El Dorado Irrigation District

2022 Triennial Public Health Goals Report

For the Drinking Water in the Main Water System

JUNE 2022

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BACKGROUND

The California Health and Safety Code (HSC §116470(b)) specifies water utilities with greater than 10,000 service connections prepare a special Public Health Goal Report (Report) every three years if water quality measurements have exceeded any Public Health Goal (PHG). Attachment 1 includes Section 116470 (b). The report must be completed by July 1 of the year in which it is due and new reports are required every three years. Past reports were prepared by El Dorado Irrigation District in 2010, 2013, 2016, 2019 and the current report was completed by July 1, 2022 as required.

PHG reports must present information on (1) contaminants that have been detected above a PHG, (2) health risk information for the detected contaminants, (3) an estimate of the cost to install Best Available Technology (BAT) to reduce the level of a given contaminant, and (4) what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminants(s) and the basis for that decision.

PHGs are non-enforcement goals established by the California Environmental Protection Agency's (Cal-EPA) Office of Environmental Health Hazard Assessment (OEHAA). The regulation also requires that where OEHHA has not adopted a PHG for a constituent, the water suppliers are to use the Maximum Contaminant Level Goal (MCLG) adopted by the United States Environmental Protection Agency (USEPA). The State Water Resources Control Board Division of Drinking Water (DDW) sets Maximum Contaminant Levels (MCLs) as close as feasible to the PHG taking treatment cost and available analytical and treatment technology into consideration. MCLs are enforceable limits that water purveyors must meet to protect public health. Only constituents having a MCL and either a PHG or MCLG are required to be addressed in the Report. Attachment 2 provides a complete list of all regulated constituents with the MCLs and PHGs or MCLGs.

The Report addresses any constituent detected in the District's water supply between 2019 and 2021 at a level exceeding any applicable PHG or MCLG, as required by the regulation. The Report includes the numerical public health risk associated with the MCL and the PHG or MCLG, the category or type of risk to health that could be associated with each constituent. This report uses the most recent health risk information published by OEHHA.

There are a few constituents that are routinely detected in water systems at levels usually well below the drinking water standards for which no PHG or MCLG has yet been adopted by OEHHA or USEPA. One example is disinfection byproducts, including trihalomethanes and haloacetic acids. As PHGs and MCLGs are updated the District will include them in its evaluation in future Reports as applicable.

WHAT ARE PUBLIC HEALTH GOALS?

PHGs are set by OEHHA and are based solely on public health risk considerations. None of the practical risk-management factors that are considered by the USEPA or State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) in setting MCL drinking water standards are considered in

setting the PHGs. These factors include analytical detection capability, treatment technology available, benefits and costs. The PHGs are not enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs and likewise are non-enforceable.

WHAT WATER QUALITY DATA WAS REVIEWED TO PREPARE THIS REPORT?

All of the water quality data collected in the Main Water System between 2019 and 2021 was considered for purposes of determining compliance with drinking water standards. This data was previously summarized in our 2019, 2020, and 2021 Annual Water Quality (AWQ) Reports, which are available on the District's website and included in Attachment 5 of this report.

WHAT GUIDELINES WERE FOLLOWED IN PREPARING THIS REPORT?

A workgroup formed by Association of California Water Agencies (ACWA) prepared guidelines for water utilities, which were used in the preparation of this PHG Report. The most recent guidelines (ACWA "2019 PHG Guidance") were used to prepare this report. No guidance was available from state regulatory agencies. OEHHA publishes a document with health risk information for regulated constituents. The OEHHA publication (OEHHA, "Health Risk Information for PHG Exceedance Report", February 2022) was used to prepare this report (See Attachment 3).

WHAT IS BEST AVAILABLE TECHNOLOGY AND THE ASSOCIATED ESTIMATED COST?

Both the USEPA and DDW adopt what are known as Best Available Technologies (BATs), which are the best known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always possible or feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG - many are set at zero. Estimating the costs 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 have adverse effects on other aspects of water quality.

WHAT ARE DETECTION LIMITS FOR PURPOSE OF REPORTING (DLRs)?

When DDW establishes a drinking water regulation, the agency evaluates available analytical methods and sets a DLR for the constituent. DLRs are the lowest concentration of the constituent that laboratories report for determining compliance. A constituent is considered by DDW to be "detected" when measured concentrations are above the DLR.

WHAT CONSTITUENTS WERE DETECTED ABOVE A PHG (OR MCLG)?

One constituent- total coliform bacteria - was detected at levels above the MCLG in the distribution system. There is no PHG for total coliform; the MCL was not exceeded.

Constituent	Result	MCL	PHG	MCLG
Total Coliform Bacteria	1% percent of monthly samples were positive	5% of the samples collected during any month are total coliform positive (1)	None	0%

(1) California Code of Regulation, Title 22, §64426.1 (b) up until June 30, 2021.

COLIFORM BACTERIA

Between 2019 and 2021, 100 to 125 samples were collected by the District each month and analyzed for the presence of coliform bacteria. Up until June 30, 2021 the existing MCL, for water systems collecting 40 or more routine samples per month, was 5% of samples collected during any month are total coliform positive. On July 1, 2021, the state revised its total coliform rule and changed the MCL from 5% to a treatment technique trigger as required by the federal Revised Total Coliform Rule effective April 1, 2016. As stated previously, there is no PHG set for coliforms but the USEPA set a MCLG of zero. This PHG report reflects the changes in drinking water regulatory requirements during 2021.

Both revised rules maintain the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and *E. coli* bacteria). The USEPA anticipates greater health protection as the new rules requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exists. If found, these must be corrected by the water system.

Three separate times in the prescribed three year period, an initial sample was found to test positive for coliform bacteria. However, the confirmation samples tested negative and, as a result, no follow up actions were necessary. A maximum of 1% of these samples tested positive in each of the months in which these detections occurred. Since a single sample tested positive during three separate months, the MCLG of zero was exceeded even though confirmation sampling tested negative for coliform bacteria presence.

The reason for the coliform drinking water standard is to minimize the possibility of the water containing pathogens, which are organisms that cause waterborne disease. Because coliform is only a surrogate indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk. While USEPA normally sets MCLGs “at a level no known or

anticipated adverse effects on persons would occur", they indicate that they cannot do so with coliform bacteria. Therefore, it was set to zero.

Coliform bacteria are an indicator organism that are ubiquitous in nature and are not generally considered harmful. They are used because of the ease in monitoring and analysis. If a positive sample is found, it indicates a potential problem that needs to be investigated and follow up sampling performed. It is not at all unusual for a system to have an occasional positive initial sample given its prevalence in nature.

WHAT ARE THE BEST AVAILABLE TECHNOLOGIES FOR MICROBIAL CONTANMINATS?

Title 22 lists the following Best Available Technology for microbiological contaminants (Section 64447, CCR):

- Maintenance of a disinfectant residual throughout the distribution system;
- Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of positive water pressure in all parts of the distribution system; and
- Filtration and/or disinfection of approved surface water or disinfection of groundwater using strong oxidants such as chlorine, chlorine dioxide, or ozone.

The District implements the above Best Available Technology for total coliforms. The District's three surface water treatment plants are filtered and disinfected per regulatory requirements. The chlorine residual levels are carefully controlled at the treatment plants and within the distribution systems to provide the best health protection without causing the water to have undesirable taste and odor or increasing the disinfection byproduct level. This careful balance of treatment processes is essential to continue supplying customers with safe drinking water.

Other actions that the District implemented over the years to protect the drinking water quality include: an effective cross-connection control program, maintenance of a disinfectant residual throughout our system, an effective monitoring and surveillance program and maintaining positive pressures in our distribution system. The District is taking all of the steps described by DDW as "best available technology" for total coliform and *E. coli* bacteria in Section 64447, Title 22, of the California Code of Regulations.

RECOMMENDATIONS FOR FURTHER ACTION

The drinking water quality of the District's Main Water System meets all DDW, and USEPA drinking water standards set to protect public health. Any additional effort by the District to further reduce the levels of coliform bacteria that are already significantly below the health-based MCLs established to provide "safe drinking water" would require additional costly treatment processes. The effectiveness of any new treatment process (es) to provide any significant reductions in coliform levels at these already

low values is uncertain. In addition, the health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.

ATTACHMENTS

No. 1 Excerpt from California Health & Safety Code: Section 116470(b)

No. 2 Table of California Regulated Constituents with MCLs and PHGs

No. 3 Health Risk Information for Public Health Goal Exceedance Reports. Prepared by the Office of Environmental Health Hazzard Assessment. February 2022

No. 4 El Dorado Irrigation District's 2019, 2020, and 2021 Water Quality Reports

REFERENCES

No. 1 ACWA *"Suggested Guidelines for Preparation of Required on Public Health Goals (PHGs) to satisfy requirements of California Health and Safety Code Section 116470(b)"* dated April 2019

ATTACHMENT 1

EXCERPT FROM CALIFORNIA HEALTH & SAFETY CODE SECTION 116470 (b)

116470. On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:

(1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.

(2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.

(3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.

(4) Describes the best available technology, if any is then available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.

(5) Estimates the aggregate cost and the cost per customer of utilizing the technology described in paragraph (4), if any, to reduce the concentration of that contaminant in drinking water to a level at or below the public health goal.

(6) Briefly describes what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminant in public drinking water supplies and the basis for that decision.

(c) Public water systems required to prepare a report pursuant to subdivision (b) shall hold a public hearing for the purpose of accepting and responding to public comment on the report. Public water systems may hold the public hearing as part of any regularly scheduled meeting.

(d) The department shall not require a public water system to take any action to reduce or eliminate any exceedance of a public health goal.

(e) Enforcement of this section does not require the department to amend a public water system's operating permit.

