always have zero-percent Total Coliform every single time.

DSRSD's wholesale water provider, Zone 7 Water Agency, disinfects at the source to treat the water for pathogens, including total coliform. DSRSD may add supplemental chloramine within its water distribution system. DSRSD and Zone 7 carefully balance treatment processes to continue supplying drinking water that meets and often exceeds State and Federal drinking water standards.

To prevent waterborne disease, DSRSD combines disinfection with other measures, including:

- Maintaining a cross-connection control program that helps prevent the accidental entry of non-drinking water into the drinking water system;
- Flushing water mains known to have little use to remove aging water and bring in fresh water with a higher disinfectant residual;
- Maintaining a positive pressure in the distribution system to prevent the intrusion of contaminants; and
- Regular monitoring across the distribution system to confirm the absence of total coliform bacteria and the presence of the protective (chloramine) disinfectant residual.

There is no commercially available technology that will guarantee zero percent Total Coliform positive every sample, therefore, the cost of achieving the PHG cannot be estimated.

Escherichia coli (E. coli) Bacteria

When samples test positive for total coliform bacteria, *E. coli* analysis is conducted. *E. coli* are bacteria found in the environment, foods, and intestines of people and animals. *E. coli* are a large and diverse group of bacteria. There is no PHG and although the MCL was not exceeded, the MCLG of zero positive samples was exceeded. In 2023, *E. coli* was found to be present in one sample. In 2022 and 2024, no *E. coli* were detected. Our water system is in full compliance with the federal and state regulations for *E. coli* bacteria.

Health risk category: Most *E. coli* are harmless and are an important part of a healthy human intestinal tract. However, some *E. coli* are pathogenic, meaning they can cause illness, such as diarrhea, urinary tract infections, respiratory illness and pneumonia, or other illnesses. The types of *E. coli* that can cause diarrhea can be transmitted through contaminated water or food, or through contact with animals or persons.

Best available treatment technology: Zone 7 and DSRSD have taken all of the steps described by DDW as best available technology in the California Code of Regulations, Section 64447, Title 22.

Exceeding zero *E. coli* bacteria at any one time, in and of itself, does not normally constitute the need for any treatment or action. There is no action that could be taken with absolute certainty that could ensure that the system would always have zero-percent *E. coli* every single time.

DSRSD's wholesale water provider, Zone 7 Water Agency, disinfects at the source to produce water that is in compliance with the *E.coli* MCL. DSRSD may add supplemental chloramine within its water distribution system. DSRSD and Zone 7 carefully balance treatment processes to continue supplying drinking water that meets and often exceeds State and Federal drinking water standards.

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- Maintaining a cross-connection control program that helps prevent the accidental entry of non-drinking water into the drinking water system;
- Flushing water mains known to have little use to remove aging water and bring in fresh water

with a higher disinfectant residual;

- Maintaining a positive pressure in the distribution system to prevent the intrusion of contaminants; and
- Regular monitoring across the distribution system to confirm the absence of *E.coli* bacteria and the presence of the protective (chloramine) disinfectant residual.

There is no commercially available technology that will guarantee zero percent positive every sample, therefore, the cost of achieving the PHG cannot be estimated.

Fluoride

Almost all water contains some naturally occurring fluoride, but usually at levels too low to prevent dental cavities. Many communities choose to add a small amount of fluoride to the water supply to promote good oral health; in 1974, voters in DSRSD's service area approved fluoridation of the water supply. Fluoride is added to drinking water by DSRSD in accordance with our Fluoride Monitoring Plan to a target level of 0.7 mg/L. DSRSD has detected fluoride at levels up to 1.1 mg/L in the water supplied through our distribution system in 2024. The state of California MCL is 2.0 mg/L and the PHG is 1.0 mg/L. Our water system is in full compliance with the federal and state drinking water standards for fluoride, but the fluoride level in the system at times exceeds the PHG.

Health risk category: Individuals who live in areas where the water is fluoridated are exposed to fluoride from this source. In addition, exposure to fluoride in toothpaste, food and other sources is common. It is the cumulative exposure to fluoride from all of these sources that determines the likelihood of health effects such as musculoskeletal toxicity in the form of dental fluorosis (tooth mottling).

Best available treatment technology: As an additive to the drinking water to promote dental health, the best available technology for treatment is to regulate its application. DSRSD carefully controls fluoride levels to target the best protection for dental health without causing undesirable health risks. The District routinely maintains the pumps that inject fluoride throughout the water distribution system.

