

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2015



PRESENTED BY



CLEARWATER
BRIGHT AND BEAUTIFUL • BAY TO BEACH

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.
Copias en español de este informe están disponibles contactando (727-562-4960).

PWS ID#: FL6520336

Meeting the Challenge

Once again, the city of Clearwater is proud to present Clearwater's annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, the city's utility professionals have dedicated themselves to producing drinking water that meets all state and federal standards. The city continually strives to adopt new methods for delivering the best quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, the city remains vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all water users.

Please remember that Clearwater's public utilities professionals are always available to assist you with any questions or concerns about the water we produce.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Bring Reclaimed Water Into Your Neighborhood!

If your neighborhood does not currently have reclaimed water service and you would like it, it is easy to initiate a project. Neighbors along the proposed pipeline route would need to sign a citizen-initiated petition form to express interest in getting reclaimed service. More than 50 percent of property owners along the route are required for approval leading to construction. To learn more, call (727) 562-4960 or visit myclearwater.com/reclaimed.

Substances That Could Be in Water

The sources of drinking water (both tap water and bottled water) 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, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which 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, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Community Participation Is Welcome

You are invited to participate in regularly scheduled meetings. The city of Clearwater Council normally meets at 6 p.m. on the first and third Thursdays of each month at City Hall, 112 S. Osceola Ave., Clearwater, Fla. The meeting agendas are published on the city's Web site at myclearwater.com. For more information, call (727) 562-4090.

The Pinellas County Board of County Commissioners meets typically twice a month (usually, but not always) on the first and third Tuesdays of the month. The earlier meeting in the month begins at 9:30 a.m. Meetings in the latter part of the month are held in two parts. Agenda items are discussed with the board at 2 p.m., after which there is a break and the board reconvenes at 6 p.m. The public is invited to attend these meetings held in the fifth floor Assembly Room of the Pinellas County Courthouse, located at 315 Court St. in Clearwater. For more information, call (727) 464-3485.

Tampa Bay Water's Board of Directors meetings occur on the third Monday of every other (even) month at 9 a.m. at Tampa Bay Water, 2575 Enterprise Road in Clearwater. For more information, visit their Web site at tampabaywater.org or call (727) 796-2355.

City Water Treatment Plants

Clearwater has three water treatment plants, two of which are reverse osmosis (RO) water treatment plants.

How Is My Water Treated?

Clearwater uses Best Available Treatment (BAT) technologies to ensure that the drinking water delivered to our consumers meets or exceeds all drinking water standards. The city produces its own water and purchases the rest from Pinellas County Utilities to meet the water demand of city residents.

At RO Plant No. 1, water from wells in the Upper Floridan Aquifer is filtered to remove suspended solids such as iron. Then, it is processed by RO to remove selected dissolved molecules, including hardness-causing salts. The water is disinfected using monochloramines, stabilized to protect the pipeline system, and is then pumped to consumers.

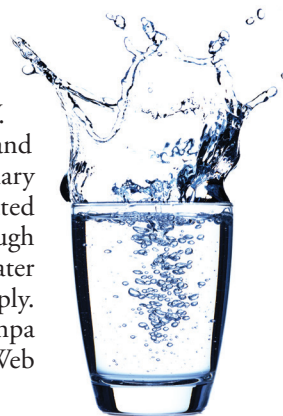
At RO Plant No. 2, brackish water from the lower portions of the Upper Floridan Aquifer is treated by RO to remove selected dissolved molecules, including hardness-causing salts. The water is then treated with ozone to remove sulfide, disinfected using monochloramines and stabilized to protect the pipeline system, and is then pumped to consumers.

At Water Plant No. 3, raw water from the Upper Floridan Aquifer is blended with water supplied by Pinellas County Utilities, disinfected using monochloramines, stabilized to protect the pipeline system, and is then pumped to consumers.

Where Does My Water Come From?