(f) Pending adoption of a public health goal by the Office of Environmental Health Hazard Assessment pursuant to subdivision (c) of Section 116365, and in lieu thereof, public water systems shall use the national maximum contaminant level goal adopted by the United States Environmental Protection Agency for the corresponding contaminant for purposes of complying with the notice and hearing requirements of this section.

ATTACHMENT 2

TABLE OF CALIFORNIA REGULATED CONSTITUENTS WITH MCLs AND PHGs

MCLs, DLRs, PHGs, for Regulated Drinking Water Contaminants

(Units are in milligrams per liter (mg/L), unless otherwise noted.)

Last Update: September 14, 2021

The following tables includes California's maximum contaminant levels (MCLs), detection limits for purposes of reporting (DLRs), public health goals (PHGs) from the Office of Environmental Health Hazard Assessment (OEHHA). For comparison, Federal MCLs and Maximum Contaminant Level Goals (MCLGs) (USEPA) are also displayed.

Inorganic Chemicals Table, Chemicals with MCLs in 22 CCR §64431

State Regulated Inorganic Chemical Contaminant	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Aluminum	1	0.05	0.6	2001	--	--
Antimony	0.006	0.006	0.001	2016	0.006	0.006
Arsenic	0.010	0.002	0.000004	2004	0.010	zero
Asbestos (MFL = million fibers per liter; for fibers >10 microns long)	7 MFL	0.2 MFL	7 MFL	2003	7 MFL	7 MFL
Barium	1	0.1	2	2003	2	2
Beryllium	0.004	0.001	0.001	2003	0.004	0.004
Cadmium	0.005	0.001	0.00004	2006	0.005	0.005
Chromium, Total - OEHHA withdrew the 0.0025-mg/L PHG	0.05	0.01	withdrawn Nov. 2001	1999	0.1	0.1

State Regulated Inorganic Chemical Contaminant	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Chromium, Hexavalent - 0.01-mg/L MCL & 0.001-mg/L DLR repealed September 2017	--	--	0.00002	2011	--	--
Cyanide	0.15	0.1	0.15	1997	0.2	0.2
Fluoride	2	0.1	1	1997	4.0	4.0
Mercury (inorganic)	0.002	0.001	0.0012	1999 (rev2005)*	0.002	0.002
Nickel	0.1	0.01	0.012	2001	--	--
Nitrate (as nitrogen, N)	10 as N	0.4	45 as NO3 (=10 as N)	2018	10	10
Nitrite (as N)	1 as N	0.4	1 as N	2018	1	1
Nitrate + Nitrite (as N)	10 as N	--	10 as N	2018	--	--
Perchlorate	0.006	0.002	0.001	2015	--	--
Selenium	0.05	0.005	0.03	2010	0.05	0.05
Thallium	0.002	0.001	0.0001	1999 (rev2004)	0.002	0.0005

Copper and Lead Table, 22 CCR §64672.3

Values referred to as MCLs for lead and copper are not actually MCLs; instead, they are called “Action Levels” under the lead and copper rule.

State Regulated Copper and Lead Contaminant	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Copper	1.3	0.05	0.3	2008	1.3	1.3
Lead	0.015	0.005	0.0002	2009	0.015	zero

Radiological Table, Radionuclides with MCLs in 22 CCR §64441 and §64443

[units are picocuries per liter (pCi/L), unless otherwise state; n/a = not applicable]

State Regulated Radionuclides Contaminant	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Gross alpha particle activity - OEHHA concluded in 2003 that a PHG was not practical	15	3	none	n/a	15	zero
Gross beta particle activity - OEHHA concluded in 2003 that a PHG was not practical	4 mrem/yr	4	none	n/a	4 mrem/yr	zero
Radium-226	--	1	0.05	2006		
Radium-228	--	1	0.019	2006		
Radium-226 + Radium-	5	--	--	--	5	zero

State Regulated Radionuclides Contaminant	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
228						
Strontium-90	8	2	0.35	2006	--	--
Tritium	"20,000"	"1,000"	400	2006	--	--
Uranium	20	1	0.43	2001	30 µg/L	zero

Organic Chemicals Table, Chemicals with MCLs in 22 CCR §64444

Volatile Organic Chemicals (VOCs)

State Regulated Volatile Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Benzene	0.001	0.0005	0.00015	2001	0.005	zero
Carbon tetrachloride	0.0005	0.0005	0.0001	2000	0.005	zero
1,2-Dichlorobenzene	0.6	0.0005	0.6	1997 (rev2009)	0.6	0.6
1,4-Dichlorobenzene (p-DCB)	0.005	0.0005	0.006	1997	0.075	0.075
1,1-Dichloroethane (1,1-DCA)	0.005	0.0005	0.003	2003	--	--
1,2-Dichloroethane (1,2-DCA)	0.0005	0.0005	0.0004	1999 (rev2005)	0.005	zero

State Regulated Volatile Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
1,1-Dichloroethylene (1,1-DCE)	0.006	0.0005	0.01	1999	0.007	0.007
cis-1,2-Dichloroethylene	0.006	0.0005	0.013	2018	0.07	0.07
trans-1,2-Dichloroethylene	0.01	0.0005	0.05	2018	0.1	0.1
Dichloromethane (Methylene chloride)	0.005	0.0005	0.004	2000	0.005	zero
1,2-Dichloropropane	0.005	0.0005	0.0005	1999	0.005	zero
1,3-Dichloropropene	0.0005	0.0005	0.0002	1999 (rev2006)	--	--
Ethylbenzene	0.3	0.0005	0.3	1997	0.7	0.7
Methyl tertiary butyl ether (MTBE)	0.013	0.003	0.013	1999	--	--
Monochlorobenzene	0.07	0.0005	0.07	2014	0.1	0.1
Styrene	0.1	0.0005	0.0005	2010	0.1	0.1
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0001	2003	0.1	0.1
Tetrachloroethylene (PCE)	0.005	0.0005	0.00006	2001	0.005	zero

State Regulated Volatile Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Toluene	0.15	0.0005	0.15	1999	1	1
1,2,4-Trichlorobenzene	0.005	0.0005	0.005	1999	0.07	0.07
1,1,1-Trichloroethane (1,1,1-TCA)	0.200	0.0005	1	2006	0.2	0.2
1,1,2-Trichloroethane (1,1,2-TCA)	0.005	0.0005	0.0003	2006	0.005	0.003
Trichloroethylene (TCE)	0.005	0.0005	0.0017	2009	0.005	zero
Trichlorofluoromethane (Freon 11)	0.15	0.005	1.3	2014	--	--
"1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)"	1.2	0.01	4	1997 (rev2011)	--	--
Vinyl chloride	0.0005	0.0005	0.00005	2000	0.002	zero
Xylenes	1.750	0.0005	1.8	1997	10	10

Non-Volatile Synthetic Organic Chemicals (SOCs)

State Regulated Non-Volatile Synthetic Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Alachlor	0.002	0.001	0.004	1997	0.002	zero

State Regulated Non-Volatile Synthetic Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Atrazine	0.001	0.0005	0.00015	1999	0.003	0.003
Bentazon	0.018	0.002	0.2	1999 (rev2009)	--	--
Benzo(a)pyrene	0.0002	0.0001	0.000007	2010	0.0002	zero
Carbofuran	0.018	0.005	0.0007	2016	0.04	0.04
Chlordane	0.0001	0.0001	0.00003	1997 (rev2006)	0.002	zero
Dalapon	0.2	0.01	0.79	1997 (rev2009)	0.2	0.2
1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0.00001	0.000003	2020	0.0002	zero
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.07	0.01	0.02	2009	0.07	0.07
Di(2-ethylhexyl)adipate	0.4	0.005	0.2	2003	0.4	0.4
Di(2-ethylhexyl)phthalate (DEHP)	0.004	0.003	0.012	1997	0.006	zero
Dinoseb	0.007	0.002	0.014	1997	0.007	0.007

State Regulated Non-Volatile Synthetic Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
				(rev2010)		
Diquat	0.02	0.004	0.006	2016	0.02	0.02
Endothal	0.1	0.045	0.094	2014	0.1	0.1
Endrin	0.002	0.0001	0.0003	2016	0.002	0.002
Ethylene dibromide (EDB)	0.00005	0.00002	0.00001	2003	0.00005	zero
Glyphosate	0.7	0.025	0.9	2007	0.7	0.7
Heptachlor	0.00001	0.00001	0.000008	1999	0.0004	zero
Heptachlor epoxide	0.00001	0.00001	0.000006	1999	0.0002	zero
Hexachlorobenzene	0.001	0.0005	0.00003	2003	0.001	zero
Hexachlorocyclopentadiene	0.05	0.001	0.002	2014	0.05	0.05
Lindane	0.0002	0.0002	0.000032	1999 (rev2005)	0.0002	0.0002
Methoxychlor	0.03	0.01	0.00009	2010	0.04	0.04
Molinate	0.02	0.002	0.001	2008	--	--
Oxamyl	0.05	0.02	0.026	2009	0.2	0.2

State Regulated Non-Volatile Synthetic Organic Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Pentachlorophenol	0.001	0.0002	0.0003	2009	0.001	zero
Picloram	0.5	0.001	0.166	2016	0.5	0.5
Polychlorinated biphenyls (PCBs)	0.0005	0.0005	0.00009	2007	0.0005	zero
Simazine	0.004	0.001	0.004	2001	0.004	0.004
Thiobencarb	0.07	0.001	0.042	2016	--	--
Toxaphene	0.003	0.001	0.00003	2003	0.003	zero
1,2,3-Trichloropropane	0.000005	0.000005	0.0000007	2009	--	--
2,3,7,8-TCDD (dioxin)	3x10-8	5x10-9	5x10-11	2010	3x10-8	zero
2,4,5-TP (Silvex)	0.05	0.001	0.003	2014	0.05	0.05

Disinfection Byproducts Table, Chemicals with MCLs in 22 CCR §64533

State Regulated Disinfection Byproducts Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Total Trihalomethanes	0.080	--	--	--	0.080	--

State Regulated Disinfection Byproducts Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
Bromodichloromethane	--	0.0010	0.00006	2020	--	zero
Bromoform	--	0.0010	0.0005	2020	--	zero
Chloroform	--	0.0010	0.0004	2020	--	0.07
Dibromochloromethane	--	0.0010	0.0001	2020	--	0.06
Haloacetic Acids (five) (HAA5)	0.060	--	--	--	0.060	--
Monochloroacetic Acid	--	0.0020	--	--	--	0.07
Dichloroacetic Adic	--	0.0010	--	--	--	zero
Trichloroacetic Acid	--	0.0010	--	--	--	0.02
Monobromoacetic Acid	--	0.0010	--	--	--	--
Dibromoacetic Acid	--	0.0010	--	--	--	--
Bromate	0.010	0.0050**	0.0001	2009	0.01	zero
Chlorite	1.0	0.020	0.05	2009	1	0.8

Chemicals with PHGs established in response to DDW requests. These are not currently regulated drinking water contaminants.