Hexavalent Chromium

Chromium is a heavy metal that occurs naturally in the environment and can enter the drinking water supply through the erosion of natural deposits. Naturally occurring trivalent chromium can be transformed into hexavalent chromium by natural processes. Discharges from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities may also contribute to drinking water supply concentrations of hexavalent chromium. In 2024, Zone 7 Water Agency had detections of hexavalent chromium between 1.2 and 6.4 µg/L in selected groundwater wells. The hexavalent chromium MCL is 10 µg/L and the PHG is 0.02 µg/L. DSRSD's water system is in full compliance with the federal and state drinking water standards for hexavalent chromium, but at times may exceed the PHG.

Health risk category: Eating or drinking hexavalent chromium may be harmful to humans. Some people who drink water containing hexavalent chromium in excess of the MCL over many years may have an increased risk of developing cancer. OEHHA has determined that the theoretical health risk associated with the PHG is 1 excess case of cancer in a million people, and the risk associated with the MCL is 5 excess cases of cancer in

10,000 people exposed over a 70-year lifetime.

Best available treatment technology: Three treatment technologies have been identified as best available technologies: ion exchange (IX), reduction-coagulation-filtration (RCF), and reverse osmosis (RO). Public water systems are not limited to using only the identified technologies as BAT, but they would have to pilot or demonstrate the effectiveness of the treatment. Because the detection limit for reporting (DLR) for hexavalent chromium is greater than the PHG, reliably treating to the PHG and estimating the associated costs cannot be appropriately estimated at this time.

Lead

Lead is a naturally occurring element that is widely used in various industrial and domestic products. The historical and on-going use of lead contributes to environmental contamination and poses risks to human health. Exposure primarily occurs through inhalation of lead-contaminated dust but also includes the ingestion of lead-contaminated water and food.

Our water system is in full compliance with the *Lead and Copper Rule Revisions* and *Lead and Copper Rule Improvements*. Lead does not have an established MCL. Instead, regulations require that the 90th percentile value of all samples collected from a predetermined number of household taps in the distribution system does not exceed the Action Level. The Action Level for lead is 15 µg/L. The PHG for lead is 0.2 µg/L and the MCLG is zero, both of which are below the 5 µg/L DLR. DSRSD tests tap water samples from homes for lead every three years. In water samples collected in 2022, the 90th percentile value for lead was 5.1 µg/L, which is below the Action Level of 15 µg/L but over the PHG of 0.2 µg/L. Samples were not collected in either 2023 or 2024.

Health risk category: Exposure to lead has been associated with a variety of human toxicological effects, including: developmental neurotoxicity, cardiovascular toxicity, and carcinogenicity. OEHHHA established the PHG based on non-carcinogenic effects. The theoretical health risk of cancer associated with the action level is 2 excess cases of cancer in a million people exposed over a lifetime.

Best available treatment technology: In general, optimizing corrosion control is considered to be the best available technology to address corrosion issues. Zone 7 conducted a corrosion control optimization study in 2017. The recommended course of action from the study was to continue the current practice of pH adjustment at the surface water treatment plants. Zone 7 continues to monitor water quality parameters related to corrosivity, which include pH, hardness, alkalinity and total dissolved solids.

Since the District, in cooperation with Zone 7, is meeting requirements for optimized corrosion control, it is not prudent to initiate additional corrosion control treatment at this time to lower the lead level. These treatments would involve adding other chemicals, which could raise additional water quality issues. Therefore, we have not included a cost estimate for additional treatment.

Perfluorooctane sulfonic acid (PFOS)

Perfluorooctane sulfonic acid, also known as perfluorooctane sulfonate (PFOS), is a human-made chemical that is a part of a class of compounds called per- and polyfluoroalkyl substances (PFAS). PFOS does not occur naturally in the environment. Per- and polyfluoroalkyl substances (PFAS) are a large group of manmade substances that have been extensively used since the 1940s in common consumer products

designed to be waterproof, stain-resistant, or nonstick. In addition, they have been used in fire-retarding foam and various industrial processes.

OEHHA established a PHG of 0.07 ng/L in 2024. In 2024, USEPA also established a zero MCLG and a 4 ng/L MCL. While water systems currently have until 2029 to comply with the new MCL, USEPA announced that it has plans to extend the compliance date to 2031.⁶ Zone 7 Water Agency collected samples in 2022, 2023, and 2024 from groundwater sources and measured PFOS concentrations that ranged from non-detect to 32 ng/L. Surface water samples did not have detections of PFOS.