City of Clearwater residents use approximately 11.2 million gallons of potable water every day. Approximately 80 percent is pumped from city-owned and operated groundwater wells; the remaining daily demand is supplied by water purchased from Pinellas County Utilities. The ground water source for Clearwater comes from a ground water supply called the Floridan Aquifer. This aquifer is one of the major sources of groundwater in the United States and underlies all of Florida, southern Georgia, and small parts of adjacent Alabama and South Carolina.

Pinellas County Utilities receives drinking water from Tampa Bay Water, a regional water supplier, which in turn becomes part of the water supplied to the residents of Clearwater. The water supplied by Tampa Bay Water is a blend of ground water, treated surface water, and desalinated seawater. Eleven regional wellfields, pumping from the Floridan Aquifer, are the primary source for the regional ground water supply. The Alafia River, Hillsborough River, C.W. Bill Young Regional Reservoir, and Tampa Bypass Canal are the primary supplies for the regional treated surface water supply. Hillsborough Bay is the primary supply of seawater for the regional desalinated supply. For more information on the Tampa Bay Water system, visit their Web site at tampabaywater.org.



Water Restrictions

Citywide watering restrictions change on a regular basis, usually once or twice a year. Make sure your household is following current watering restrictions when watering lawns and landscaping. For your watering schedule, visit myclearwater.com/watering or call the Water Conservation Hotline at (727) 562-4WTR (4987).

QUESTIONS?

Please contact Fred Hemerick at (727) 562-4627 if you have questions about this report.

Groundwater Replenishment

The city of Clearwater is committed to protecting local sustainable groundwater water supplies for its residents and visitors. In 2013 and 2014, the city conducted a pilot study to test the feasibility of directly adding up to 3 million gallons a day of purified water into a brackish water zone below the fresh water zone of the Upper Florida Aquifer. Based on the success of the study, the city is moving forward with the design and construction of a full-scale water plant facility. The design and construction of this new facility is cooperatively funded by the Southwest Florida Water Management District. Informational presentations are available for neighborhood and civic associations by calling (727) 562-4960. For project information, visit myclearwater.com/groundwater.

Lead in Home Plumbing

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. We are 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, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/lead.

About Our Violation

In January 2015, the City of Clearwater was required by the Florida Department of Environmental Protection (FDEP) to issue a Tier II Public Notice for a Maximum Contaminant Level (MCL) exceedance of the Locational Running Annual Average (LRAA) for Total Trihalomethanes (TTHMs) at one of the eight locations tested quarterly. The LRAA at the location was 83 parts per billion (ppb) and the MCL was 80 ppb. The disinfectant dosage at the water plant serving the location, combined with water age in the distribution system, was responsible for the formation of TTHMs in the distribution system. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

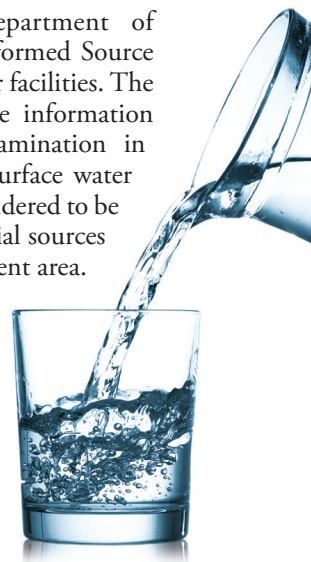
The City is working to minimize the formation of TTHMs by optimizing disinfectant dosage at the water plant and increasing flushing to lower TTHMs formation time. The City has also retained the services of a registered engineer to provide the best available treatment alternatives for TTHMs control, which may include capital improvement projects. The City will continue to monitor TTHMs results quarterly and report any exceedances as required by the FDEP.

Source Water Assessment

In 2015, the Florida Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 24 potential sources of contamination identified for this system with low to moderate susceptibility levels.

Between 2014 and 2015, the Department of Environmental Protection (FDEP) performed Source Water Assessments for Tampa Bay Water facilities. The assessments were conducted to provide information about any potential sources of contamination in the vicinity of the Tampa Bay Water surface water intakes. The surface water system is considered to be at high risk because of the many potential sources of contamination present in the assessment area.