State Regulated Disinfection Byproducts Contaminants	State MCL	State DLR	State PHG	State Date of PHG	Federal MCL	Federal MCLG
N-Nitrosodimethylamine (NDMA)	--	--	0.000003	2006	--	--

*OEHHA's review of this chemical during the year indicated (rev20XX) resulted in no change in the PHG.

**The DLR for Bromate is 0.0010 mg/L for analysis performed using EPA Method 317.0 Revision 2.0, 321.8, or 326.0.

ATTACHMENT 3

HEALTH RISK INFORMATION FOR PUBLIC HEALTH GOAL EXCEEDANCE REPORTS

PREPARED BY OEHHA
FEBRUARY 2019

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

Public Health Goals

Health Risk Information for Public Health Goal Exceedance Reports

February 2022

Pesticide and Environmental Toxicology Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

Health Risk Information for Public Health Goal Exceedance Reports

Prepared by

Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

February 2022

NEW for the 2022 Report: New in this document are an updated Public Health Goal (PHG) for 1,2-dibromo-3-chloropropane (DBCP) and newly established PHGs for the trihalomethanes bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

Background: Under the Calderon-Sher Safe Drinking Water Act of 1996 (the Act), public water systems with more than 10,000 service connections are required to prepare a report every three years for contaminants that exceed their respective PHGs.[1] This document contains health risk information on regulated drinking water contaminants to assist public water systems in preparing these reports. A PHG is the concentration of a contaminant in drinking water that poses no significant health risk if consumed for a lifetime. PHGs are developed and published by the Office of Environmental Health Hazard Assessment (OEHHA) using current risk assessment principles, practices and methods.[2]

The water system's report is required to identify the health risk category (e.g., carcinogenicity or neurotoxicity) associated with exposure to each regulated contaminant in drinking water and to include a brief, plainly worded description of these risks. The report is also required to disclose the numerical public health risk, if available, associated with the California Maximum Contaminant Level (MCL) and with the PHG for each contaminant. This health risk information document is prepared by OEHHA every three years to assist the water systems in providing the required information in their reports.

[1] Health and Safety Code Section 116470(b)
[2] Health and Safety Code Section 116365

Numerical health risks: Table 1 presents health risk categories and cancer risk values for chemical contaminants in drinking water that have PHGs.

The Act requires that OEHHA publish PHGs based on health risk assessments using the most current scientific methods. As defined in statute, PHGs for non-carcinogenic chemicals in drinking water are set at a concentration "at which no known or anticipated adverse health effects will occur, with an adequate margin of safety." For carcinogens, PHGs are set at a concentration that "does not pose any significant risk to health." PHGs provide one basis for revising MCLs, along with cost and technological feasibility. OEHHA has been publishing PHGs since 1997 and the entire list published to date is shown in Table 1.

Table 2 presents health risk information for contaminants that do not have PHGs but have state or federal regulatory standards. The Act requires that, for chemical contaminants with California MCLs that do not yet have PHGs, water utilities use the federal Maximum Contaminant Level Goal (MCLG) for the purpose of complying with the requirement of public notification. MCLGs, like PHGs, are strictly health based and include a margin of safety. One difference, however, is that the MCLGs for carcinogens are set at zero because the US Environmental Protection Agency (US EPA) assumes there is no absolutely safe level of exposure to such chemicals. PHGs, on the other hand, are set at a level considered to pose no *significant* risk of cancer; this is usually no more than a one-in-one-million excess cancer risk (1×10^{-6}) level for a lifetime of exposure. In Table 2, the cancer risks shown are based on the US EPA's evaluations.

For more information on health risks: The adverse health effects for each chemical with a PHG are summarized in a PHG technical support document. These documents are available on the OEHHA website (https://oehha.ca.gov/water/public-health-goals-phgs).

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Alachlor	carcinogenicity (causes cancer)	0.004	NA[5,6]	0.002	NA
Aluminum	neurotoxicity and immunotoxicity (harms the nervous and immune systems)	0.6	NA	1	NA
Antimony	hepatotoxicity (harms the liver)	0.001	NA	0.006	NA
Arsenic	carcinogenicity (causes cancer)	0.000004 (4×10^{-6})	1×10^{-6} (one per million)	0.01	2.5×10^{-3} (2.5 per thousand)
Asbestos	carcinogenicity (causes cancer)	7 MFL[7] (fibers >10 microns in length)	1×10^{-6}	7 MFL (fibers >10 microns in length)	1×10^{-6} (one per million)
Atrazine	carcinogenicity (causes cancer)	0.00015	1×10^{-6}	0.001	7×10^{-6} (seven per million)

[1] Based on the OEHHA PHG technical support document unless otherwise specified. The categories are the hazard traits defined by OEHHA for California's Toxics Information Clearinghouse (online at: https://oehha.ca.gov/media/downloads/risk-assessment//gcregtext011912.pdf).
[2] mg/L = milligrams per liter of water or parts per million (ppm)
[3] Cancer Risk = Upper bound estimate of excess cancer risk from lifetime exposure. Actual cancer risk may be lower or zero. 1×10^{-6} means one excess cancer case per million people exposed.
[4] MCL = maximum contaminant level.
[5] NA = not applicable. Cancer risk cannot be calculated.
[6] The PHG for alachlor is based on a threshold model of carcinogenesis and is set at a level that is believed to be without any significant cancer risk to individuals exposed to the chemical over a lifetime.
[7] MFL = million fibers per liter of water.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Barium	cardiovascular toxicity (causes high blood pressure)	2	NA	1	NA
Bentazon	hepatotoxicity and digestive system toxicity (harms the liver, intestine, and causes body weight effects[8])	0.2	NA	0.018	NA
Benzene	carcinogenicity (causes leukemia)	0.00015	1×10^{-6}	0.001	7×10^{-6} (seven per million)
Benzo[a]pyrene	carcinogenicity (causes cancer)	0.000007 (7×10^{-6})	1×10^{-6}	0.0002	3×10^{-5} (three per hundred thousand)
Beryllium	digestive system toxicity (harms the stomach or intestine)	0.001	NA	0.004	NA
Bromate	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.01	1×10^{-4} (one per ten thousand)
Cadmium	nephrotoxicity (harms the kidney)	0.00004	NA	0.005	NA
Carbofuran	reproductive toxicity (harms the testis)	0.0007	NA	0.018	NA

[8] Body weight effects are an indicator of general toxicity in animal studies.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Carbon tetrachloride	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.0005	5×10^{-6} (five per million)
Chlordane	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.0001	3×10^{-6} (three per million)
Chlorite	hematotoxicity (causes anemia) neurotoxicity (causes neurobehavioral effects)	0.05	NA	1	NA
Chromium, hexavalent	carcinogenicity (causes cancer)	0.00002	1×10^{-6}	none	NA
Copper	digestive system toxicity (causes nausea, vomiting, diarrhea)	0.3	NA	1.3 (AL[9])	NA
Cyanide	neurotoxicity (damages nerves) endocrine toxicity (affects the thyroid)	0.15	NA	0.15	NA
Dalapon	nephrotoxicity (harms the kidney)	0.79	NA	0.2	NA
Di(2-ethylhexyl) adipate (DEHA)	developmental toxicity (disrupts development)	0.2	NA	0.4	NA

[9] AL = action level. The action levels for copper and lead refer to a concentration measured at the tap. Much of the copper and lead in drinking water is derived from household plumbing (The Lead and Copper Rule, Title 22, California Code of Regulations [CCR] section 64672.3).