Health risk category: The PFOS PHG is set at a level of risk of one additional cancer case per one million persons exposed over a lifetime.

Best available treatment technology: Three technologies are identified as BATs to reduce PFOS to below the MCL: granular activated carbon (GAC), PFAS-selective ion exchange (IX), and reverse osmosis (RO) or nanofiltration (NF). Zone 7 has employed RO to treat a portion of its groundwater supply since 2009. While this RO facility was not installed to remove PFOS, monitoring has verified there is no measurable PFAS in the RO permeate. In advance of regulatory compliance requirements, Zone 7 has already installed two IX treatment systems (2023 and 2025) to remove PFAS from two wellfields. A third IX treatment system is currently under development to provide treatment for the remaining groundwater containing PFAS. The PHG is below the DLR and as such it is not possible at this time to determine the costs to remove PFOS to or below this concentration.

Perfluorooctanoic acid (PFOA)

PFOA is a human-made chemical that is a part of a class of compounds called PFAS. PFOA does not occur naturally in the environment. PFOS does not occur naturally in the environment. Per- and polyfluoroalkyl substances (PFAS) are a large group of manmade substances that have been extensively used since the 1940s in common consumer products designed to be waterproof, stain-resistant, or nonstick. In addition, they have been used in fire-retarding foam and various industrial processes.

OEHHA issued PFOA a PHG of 1 ng/L in 2024. In 2024, USEPA also established a zero MCLG and a 4 ng/L MCL. While water systems currently have until 2029 to comply with the new MCL, USEPA announced that it has plans to extend the compliance date to 2031.⁶ Zone 7 collected samples in 2022, 2023, and 2024 from groundwater sources with PFOA concentrations that ranged from non-detect to 4 ng/L. Surface water samples did not have detections of PFOA.

Health risk category: The PFOA PHG is set at a level of risk of one additional cancer case per one million persons exposed over a lifetime.

Best available treatment technology: Three technologies are identified as BATs to reduce PFOA to below the MCL: granular activated carbon (GAC), PFAS-selective ion exchange (IX), and reverse osmosis (RO) or nanofiltration (NF). Zone 7 has employed RO to treat a portion of its groundwater supply since 2009. While this RO facility was not installed to remove PFOA, monitoring has verified there is no measurable PFAS in the RO permeate. In advance of regulatory compliance requirements, Zone 7 has already installed two IX treatment systems (2023 and 2025) to remove PFAS from two wellfields. A third IX treatment system is currently under development to provide treatment for the remaining groundwater supply containing PFAS.

The PHG is below the DLR and as such it is not possible at this time to determine the costs to remove PFOA to or below this concentration.

Uranium

Uranium is a naturally occurring metallic element which is weakly radioactive and ubiquitous in the earth's crust. Uranium is found in ground and surface waters due to its natural occurrence in geological formations. The uranium intake from water is about equal to the total from other dietary components.

The DSRSD water system is in full compliance with the federal and state regulations for uranium. The PHG for uranium is 0.43 picoCuries per liter (pCi/l) and the MCL is 20 pCi/l. All water supply samples were below the MCL and ranged from non-detect to 4 pCi/l. Annual averages for the water coming from the groundwater supply ranged from ND to 4 pCi/l for calendar years 2022, 2023, and 2024. There were no detections in the surface water supply.

Health risk category: The category for health risk associated with uranium is that people who drink water containing uranium above the MCL for many years could experience an increased cancer risk. OEHHA has determined that the numerical cancer risk for uranium at the PHG level is 1 excess case of cancer in a million people for a lifetime exposure through drinking water.

Best available treatment technology: The best available treatment technologies for uranium are ion exchange, reverse osmosis (RO), lime softening, and coagulation/filtration. The PHG is below the DLR and there is uncertainty surrounding the ability to treat down to the PHG.

At present, the evaluation of all uranium treatment technologies is limited by detection limits of the analytical methods. It is uncertain whether these treatment methods can effectively reduce uranium to the PHG level. For this reason, it is premature to develop treatment costs for uranium control.

Recommendations for Further Action

DSRSD drinking water meets all quality standards set by DDW and USEPA to protect public health. It would require additional costly treatment processes to further reduce the levels of the constituents identified in this report, which are already significantly below the health- based MCLs established to meet PHGs / MCLGs. It is uncertain if additional treatment processes could effectively reduce constituent levels, which are already low. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

References

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