The assessment results are available on the FDEP Source Water Assessment and Protection Program Web site at www.dep.state.fl.us/swapp or they can be obtained from Tampa Bay Water, 2575 Enterprise Road, Clearwater, FL 33763; telephone (727) 796-2355.



Unregulated Contaminant Monitoring

The City of Clearwater has been monitoring for unregulated contaminants (UCs) as part of a study to help the U.S. Environmental Protection Agency (U.S. EPA) determine the occurrence in drinking water of UCs and whether or not these contaminants need to be regulated. At present, no health standards (for example, maximum contaminant levels) have been established for UCs. However, we are required to publish the analytical results of our UC monitoring in our annual water quality report. If you would like more information on the U.S. EPA Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality.

PRIMARY REGULATED CONTAMINANTS

Microbiological Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater		Pinellas County Utilities		MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
		DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE	DATE OF SAMPLING (MO./YR.)	HIGHEST MONTHLY PERCENTAGE			
Total Coliform Bacteria (% positive samples)	No	1/15–12/15; highest month, 8/2015	2.52	1/15–12/15	2.6	0	Presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment

Radioactive Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	City of Clearwater			Pinellas County Utilities			MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
		DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS			
Alpha Emitters (pCi/L)	No	1/13/15–5/7/15	3.8	ND–3.8	3/11	0.806	ND–0.806	0	15	Erosion of natural deposits
Radium 226 + 228 [Combined Radium] (pCi/L)	No	1/13/15–5/7/15	2.0	0.5–2.0	NA	NA	NA	0	5	Erosion of natural deposits
Uranium (ppb)	No	1/13/15–5/7/15	0.24	ND–0.24	NA	NA	NA	0	30	Erosion of natural deposits

Inorganic Contaminants

Arsenic ¹ (ppb)	No	1/13/15–5/7/15	7.9	2.3–7.9	1/15	0.2	NA	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm)	No	1/13/15–5/7/15	0.015	0.0069–0.015	1/15	0.0153	NA	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb)	No	1/13/15–5/7/15	9.1	1.5–9.1	1/15	2.2	NA	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide (ppb)	No	NA	NA	NA	1/15	16	NA	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride (ppm)	No	1/13/15–5/7/15	0.42	0.076–0.42	1/15	0.42	NA	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at optimum levels between 0.7 and 1.3 ppm
Lead [point of entry] (ppb)	No	NA	NA	NA	1/15	0.2	NA	NA	15	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder
Nickel (ppb)	No	1/13/15–5/7/15	2.8	0.82–2.8	1/15	1.3	NA	NA	100	Pollution from mining and refining operations; natural occurrence in soil
Nitrate [as Nitrogen] (ppm)	No	1/13/15–5/7/15	0.14	0.03–0.14	NA	0.07	NA	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium (ppb)	No	1/13/15–5/7/15	9.4	5.5–9.4	NA	NA	NA	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