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Di(2-ethylhexyl) phthalate (DEHP)	carcinogenicity (causes cancer)	0.012	1×10^{-6}	0.004	3×10^{-7} (three per ten million)
1,2-Dibromo-3-chloropropane (DBCP)	carcinogenicity (causes cancer)	0.000003 ($3x10^{-6}$)	1×10^{-6}	0.0002	7×10^{-5} (seven per hundred thousand)
1,2-Dichloro-benzene (*o*-DCB)	hepatotoxicity (harms the liver)	0.6	NA	0.6	NA
1,4-Dichloro-benzene (*p*-DCB)	carcinogenicity (causes cancer)	0.006	1×10^{-6}	0.005	8×10^{-7} (eight per ten million)
1,1-Dichloro-ethane (1,1-DCA)	carcinogenicity (causes cancer)	0.003	1×10^{-6}	0.005	2×10^{-6} (two per million)
1,2-Dichloro-ethane (1,2-DCA)	carcinogenicity (causes cancer)	0.0004	1×10^{-6}	0.0005	1×10^{-6} (one per million)
1,1-Dichloro-ethylene (1,1-DCE)	hepatotoxicity (harms the liver)	0.01	NA	0.006	NA
1,2-Dichloro-ethylene, cis	nephrotoxicity (harms the kidney)	0.013	NA	0.006	NA
1,2-Dichloro-ethylene, trans	immunotoxicity (harms the immune system)	0.05	NA	0.01	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Dichloromethane (methylene chloride)	carcinogenicity (causes cancer)	0.004	1×10^{-6}	0.005	1×10^{-6} (one per million)
2,4-Dichloro-phenoxyacetic acid (2,4-D)	hepatotoxicity and nephrotoxicity (harms the liver and kidney)	0.02	NA	0.07	NA
1,2-Dichloro-propane (propylene dichloride)	carcinogenicity (causes cancer)	0.0005	1×10^{-6}	0.005	1×10^{-5} (one per hundred thousand)
1,3-Dichloro-propene (Telone II®)	carcinogenicity (causes cancer)	0.0002	1×10^{-6}	0.0005	2×10^{-6} (two per million)
Dinoseb	reproductive toxicity (harms the uterus and testis)	0.014	NA	0.007	NA
Diquat	ocular toxicity (harms the eye) developmental toxicity (causes malformation)	0.006	NA	0.02	NA
Endothall	digestive system toxicity (harms the stomach or intestine)	0.094	NA	0.1	NA
Endrin	neurotoxicity (causes convulsions) hepatotoxicity (harms the liver)	0.0003	NA	0.002	NA
Ethylbenzene (phenylethane)	hepatotoxicity (harms the liver)	0.3	NA	0.3	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Ethylene dibromide (1,2-Dibromoethane)	carcinogenicity (causes cancer)	0.00001	1×10^{-6}	0.00005	5×10^{-6} (five per million)
Fluoride	musculoskeletal toxicity (causes tooth mottling)	1	NA	2	NA
Glyphosate	nephrotoxicity (harms the kidney)	0.9	NA	0.7	NA
Heptachlor	carcinogenicity (causes cancer)	0.000008 (8×10^{-6})	1×10^{-6}	0.00001	1×10^{-6} (one per million)
Heptachlor epoxide	carcinogenicity (causes cancer)	0.000006 (6×10^{-6})	1×10^{-6}	0.00001	2×10^{-6} (two per million)
Hexachloroben-zene	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.001	3×10^{-5} (three per hundred thousand)
Hexachloro-cyclopentadiene (HCCPD)	digestive system toxicity (causes stomach lesions)	0.002	NA	0.05	NA
Lead	developmental neurotoxicity (causes neurobehavioral effects in children) cardiovascular toxicity (causes high blood pressure) carcinogenicity (causes cancer)	0.0002	$<1\times10^{-6}$ (PHG is not based on this effect)	0.015 (AL[9])	2×10^{-6} (two per million)

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Lindane (γ-BHC)	carcinogenicity (causes cancer)	0.000032	1×10^{-6}	0.0002	6×10^{-6} (six per million)
Mercury (inorganic)	nephrotoxicity (harms the kidney)	0.0012	NA	0.002	NA
Methoxychlor	endocrine toxicity (causes hormone effects)	0.00009	NA	0.03	NA
Methyl tertiary-butyl ether (MTBE)	carcinogenicity (causes cancer)	0.013	1×10^{-6}	0.013	1×10^{-6} (one per million)
Molinate	carcinogenicity (causes cancer)	0.001	1×10^{-6}	0.02	2×10^{-5} (two per hundred thousand)
Monochloro-benzene (chlorobenzene)	nephrotoxicity (harms the kidney)	0.07	NA	0.07	NA
Nickel	developmental toxicity (causes increased neonatal deaths)	0.012	NA	0.1	NA
Nitrate	hematotoxicity (causes methemoglobinemia)	45 as nitrate	NA	10 as nitrogen (=45 as nitrate)	NA
Nitrite	hematotoxicity (causes methemoglobinemia)	3 as nitrite	NA	1 as nitrogen (=3 as nitrite)	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Nitrate and Nitrite	hematotoxicity (causes methemoglobinemia)	10 as nitrogen[10]	NA	10 as nitrogen	NA
N-nitroso-dimethyl-amine (NDMA)	carcinogenicity (causes cancer)	0.000003 (3×10^{-6})	1×10^{-6}	none	NA
Oxamyl	general toxicity (causes body weight effects)	0.026	NA	0.05	NA
Pentachloro-phenol (PCP)	carcinogenicity (causes cancer)	0.0003	1×10^{-6}	0.001	3×10^{-6} (three per million)
Perchlorate	endocrine toxicity (affects the thyroid) developmental toxicity (causes neurodevelop-mental deficits)	0.001	NA	0.006	NA
Picloram	hepatotoxicity (harms the liver)	0.166	NA	0.5	NA
Polychlorinated biphenyls (PCBs)	carcinogenicity (causes cancer)	0.00009	1×10^{-6}	0.0005	6×10^{-6} (six per million)
Radium-226	carcinogenicity (causes cancer)	0.05 pCi/L	1×10^{-6}	5 pCi/L (combined $Ra^{226+228}$)	1×10^{-4} (one per ten thousand)

[10] The joint nitrate/nitrite PHG of 10 mg/L (10 ppm, expressed as nitrogen) does not replace the individual values, and the maximum contribution from nitrite should not exceed 1 mg/L nitrite-nitrogen.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Radium-228	carcinogenicity (causes cancer)	0.019 pCi/L	1×10^{-6}	5 pCi/L (combined $Ra^{226+228}$)	3×10^{-4} (three per ten thousand)
Selenium	integumentary toxicity (causes hair loss and nail damage)	0.03	NA	0.05	NA
Silvex (2,4,5-TP)	hepatotoxicity (harms the liver)	0.003	NA	0.05	NA
Simazine	general toxicity (causes body weight effects)	0.004	NA	0.004	NA
Strontium-90	carcinogenicity (causes cancer)	0.35 pCi/L	1×10^{-6}	8 pCi/L	2×10^{-5} (two per hundred thousand)
Styrene (vinylbenzene)	carcinogenicity (causes cancer)	0.0005	1×10^{-6}	0.1	2×10^{-4} (two per ten thousand)
1,1,2,2-Tetrachloro-ethane	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.001	1×10^{-5} (one per hundred thousand)
2,3,7,8-Tetra-chlorodibenzo-*p*-dioxin (TCDD, or dioxin)	carcinogenicity (causes cancer)	5×10^{-11}	1×10^{-6}	3×10^{-8}	6×10^{-4} (six per ten thousand)

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Tetrachloro-ethylene (perchloro-ethylene, or PCE)	carcinogenicity (causes cancer)	0.00006	1×10^{-6}	0.005	8×10^{-5} (eight per hundred thousand)
Thallium	integumentary toxicity (causes hair loss)	0.0001	NA	0.002	NA
Thiobencarb	general toxicity (causes body weight effects) hematotoxicity (affects red blood cells)	0.042	NA	0.07	NA
Toluene (methylbenzene)	hepatotoxicity (harms the liver) endocrine toxicity (harms the thymus)	0.15	NA	0.15	NA
Toxaphene	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.003	1×10^{-4} (one per ten thousand)
1,2,4-Trichloro-benzene	endocrine toxicity (harms adrenal glands)	0.005	NA	0.005	NA
1,1,1-Trichloro-ethane	neurotoxicity (harms the nervous system), reproductive toxicity (causes fewer offspring) hepatotoxicity (harms the liver) hematotoxicity (causes blood effects)	1	NA	0.2	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
1,1,2-Trichloro-ethane	carcinogenicity (causes cancer)	0.0003	$1x10^{-6}$	0.005	2×10^{-5} (two per hundred thousand)
Trichloro-ethylene (TCE)	carcinogenicity (causes cancer)	0.0017	1×10^{-6}	0.005	3×10^{-6} (three per million)
Trichlorofluoro-methane (Freon 11)	accelerated mortality (increase in early death)	1.3	NA	0.15	NA
1,2,3-Trichloro-propane (1,2,3-TCP)	carcinogenicity (causes cancer)	0.0000007 (7×10^{-7})	$1x10^{-6}$	0.000005 (5×10^{-6})	7×10^{-6} (seven per million)
1,1,2-Trichloro-1,2,2-trifluoro-ethane (Freon 113)	hepatotoxicity (harms the liver)	4	NA	1.2	NA
Trihalomethanes: Bromodichloro-methane	carcinogenicity (causes cancer)	0.00006	$1x10^{-6}$	0.080*	1.3×10^{-3} (1.3 per thousand)[11]
Trihalomethanes: Bromoform	carcinogenicity (causes cancer)	0.0005	$1x10^{-6}$	0.080*	2×10^{-4} (two per ten thousand)[12]

* For total trihalomethanes (the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane). There are no MCLs for individual trihalomethanes.

[11] Based on 0.080 mg/L bromodichloromethane; the risk will vary with different combinations and ratios of the other trihalomethanes in a particular sample.

[12] Based on 0.080 mg/L bromoform; the risk will vary with different combinations and ratios of the other trihalomethanes in a particular sample.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Trihalomethanes: Chloroform	carcinogenicity (causes cancer)	0.0004	$1x10^{-6}$	0.080*	2×10^{-4} (two per ten thousand)[13]
Trihalomethanes: Dibromochloro-methane	carcinogenicity (causes cancer)	0.0001	$1x10^{-6}$	0.080*	8×10^{-4} (eight per ten thousand)[14]
Tritium	carcinogenicity (causes cancer)	400 pCi/L	$1x10^{-6}$	20,000 pCi/L	5×10^{-5} (five per hundred thousand)
Uranium	carcinogenicity (causes cancer)	0.43 pCi/L	1×10^{-6}	20 pCi/L	5×10^{-5} (five per hundred thousand)
Vinyl chloride	carcinogenicity (causes cancer)	0.00005	1×10^{-6}	0.0005	1×10^{-5} (one per hundred thousand)
Xylene	neurotoxicity (affects the senses, mood, and motor control)	1.8 (single isomer or sum of isomers)	NA	1.75 (single isomer or sum of isomers)	NA

* For total trihalomethanes (the sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane). There are no MCLs for individual trihalomethanes.
[13] Based on 0.080 mg/L chloroform; the risk will vary with different combinations and ratios of the other trihalomethanes in a particular sample.
[14] Based on 0.080 mg/L dibromochloromethane; the risk will vary with different combinations and ratios of the other trihalomethanes in a particular sample.

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] at the MCLG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Disinfection byproducts (DBPs)					
Chloramines	acute toxicity (causes irritation) digestive system toxicity (harms the stomach) hematotoxicity (causes anemia)	4[5,6]	NA[7]	none	NA
Chlorine	acute toxicity (causes irritation) digestive system toxicity (harms the stomach)	4[5,6]	NA	none	NA
Chlorine dioxide	hematotoxicity (causes anemia) neurotoxicity (harms the nervous system)	0.8[5,6]	NA	none	NA
Disinfection byproducts: haloacetic acids (HAA5)					
Monochloroacetic acid (MCA)	general toxicity (causes body and organ weight changes[8])	0.07	NA	none	NA

[1] Health risk category based on the US EPA MCLG document or California MCL document unless otherwise specified.
[2] MCLG = maximum contaminant level goal established by US EPA.
[3] Cancer Risk = Upper estimate of excess cancer risk from lifetime exposure. Actual cancer risk may be lower or zero. 1×10^{-6} means one excess cancer case per million people exposed.
[4] California MCL = maximum contaminant level established by California.
[5] Maximum Residual Disinfectant Level Goal, or MRDLG.
[6] The federal Maximum Residual Disinfectant Level (MRDL), or highest level of disinfectant allowed in drinking water, is the same value for this chemical.
[7] NA = not available.
[8] Body weight effects are an indicator of general toxicity in animal studies.

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] at the MCLG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Dichloroacetic acid (DCA)	Carcinogenicity (causes cancer)	0	0	none	NA
Trichloroacetic acid (TCA)	hepatotoxicity (harms the liver)	0.02	NA	none	NA
Monobromoacetic acid (MBA)	NA	none	NA	none	NA
Dibromoacetic acid (DBA)	NA	none	NA	none	NA
Total haloacetic acids (sum of MCA, DCA, TCA, MBA, and DBA)	general toxicity, hepatotoxicity and carcinogenicity (causes body and organ weight changes, harms the liver and causes cancer)	none	NA	0.06	NA
Radionuclides					
Gross alpha particles[9]	carcinogenicity (causes cancer)	0 (^{210}Po included)	0	15 pCi/L[10] (includes radium but not radon and uranium)	up to $1x10^{-3}$ (for ^{210}Po, the most potent alpha emitter)

[9] MCLs for gross alpha and beta particles are screening standards for a group of radionuclides. Corresponding PHGs were not developed for gross alpha and beta particles. See the OEHHA memoranda discussing the cancer risks at these MCLs at http://www.oehha.ca.gov/water/reports/grossab.html.

[10] pCi/L = picocuries per liter of water.

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] at the MCLG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Beta particles and photon emitters[9]	carcinogenicity (causes cancer)	0 (^{210}Pb included)	0	50 pCi/L (judged equiv. to 4 mrem/yr)	up to $2x10^{-3}$ (for ^{210}Pb, the most potent beta-emitter)

ATTACHMENT 4

El DORADO IRRIGATION DISTRICT
2019, 2020 AND 2021 CONSUMER CONFIDENCE REPORTS

EL DORADO IRRIGATION DISTRICT

2019 Water Quality Report

Water testing performed in 2019

MAIN WATER SYSTEM

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

About the Water Quality Report (Consumer Confidence Report)

The Water Quality Report is an annual summary of the results of ongoing tests for contaminants in drinking water. The report is designed to inform you of the quality of your drinking water. Each year, the State Water Resources Control Board and U.S. Environmental Protection Agency require EID to compile and distribute a report to all of our water customers. The report includes a comparison of the District's water quality to state and federal standards.

Where Your Water Comes From

EID has rights to approximately 75,000 acre-feet of water from various sources in the Sierra Nevada foothills. (An acre-foot equals one acre of land covered by a foot of water; there are 325,851 gallons in an acre-foot.) Jenkinson Lake, at the center of Sly Park Recreation Area, provides nearly one half of the Main System's water supply and is treated at the Reservoir A water treatment plant in Pollock Pines. Forebay Reservoir in Pollock Pines delivers water to the Reservoir 1 water treatment plant under a pre-1914 water right from the high-alpine streams and lakes that are part of our Project 184 hydropower system. We have a water contract with the Bureau of Reclamation at Folsom Lake, which Reclamation operates as part of the state's Central Valley Water Project. We also hold ditch water rights (Weber, Slab, and Hangtown creeks), water rights at Weber Reservoir, and a water right under Permit 21112 for Project 184 water—all of which is delivered from Folsom Lake through the El Dorado Hills water treatment plant. The EID Main water system provides water to approximately 127,764 people within a 225 square mile service area.

About EID

EID is a multi-service public utility serving drinking water to approximately 128,000 people in El Dorado County. The District holds water rights in the Sierra Nevada foothills that date back to the Gold Rush. Today EID provides a unique combination of services—from drinking water and water for pastures, orchards, and vineyards to wastewater treatment, recycled water for irrigated landscapes and back and front yards, hydroelectric and solar power generation, water efficiency programs, and outstanding recreation in Sierra Nevada alpine and western slope environments.

Information about potential sources of pollution

The State Water Resources Control Board, Division of Drinking Water requires water providers to conduct a source water assessment to help protect the quality of water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten the quality of the source water, and an evaluation of the water's vulnerability to the threats.

The last updated assessments of EID's drinking water sources were completed in 2018. Our source water is considered most vulnerable to recreation, residential sewer, septic system, and urban runoff activities, which are associated with constituents detected in the water supply. Our source water is also considered most vulnerable to illegal activities, dumping, fertilizer, pesticide and herbicide application, forest activities, and wildfires, although constituents associated with these activities were not detected.

Copies of the assessments are available online at www.eid.org in our Document Library or at the State Water Resources Control Board, Division of Drinking Water, Sacramento District Office, 1001 I Street, 17th Floor, Sacramento, CA 95814. To view them, contact Ali Rezvani, Sacramento District Engineer, at 916-445-5285, or Radenko Odzakovic, EID Drinking Water Operations Division Manager, at 530-642-4060.

Testing the water

To help ensure safe water is delivered to our customers, EID's water quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the District's service area. Analyses cover more than 100 different constituents. Analysis of the water is performed at state-certified commercial labs. The State of California may grant monitoring waivers for contaminants when historical monitoring results are less than the Maximum Contaminant Level. As a result, some of our data, although representative, may be more than a year old.

The table on page 4 lists all constituents that were detected in 2019 under our monitoring and testing program. The information shows EID meets or exceeds all state and federal drinking water standards. When available, the data reported reflects the treated water supply.

A Note for Sensitive Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. EID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, or at www.epa.gov/safewater/lead.

Lead in Schools

In January 2017, the State Water Resources Control Board, Division of Drinking Water amended public water system domestic water supply permits to require for lead monitoring and lead sample result interpretation at K–12 schools served by the water system that have submitted a written request for lead sampling related assistance. Seventeen schools requested testing related to this requirement.

In October 2017, the Governor approved AB 746 amending the Health and Safety Code (HSC) §116277. The new law requires Community Water Systems serving public school sites of a local education agency with buildings constructed before January 1, 2010 to test for lead in the potable water system of the school site before July 1, 2019. Thirty-six schools out of 36 schools served by the Main Water System have been sampled to date. Please contact your individual school for a copy of the results or email the State Lead Sampling for Schools Specialist at DDW-PLU@waterboards.ca.gov with your request.

Questions?

For more information from EID about this report, contact the Drinking Water Division Operations Manager, at 530-642-4060.

For information from the State Water Resources Control Board, Division of Drinking Water, contact Ali Rezvani, Sacramento District Engineer, at 916-445-5285.

Safe Drinking Water Hotline: 1-800-426-4791

The following definitions help explain information in the table on the next page.

Maximum contaminant level (MCL): The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHG or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCL) are set to protect the odor, taste, and appearance of drinking water.

Maximum contaminant level goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. The U.S. Environmental Protection Agency (EPA) sets these levels.

Maximum residual disinfectant level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum residual disinfectant level goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary drinking water standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Public health goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.

Regulatory action level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements for water systems.