Radioactive Contaminants													
		City of Clearwater			Pinellas County Utilities								
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION			
Inorganic Contaminants													
Sodium (ppm)	No	1/13/15–5/7/15	74	46–74	1/15	22.6	NA	NA	160	Saltwater intrusion, leaching from soil			
Thallium (ppb)	No	NA	NA	NA	1/15	0.1	NA	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories			
Synthetic Organic Contaminants including Pesticides and Herbicides													
Dalapon (ppb)	No	1/2015; 4/2015; 5/2015; 7/2015; 10/2015	0.63	ND–0.63	NA	NA	NA	200	200	Runoff from herbicide used on rights of way			
Volatile Organic Contaminants													
Chlorobenzene (ppb)	No	5/7/15	0.1	ND–0.1	NA	NA	NA	100	100	Discharge from chemical and agricultural chemical factories			
Stage 1 Disinfectants and Disinfection By-Products													
		City of Clearwater			Pinellas County Utilities								
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG OR [MRDLG]	MCL OR [MRDL]	LIKELY SOURCE OF CONTAMINATION			
Bromate (ppb)	No	5/15–12/15	4.4	ND–6.8	NA	NA	NA	0	10	By-product of drinking water disinfection			
Chloramines (ppm)	No	1/15–5/15; 7/15–8/15; 11/15–12/15	2.5	0.2–4.9	NA	NA	NA	[4]	[4.0]	Water additive used to control microbes			
Chlorine (ppm)	No	5/15–6/15; 9/15–10/15	3.1	0.6–4.4	1/15–12/15	3.7	0.6–5.5	[4]	[4.0]	Water additive used to control microbes			
		City of Clearwater				Pinellas County Utilities							
CONTAMINANT AND UNIT OF MEASUREMENT	TT VIOLATION (YES/NO)	DATE OF SAMPLING (MO/YR)	ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO		RANGE OF MONTHLY REMOVAL RATIOS	DATE OF SAMPLING (MO/YR)	ANNUAL AVERAGE MONTHLY REMOVAL RATIO OR LOWEST ANNUAL AVERAGE MONTHLY REMOVAL RATIO		RANGE OF MONTHLY REMOVAL RATIOS		MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Total Organic Carbon ² (ppm)	No	1/13/15–5/7/15	1.4		ND–1.4	NA	NA		NA		NA	TT	Naturally present in the environment
STAGE 2 DISINFECTANTS AND DISINFECTION BY-PRODUCTS ³													
		City of Clearwater				Pinellas County Utilities							
CONTAMINANT AND UNIT OF MEASUREMENT	MCL VIOLATION (YES/NO)	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	DATE OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION			
Haloacetic Acids (five) [HAA5] (ppb)	No	1/15; 4/15; 7/15; 10/15	36	10.39–32.7	2015 (quarterly)	20.55	10.77–24.88	NA	60	By-product of drinking water disinfection			
TTHM [Total trihalomethanes] (ppb)	Yes	1/15; 4/15; 7/15; 10/15	83	37.6–71	2015 (quarterly)	38.5	29.4–40.1	NA	80	By-product of drinking water disinfection			
Lead and Copper (Tap water samples were collected from sites throughout the community)													
		City of Clearwater			Pinellas County Utilities								
CONTAMINANT AND UNIT OF MEASUREMENT	AL EXCEEDANCE (YES/NO)	DATE OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	DATE OF SAMPLING (MO./YR.)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION			
Copper [tap water] (ppm)	No	6/2014 – 9/2014	0.496	0	6/14–7/14	0.41	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives			
Lead [tap water] (ppb)	No	6/2014 – 9/2014	3	0	6/14–7/14	0.8	0	0	15	Corrosion of household plumbing systems, erosion of natural deposits			

UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3) - CITY OF CLEARWATER

CONTAMINANT AND UNIT OF MEASUREMENT	DATE OF SAMPLING (MO./YR.)	AVERAGE RESULT	RANGE OF RESULTS	LIKELY SOURCE OF CONTAMINATION
Bromomethane (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	0.22	ND–0.22	Halogenated alkane; occurs as a gas, and used as a fumigant on soil before planting, on crops after harvest, on vehicles and buildings, and for other specialized purposes
Chlorate (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	316	170–580	Agricultural defoliant or desiccant; used in the production of chloring dioxide
Chromium [Total] (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	0.21	ND–0.37	Naturally occurring element; used in making steel and other alloys. Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium-6 (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	0.049	ND–0.074	Naturally occurring element; used in making steel and other alloys. Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Molybdenum (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	1.63	ND–2.8	Naturally occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	279	89–480	Naturally occurring elemental; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium (ppb)	2/13; 12/13; 3/14; 6/14; 9/14; 10/14; 8/15	0.26	ND–0.38	Naturally occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

¹ While your drinking water meets U.S. EPA's standard for arsenic, it does contain low levels of arsenic. U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

² The monthly TOC removal ratio is the ratio between the actual TOC removal and the TOC rule removal requirements.

³ Level Detected values are reported as locational running annual averages (LRAA).

Definitions

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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