Treatment technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Main Water System - Source Water Quality

Primary Standards - Health Based (units)	Primary MCL	PHG (MCLG)	Highest Single Measurement	Lowest Monthly Percentage of Samples Meeting Limits	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Turbidity - Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	NA	0.18	NA	No	2019	Soil runoff
Turbidity - Lowest Monthly % of theTreated Surface Water Meeting NTU Requirements	TT = 95% of samples ≤ 0.3 NTU	NA	NA	100%	No	2019	Soil runoff

Secondary Standards - Aesthetic (units)	Secondary MCL	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chloride (mg/L)	500	NA	ND-3.4	2.0	No	2019	Runoff/leaching from natural deposits; seawater influence
Corrosivity (A.I.)	Non-corrosive	NA	9.9-10.0	10.0	No	2019	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Odor-Threshold (units)	3	NA	2	2	No	2019	Naturally-occurring organic materials
Specific Conductance (µmhos/cm)	1600	NA	40-62	53	No	2019	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	NA	ND-1.1	0.4	No	2019	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	1000	NA	27-41	36	No	2019	Runoff/leaching from natural deposits
Turbidity (NTU)	5	NA	ND-0.30	0.14	No	2019	Soil runoff

Other Parameters (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Alkalinity (mg/L)	Unregulated	NA	12-24	19	NA	2019	No Known Typical Source of Constituent
Bicarbonate (mg/L)	Unregulated	NA	14-29	23	NA	2019	
Calcium (mg/L)	Unregulated	NA	2-4	3	NA	2019	
Hardness as CaCO3 (mg/L)	Unregulated	NA	8-16	12	NA	2019	
Hardness as CaCO3 (grains/gal)	Unregulated	NA	0.47-0.93	0.70	NA	2019	
Magnesium (mg/L)	Unregulated	NA	0.5-1.6	1.1	NA	2019	
pH (pH units)	Unregulated	NA	7.6-8.1	7.9	NA	2019	
Sodium (mg/L)	Unregulated	NA	4.8-7.4	6.0	NA	2019	

Disinfection Byproduct Precursors (units)	Action Level	PHG (MRDLG)	Range of Detection	Lowest RAA Quarterly Average	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Organic Carbon [TOC] Filtered water (µg/L)	TT= Removal	NA	620-1100	NA	NA	2019	Various natural and manmade sources
Total Organic Carbon [TOC] Removal Ratio (Actual/Required)	TT=>1.0	NA	NA	1.0	No	2019	Various natural and manmade sources

Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	Primary MCL (MRDL) [SMCL]	PHG (MRDLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Organic Carbon [TOC] Source water (µg/L)	Unregulated	NA	1100-2500	1442	NA	2019	Various natural and manmade sources
Manganese (µg/L)	[50], NL=500	NA	0-9	4	NA	2019	Leaching from natural deposits

Main Water System - Distribution System Water Quality

Disinfection Byproducts and Disinfectant Residuals (units)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Highest Running Annual Average (RAA)	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chlorine [as Cl_2] (mg/L)	(4.0)	(4)	0.42-0.75	0.59	No	2019	Drinking water disinfectant added for treatment
HAA5 [Total of five Haloacetic Acids] (µg/L)	60	NA	21-57	55 [1]	No	2019	Byproduct of drinking water disinfection
TTHMs [Total of four Trihalomethanes] (µg/L)	80	NA	29-76	61 [1]	No	2019	Byproduct of drinking water chlorination

Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Bromochloroacetic acid (BCAA)(µg/L)	Unregulated	NA	ND-0.76	0.37	NA	2019	Byproduct of drinking water disinfection
Bromodichloroacetic acid (BDCAA) (µg/L)	Unregulated	NA	ND-1.4	0.90	NA	2019	Byproduct of drinking water disinfection
Dibromoacetic acid (DBAA)(µg/L)	Unregulated	NA	ND-0.4	0.01	NA	2019	Byproduct of drinking water disinfection
Dichloroacetic acid (DCAA)(µg/L)	Unregulated	NA	ND-18	9	NA	2019	Byproduct of drinking water disinfection
Monochloroacetic acid (MCAA)(µg/L)	Unregulated	NA	ND-29	3	NA	2019	Byproduct of drinking water disinfection
Trichloroacetic acid (TCAA)(µg/L)	Unregulated	NA	ND-39	23	NA	2019	Byproduct of drinking water disinfection

Inorganic Constituents (units)	Action Level	PHG (MCLG)	Sample Data	90th % Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent	Number of Schools Requesting Lead Sampling
Copper (mg/L)[at the tap]	1.3	0.3	None of the 50 samples collected exceeded the action level	0.15	No	2017	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	NA
Lead (ug/L)[at the tap]	15	0.2	1 of the 50 samples collected exceeded the action level	2.4	No	2017	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	35 [2]

[1] Highest Locational Running Annual Average (LRAA).

[2] Thirty-five public K-12 schools were tested between 2017-2019.

KEY

NA=not applicable
ND=not detected
NR=not reportable

NTU=nephelometric turbidity unit (measure of clarity)
mg/L=milligrams/liter
µg/L=micrograms/liter
µmho/cm=micromhos per centimeter

Your Drinking Water—What You Should Know

The sources of drinking water-both tap and bottled-include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

The following contaminants may be present in source water before it is treated.

- **Microbial contaminants** such as viruses and bacteria from sewage treatment plants, septic systems, livestock operations, and wildlife.
- **Inorganic contaminants** such as salts and metals that occur naturally or stem from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides** from sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants** such as synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production or that come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- **Radioactive contaminants** that occur naturally or are the result of oil and gas production and mining activities.

Unregulated contaminant monitoring helps EPA and the State Water Resources Control Board determine where certain contaminants occur and whether the contaminants need to be regulated.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

NOTE: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 for more about contaminants and potential health effects.

Get Involved

The El Dorado Irrigation District Board of Directors meetings are open to the public and are held on the second and fourth Mondays of each month. Meetings begin at 9:00 a.m. in the Placerville headquarters building at 2890 Mosquito Road. Go to the District website at www.eid.org to learn more.

The information provided in this report is required by law to be issued to every water user. Property owners: please share this information with your tenants.

Jenkinson Lake at Sly Park Recreation Area in Pollock Pines

In accordance with the Americans with Disabilities Act and California law, it is the policy of the El Dorado Irrigation District to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including individuals with disabilities. If you are a person with a disability and require information or materials in an appropriate alternative format; or if you require any other accommodation, please contact the ADA Coordinator at the number or address below at least 72 hours prior to the meeting or when you desire to receive services. Advance notification within this guideline will enable the District to make reasonable arrangements to ensure accessibility. The District ADA Coordinator can be reached by phone at (530) 642-4045 or e-mail at adacoordinator@eid.org.

EL DORADO IRRIGATION DISTRICT

2020

Water Quality Report

Water testing performed in 2020

www.eid.org/main

MAIN WATER SYSTEM

Este informe contiene información muy importante sobre su agua beber.
Tradúzcalo o hable con alguien que lo entienda bien.

About the Water Quality Report (Consumer Confidence Report)

The Water Quality Report is an annual summary of the results of ongoing tests for contaminants in drinking water. The report is designed to inform you of the quality of your drinking water. Each year, the State Water Resources Control Board and U.S. Environmental Protection Agency require EID to compile and distribute a report to all of our water customers. The report includes a comparison of the District's water quality to state and federal standards.

Where Your Water Comes From

EID has rights to approximately 75,000 acre-feet of water from various sources in the Sierra Nevada foothills. (An acre-foot equals one acre of land covered by a foot of water; there are 325,851 gallons in an acre-foot.) Jenkinson Lake, at the center of Sly Park Recreation Area, provides nearly one half of the Main System's water supply and is treated at the Reservoir A water treatment plant in Pollock Pines. Forebay Reservoir in Pollock Pines delivers water to the Reservoir 1 water treatment plant under a pre-1914 water right from the high-alpine streams and lakes that are part of our Project 184 hydropower system. We have a water contract with the Bureau of Reclamation at Folsom Lake, which Reclamation operates as part of the state's Central Valley Water Project. We also hold ditch water rights (Weber, Slab, and Hangtown creeks), water rights at Weber Reservoir, and a water right under Permit 21112 for Project 184 water—all of which is delivered from Folsom Lake through the El Dorado Hills water treatment plant. The EID Main water system provides water to approximately 129,007 people within a 225 square mile service area.

About El Dorado Irrigation District

EID is a multi-service public utility serving drinking water to approximately 129,007 people in El Dorado County. The District holds water rights in the Sierra Nevada foothills that date back to the Gold Rush. Today EID provides a unique combination of services—from drinking water and water for pastures, orchards, and vineyards to wastewater treatment, recycled water for irrigated landscapes and back and front yards, hydroelectric and solar power generation, water efficiency programs, and outstanding recreation in Sierra Nevada alpine and western slope environments.

Your Drinking Water—What You Should Know

The sources of drinking water—both tap and bottled—include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants** including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- **Radioactive contaminants** that can be naturally-occurring or are the result of oil and gas production and mining activities.

Unregulated contaminant monitoring helps EPA and the State Water Resources Control Board determine where certain contaminants occur and whether the contaminants need to be regulated.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottles water that provide the same protection.

NOTE: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 for more about contaminants and potential health effects.

Information about Potential Sources of Pollution

The State Water Resources Control Board, Division of Drinking Water requires water providers to conduct a source water assessment to help protect the quality of water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten the quality of the source water, and an evaluation of the water's vulnerability to the threats.

The last updated assessments of EID's drinking water sources were completed in 2018. Our source water is considered most vulnerable to recreation, residential sewer, septic system, and urban runoff activities, which are associated with constituents detected in the water supply. Our source water is also considered most vulnerable to illegal activities, dumping, fertilizer, pesticide and herbicide application, forest activities, and wildfires, although constituents associated with these activities were not detected.

Copies of the assessments are available online at www.eid.org in our Document Library or at the State Water Resources Control Board, Division of Drinking Water, Sacramento District Office, 1001 I Street, 17th Floor, Sacramento, CA 95814. To view them, contact Ali Rezvani, Sacramento District Engineer, at 916-445-5285, or Radenko Odzakovic, EID Drinking Water Operations Division Manager, at 530-642-4060.

Testing the Water

To help ensure safe water is delivered to our customers, EID's water quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the District's service area. Analyses cover more than 100 different constituents. Analysis of the water is performed at state-certified commercial labs. The state of California may grant monitoring waivers for contaminants when historical monitoring results are less than the Maximum Contaminant Level. As a result, some of our data, although representative, may be more than a year old. The table on page four lists all constituents that were detected under our monitoring and testing program. The information shows EID meets or exceeds all state and federal drinking water standards. When available, the data reported reflects the treated water supply.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

A Note for Sensitive Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. EID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, or at www.epa.gov/safewater/lead.

Lead in Schools

In January 2017, the State Water Resources Control Board, Division of Drinking Water amended public water system domestic water supply permits to require for lead monitoring and lead sample result interpretation at K–12 schools served by the water system that have submitted a written request for lead sampling related assistance. Seventeen schools requested testing related to this requirement. In October 2017, the Governor approved AB 746 amending the Health and Safety Code (HSC) §116277. The new law requires Community Water Systems serving public school sites of a local education agency with buildings constructed before January 1, 2010 to test for lead in the potable water system of the school site before July 1, 2019. Thirty-five public schools out of thirty-five public schools served by the Main Water System have been sampled between 2017 and 2019; an additional four private schools were also tested. Please contact your individual school for a copy of the results or email the State Lead Sampling for Schools Specialist at DDW-PLU@waterboards.ca.gov with your request.

The following definitions help explain information in the tables on the following pages.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCL) are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (EPA).

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCL, MRDLs and treatment techniques (TTs) for contaminants that affect health, along with their monitoring and reporting requirements.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Main Water System - Source Water Quality

Primary Standards - Health Based (units)	Primary MCL	PHG (MCLG)	Highest Single Measurement	Lowest Monthly Percentage of Samples Meeting Limits	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Turbidity - Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	NA	0.15	NA	No	2020	Soil runoff
Turbidity - Lowest Monthly % of the Treated Surface Water Meeting NTU Requirements	TT = 95% of samples ≤ 0.3 NTU	NA	NA	100%	No	2020	Soil runoff

Microbiologicial (units)	Primary MCL	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Cryptosporidium (Oocysts/L)	TT	(0)	0-4.0	0	No	2020	Naturally present in the environment

Secondary Standards - Aesthetic (units)	Secondary MCL	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chloride (mg/L)	500	NA	3-6	5	No	2020	Runoff/leaching from natural deposits; seawater influence
Corrosivity (A.I.)	Non-corrosive	NA	9.6-10.2	9.8	No	2020	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Specific Conductance (µmhos/cm)	1600	NA	51-94	68	No	2020	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	NA	0.5-2.6	1.2	No	2020	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	1000	NA	34-58	44	No	2020	Runoff/leaching from natural deposits
Turbidity (NTU)	5	NA	0.44-2.0	1.01	No	2020	Soil runoff

Other Parameters (units)	Notification Level	PHG (MCLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Alkalinity (mg/L)	Unregulated	NA	16-33	23	NA	2020	No Known Typical Source of Constituent
Bicarbonate (mg/L)	Unregulated	NA	20-40	28	NA	2020	
Calcium (mg/L)	Unregulated	NA	3-7	4	NA	2020	
Hardness as CaCO3 (mg/L)	Unregulated	NA	10-29	17	NA	2020	
Hardness as CaCO3 (grains/gal)	Unregulated	NA	0.58-1.70	0.99	NA	2020	
Magnesium (mg/L)	Unregulated	NA	0.5-3.0	1.5	NA	2020	
pH (pH units)	Unregulated	NA	7.62-7.95	7.83	NA	2020	
Sodium (mg/L)	Unregulated	NA	5.1-6.4	5.8	NA	2020	

Disinfection Byproduct Precursors (units)	Action Level	PHG (MRDLG)	Range of Detection	Lowest RAA Quarterly Average	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Organic Carbon [TOC] Filtered water (µg/L)	TT= Removal	NA	790-1300	NA	NA	2020	Various natural and manmade sources
Total Organic Carbon [TOC] Removal Ratio (Actual/Required)	TT=>1.0	NA	NA	1.0	No	2020	Various natural and manmade sources

Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	Primary MCL (MRDL) [SMCL]	PHG (MRDLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Organic Carbon [TOC] Source water (µg/L)	Unregulated	NA	1100-2500	1442	NA	2019	Various natural and manmade sources
Manganese (µg/L)	[50], NL=500	NA	0-9	4	NA	2019	Leaching from natural deposits

KEY

NA=not applicable
ND=not detected
NR=not reportable

NTU=nephelometric turbidity unit (measure of clarity)
mg/L=milligrams/liter
µg/L=micrograms/liter
µmho/cm=micromhos per centimeter

Units		Equivalence
mg/L – milligrams per liter	ppm – parts per million	1 second in 11.5 days
µg/L – micrograms per liter	ppb – parts per billion	1 second in nearly 32 years
ng/L – nanograms per liter	ppt – parts per trillion	1 second in nearly 32,000 years
pg/L – picograms per liter	ppq – parts per quadrillion	1 second in nearly 32,000,000 years

Main Water System - Distribution System Water Quality

Microbiological Constituents (units)	Primary MCL	PHG (MCLG)	Value	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Total Coliform Bacteria > 40 Samples/Month (Present / Absent)	No more than 5% positive monthly sample	(0)	Highest number of monthly samples positive was 1%	No	2020	Naturally present in the environment

Disinfection Byproducts and Disinfectant Residuals (units)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Highest Running Annual Average (RAA)	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Chlorine [as Cl_2] (mg/L)	(4.0)	(4)	0.65-0.86	0.75	No	2020	Drinking water disinfectant added for treatment
HAA5 [Total of five Haloacetic Acids] (µg/L)	60	NA	26-62	49 [1]	No	2020	Byproduct of drinking water disinfection
TTHMs [Total of four Trihalomethanes] (µg/L)	80	NA	19-62	59 [1]	No	2020	Byproduct of drinking water chlorination

Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	Primary MCL (MRDL)	PHG (MRDLG)	Range of Detection	Average Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent
Bromochloroacetic acid (BCAA)(µg/L)	Unregulated	NA	ND-0.76	0.37	NA	2019	Byproduct of drinking water disinfection
Bromodichloroacetic acid (BDCAA) (µg/L)	Unregulated	NA	ND-1.4	0.90	NA	2019	Byproduct of drinking water disinfection
Dibromoacetic acid (DBAA)(µg/L)	Unregulated	NA	ND-0.4	0.01	NA	2019	Byproduct of drinking water disinfection
Dichloroacetic acid (DCAA)(µg/L)	Unregulated	NA	ND-18	9	NA	2019	Byproduct of drinking water disinfection
Monochloroacetic acid (MCAA)(µg/L)	Unregulated	NA	ND-29	3	NA	2019	Byproduct of drinking water disinfection
Trichloroacetic acid (TCAA)(µg/L)	Unregulated	NA	ND-39	23	NA	2019	Byproduct of drinking water disinfection

Inorganic Constituents (units)	Action Level	PHG (MCLG)	Sample Data	90th % Level	MCL Violation?	Most Recent Sampling Date	Typical Source of Constituent	Number of Schools Requesting Lead Sampling
Copper (mg/L)[at the tap]	1.3	0.3	None of the 57 samples collected exceeded the action level	0.17	No	2020	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	NA
Lead (µg/L)[at the tap]	15	0.2	None of the 57 samples collected exceeded the action level	ND	No	2020	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	35 [2]

[1] Highest Locational Running Annual Average (LRAA).

[2] Thirty-five public K-12 schools were tested between 2017-2019.

Questions?

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Jenkinson Lake at Sly Park Recreation Area in Pollock Pines

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EL DORADO IRRIGATION DISTRICT

2021 Water Quality Report

Water testing performed in 2021

www.eid.org/main

MAIN WATER SYSTEM

Este informe contiene información muy importante sobre su agua beber.
Tradúzcalo o hable con alguien que lo entienda bien.

About the Water Quality Report (Consumer Confidence Report)

The Water Quality Report is an annual summary of the results of ongoing tests for contaminants in drinking water. The report is designed to inform you of the quality of your drinking water. Each year, the State Water Resources Control Board and U.S. Environmental Protection Agency require EID to compile and distribute a report to all of our water customers. The report includes a comparison of the District's water quality to state and federal standards.

Where Your Water Comes From

EID has rights to approximately 75,000 acre-feet of water from various sources in the Sierra Nevada foothills. (An acre-foot equals one acre of land covered by a foot of water; there are 325,851 gallons in an acre-foot.) Jenkinson Lake, at the center of Sly Park Recreation Area, provides nearly one half of the Main System's water supply and is treated at the Reservoir A water treatment plant in Pollock Pines. Forebay Reservoir in Pollock Pines delivers water to the Reservoir 1 water treatment plant under a pre-1914 water right from the high-alpine streams and lakes that are part of our Project 184 hydropower system. We have a water contract with the Bureau of Reclamation at Folsom Lake, which Reclamation operates as part of the state's Central Valley Water Project. We also hold ditch water rights (Weber, Slab, and Hangtown creeks), water rights at Weber Reservoir, and a water right under Permit 21112 for Project 184 water—all of which is delivered from Folsom Lake through the El Dorado Hills water treatment plant. The EID Main water system provides water to approximately 130,000 people within a 225-square-mile service area.

About El Dorado Irrigation District

EID is a multi-service public utility serving drinking water to approximately 130,000 people in El Dorado County. The District holds water rights in the Sierra Nevada foothills that date back to the Gold Rush. Today EID provides a unique combination of services—from drinking water and water for pastures, orchards, and vineyards to wastewater treatment, recycled water for irrigated landscapes and back and front yards, hydroelectric and solar power generation, water efficiency programs, and outstanding recreation in Sierra Nevada alpine and western slope environments.

Your Drinking Water—What You Should Know

The sources of drinking water—both tap and bottled—include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants**, such as salts and metals that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, and farming.
- **Pesticides and herbicides** that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Organic chemical contaminants** including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- **Radioactive contaminants** that can be naturally-occurring or are the result of oil and gas production and mining activities.

Unregulated contaminant monitoring helps EPA and the State Water Resources Control Board determine where certain contaminants occur and whether the contaminants need to be regulated.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection.

NOTE: Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791 for more about contaminants and potential health effects.

Information about Potential Sources of Pollution

The State Water Resources Control Board, Division of Drinking Water requires water providers to conduct a source water assessment to help protect the quality of water supplies. The assessment describes where a water system's drinking water comes from, the types of polluting activities that may threaten the quality of the source water, and an evaluation of the water's vulnerability to the threats.

The last updated assessments of EID's drinking water sources were completed in 2018. Our source water is considered most vulnerable to recreation, residential sewer, septic system, and urban runoff activities, which are associated with constituents detected in the water supply. Our source water is also considered most vulnerable to illegal activities, dumping, fertilizer, pesticide and herbicide application, forest activities, and wildfires, although constituents associated with these activities were not detected.

Copies of the assessments are available online at www.eid.org in our Document Library or at the State Water Resources Control Board, Division of Drinking Water, Sacramento District Office, 1001 I Street, 17th Floor, Sacramento, CA 95814. To view them, contact Ali Rezvani, Sacramento District Engineer, at 916-445-5285, or Radenko Odzakovic, EID Drinking Water Operations Division Manager, at 530-642-4060.

Testing the Water

To help ensure safe water is delivered to our customers, EID's water quality monitoring program includes taking samples of raw and treated water throughout the year from many locations in the District's service area. Analyses cover more than 100 different constituents. Analysis of the water is performed at state-certified commercial labs. The state of California may grant monitoring waivers for contaminants when historical monitoring results are less than the Maximum Contaminant Level. As a result, some of our data, although representative, may be more than a year old. The tables on page four and five list all constituents that were detected under our monitoring and testing program. The information shows EID meets or exceeds all state and federal drinking water standards. When available, the data reported reflects the treated water supply.

Water Conservation Tips for Consumers

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference—try one today and soon it will become second nature.

- Take short showers—a five-minute shower uses four to five gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair, and shaving and save up to 500 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Fix leaking toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.

Visit https://www.epa.gov/watersense for more information.

A Note for Sensitive Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. EPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. EID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, test methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline, or at www.epa.gov/safewater/lead.

Lead in Schools

In January 2017, the State Water Resources Control Board, Division of Drinking Water amended public water system domestic water supply permits to require for lead monitoring and lead sample result interpretation at K–12 schools served by the water system that have submitted a written request for lead sampling related assistance. Seventeen schools requested testing related to this requirement. In October 2017, the Governor approved AB 746 amending the Health and Safety Code (HSC) §116277. The new law requires Community Water Systems serving public school sites of a local education agency with buildings constructed before January 1, 2010 to test for lead in the potable water system of the school site before July 1, 2019. Thirty-five public schools out of thirty-five public schools served by the Main Water System have been sampled between 2017 and 2019; an additional four private schools were also tested. Please contact your individual school for a copy of the results or email the State Lead Sampling for Schools Specialist at DDW-PLU@waterboards.ca.gov with your request.

The following definitions help explain information in the tables on the following pages.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHG or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCL) are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (EPA).

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCL, MRDLs and treatment techniques (TTs) for contaminants that affect health, along with their monitoring and reporting requirements.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. The California Environmental Protection Agency sets PHGs.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Main Water System - Source Water Quality							
Primary Standards - Health Based (units)	**Primary MCL**	**PHG (MCLG)**	**Highest Single Measurement**	**Lowest Monthly Percentage of Samples Meeting Limits**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Turbidity - Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	NA	0.21	NA	No	2021	Soil runoff
Turbidity - Lowest Monthly % of the Treated Surface Water Meeting NTU Requirements	TT = 95% of samples ≤ 0.3 NTU	NA	NA	100%	No	2021	Soil runoff
Secondary Standards - Aesthetic (units)	**Secondary MCL**	**PHG (MCLG)**	**Range of Detection**	**Average Level**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Chloride (mg/L)	500	NA	3-5	4	No	2021	Runoff/leaching from natural deposits; seawater influence
Color (Units)	15	NA	0-8	4	No	2021	Naturally-occurring organic materials
Corrosivity (A.I.)	Non-corrosive	NA	9.1-10.0	9.7	No	2021	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Odor-Threshold (Units)	3	NA	0-2	1	No	2021	Naturally-occurring organic materials
Specific Conductance (µmhos/cm)	1600	NA	41-70	54	No	2021	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	500	NA	0-1.7	0.7	No	2021	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	1000	NA	34-47	42	No	2021	Runoff/leaching from natural deposits
Turbidity (NTU)	5	NA	0-0.12	0.07	No	2021	Soil runoff
Other Parameters (units)	**Notification Level**	**PHG (MCLG)**	**Range of Detection**	**Average Level**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Alkalinity (mg/L)	Unregulated	NA	11-26	20	NA	2021	No Known Typical Source of Constituent
Bicarbonate (mg/L)	Unregulated	NA	11-26	20	NA	2021	
Carbonate (mg/L)	Unregulated	NA	0-11	4	NA	2021	
Calcium (mg/L)	Unregulated	NA	2-6	4	NA	2021	
Hardness as CaCO3 (mg/L)	Unregulated	NA	8-22	14	NA	2021	
Hardness as CaCO3 (grains/gal)	Unregulated	NA	0.47-1.29	0.99	NA	2021	
Magnesium (mg/L)	Unregulated	NA	0.5-1.9	1.1	NA	2021	
pH (pH units)	Unregulated	NA	7.68-8.75	8.09	NA	2021	
Sodium (mg/L)	Unregulated	NA	5.0-5.8	5.3	NA	2021	
Disinfection Byproduct Precursors (units)	**Action Level**	**PHG (MCLG)**	**Range of Detection**	**Lowest RAA Quarterly Average**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Total Organic Carbon [TOC] Filtered water (µg/L)	TT= Removal	NA	700-2100	NA	NA	2021	Various natural and manmade sources
Total Organic Carbon [TOC] Removal Ratio (Actual/Required)	TT=>1.0	NA	NA	1.0	No	2021	Various natural and manmade sources
Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	**Primary MCL (MRDL) [SMCL]**	**PHG (MCLG)**	**Range of Detection**	**Average Level**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Total Organic Carbon [TOC] Source water (µg/L)	Unregulated	NA	1100-2500	1442	NA	2019	Various natural and manmade sources
Manganese (µg/L)	[50], NL=500	NA	0-34	4	NA	2019	Leaching from natural deposits

KEY

NA=not applicable
ND=not detected
NR=not reportable

NTU=nephelometric turbidity unit (measure of clarity)
mg/L=milligrams/liter
µg/L=micrograms/liter
µmho/cm=micromhos per centimeter

Units		Equivalence
mg/L – milligrams per liter	ppm – parts per million	1 second in 11.5 days
µg/L – micrograms per liter	ppb – parts per billion	1 second in nearly 32 years
ng/L – nanograms per liter	ppt – parts per trillion	1 second in nearly 32,000 years
pg/L – picograms per liter	ppq – parts per quadrillion	1 second in nearly 32,000,000 years

Main Water System - Distribution System Water Quality							
Disinfection Byproducts and Disinfectant Residuals (units)	**Primary MCL (MRDL)**	**PHG (MRDLG)**	**Range of Detection**	**Highest Running Annual Average (RAA)**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Chlorine [as Cl_2] (mg/L)	(4.0)	(4)	0.50-0.73	0.70	No	2021	Drinking water disinfectant added for treatment
HAA5 [Total of five Haloacetic Acids] (µg/L)	60	NA	17-200	55 [1]	No	2021	Byproduct of drinking water disinfection
TTHMs [Total of four Trihalomethanes] (µg/L)	80	NA	24-100	64 [1]	No	2021	Byproduct of drinking water chlorination
Federal Unregulated Contaminant Monitoring Rule 4 (UCMR4)	**Primary MCL (MRDL)**	**PHG (MCLG)**	**Range of Detection**	**Average Level**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**
Bromochloroacetic acid (BCAA)(µg/L)	Unregulated	NA	ND-0.76	0.37	NA	2019	Byproduct of drinking water disinfection
Bromodichloroacetic acid (BDCAA) (µg/L)	Unregulated	NA	ND-1.4	0.90	NA	2019	Byproduct of drinking water disinfection
Dibromoacetic acid (DBAA)(µg/L)	Unregulated	NA	ND-0.4	0.01	NA	2019	Byproduct of drinking water disinfection
Dichloroacetic acid (DCAA)(µg/L)	Unregulated	(0)	ND-18	9	NA	2019	Byproduct of drinking water disinfection
Monochloroacetic acid (MCAA)(µg/L)	Unregulated	(70)	ND-29	3	NA	2019	Byproduct of drinking water disinfection
Trichloroacetic acid (TCAA)(µg/L)	Unregulated	(20)	ND-39	23	NA	2019	Byproduct of drinking water disinfection

Inorganic Constituents (units)	**Action Level**	**PHG (MCLG)**	**Sample Data**	**90th % Level**	**MCL Violation?**	**Most Recent Sampling Date**	**Typical Source of Constituent**	**Number of Schools Requesting Lead Sampling**
Copper (mg/L)[at the tap]	1.3	0.3	None of the 57 samples collected exceeded the action level	0.17	No	2020	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	NA
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