2023 Annual Water Quality Report

Report Covering: January 1, 2023 – December 31, 2023

SUMMARY

In 2023 the Kennebec Water District (KWD) produced just over **1.3 billion gallons** of clean, safe drinking water for more than 8,800 customers in the greater Waterville area.

INTRODUCTION

KWD, the first water district in the United States, was chartered by the State of Maine Legislature in 1899. KWD serves customers in Waterville, Winslow, Fairfield, Vassalboro, and Benton and is a wholesale supplier of water to the Town of Oakland. KWD's water transmission and distribution systems include over 171 miles of water mains and provides fire protection service through 653 public hydrants. KWD is governed by a 10-member elected Board of Trustees. The trustees and employees are dedicated to reliably supplying safe drinking water to more than 8,800 customers every day.

WATER QUALITY

China Lake has served as KWD's primary source of water since 1905. China Lake's watershed is located within the towns of China, Vassalboro, Albion, and Winslow and drains approximately 27 square miles of the surrounding landscape. An estimated 32 billion gallons of water is stored within China Lake, and it has a surface area of approximately 6.2 square miles.

To ensure customers receive high-quality water, KWD routinely tests the quality of water in China Lake, at the water treatment plant, and at numerous locations within the water delivery system. Testing is conducted in KWD's in-house state accredited laboratory as well as in independent, state accredited laboratories.

Fluoride in Drinking Water: As requested by the voters in the municipalities served by KWD, fluoride is added to the water. The federal Center for Disease Control (CDC) states that a proper amount of fluoride from infancy through old age helps prevent or reduce tooth decay.

Due to maintenance activities at the water treatment plant, the addition of fluoride was temporarily suspended starting on July 18, 2022, and continuing until February 20, 2023. This did not impact the safety of the drinking water.

Parents with infant children should be aware that most infant formula contains low levels of fluoride. Regularly mixing powdered or liquid infant formula concentrate with fluoridated water may increase

the chance of a child developing the faint white markings of mild fluorosis on their teeth. The risk is reduced by using low fluoride water for formula all or most of the time. For more information visit the CDC's website at: https://www.cdc.gov/fluoridation/faqs/infant-formula.html.

Lead in Drinking Water: 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 lead service lines and household plumbing. While KWD provides high quality drinking water, plumbing components in your home likely contain material with lead, such as solder and fittings and fixtures with brass. These materials can leach lead into your water. This occurs most frequently when the water has been stagnant in the household plumbing for several hours.

You can reduce the risk of lead exposure by flushing your faucet for 30 seconds to 2 minutes before using water for drinking and 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 at 1-800-426-4791 or online at: http://www.epa.gov/safewater/lead.

WATER SUPPLY / SOURCE INFORMATION

Sources of drinking water include rivers, lakes, ponds, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. The Maine Drinking Water Program (DWP) has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments included geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely our drinking water source is to being contaminated by human activities in the future. The KWD Source Water Assessment is available for public viewing on our website. For more information about the SWAP, please contact the DWP at (207)287-2070 or www.medwp.com.

As a surface water body, China Lake is susceptible to pollution and contamination from human activities and natural sources within the watershed. In the early 1900's, KWD purchased nearly all of the shoreline around the West Basin (visible as you pass through the village area of East Vassalboro) to protect the water quality in China Lake. KWD also planted thousands of trees to reduce the risk of soil erosion entering the lake.

The East Basin shoreline (from China Village area south to the South China Village area) is mostly privately owned. Consequently, hundreds of homes and camps, along with miles of roadways, have been developed within close proximity of the shoreline. Land development is a significant source of nutrient pollution, which leads to algal blooms and other water quality issues. KWD partners with the towns of China and Vassalboro, the China Region Lakes Alliance, the China Lake Association to improve China Lake water quality.

OTHER IMPORTANT INFORMATION

KWD is governed by a 10-member elected board. Each member is elected for a three-year term from one of the five municipalities served by KWD.

Kennebec Water District Board of Trustees (2023)

Name (Position)	Municipality
Frank Richards (President)	Vassalboro
Ben Murray (Vice President)	Winslow
Jeff Earickson (Treasurer)	Waterville
J. Michael Talbot (Assistant Treasurer)	Waterville
Sarah Whateley (Clerk)	Waterville
Amy Stabins	Winslow
Denise Bruesewitz	Waterville
Bruce Williams	Fairfield
Mark McCluskey	Fairfield
Allan Fuller	Benton

Board of Trustee meetings are generally held on the first and third Thursday of each month at 7:30 a.m. at 131 Drummond Ave. in Waterville. Virtual attendance of these meetings is generally available upon request. These meetings are open to the public.

Water Test Results

DEFINITIONS

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water.
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health.
Running Annual Average (RAA): A 12 month rolling average of all monthly or quarterly samples at all locations. Calculation of the RAA may contain data from the previous year.
Locational Running Annual Average (LRAA): A 12 month rolling average of all monthly or quarterly samples at specific sampling locations. Calculation of the RAA may contain data from the previous year.
Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
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.
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
PPM: parts per million or Milligrams per liter (mg/L)
PPB: parts per billion or micrograms per liter (µg/L)
PPT: parts per trillion or nanograms per liter (ng/L)
pCi/L: picocuries per liter (a measure of radioactivity).
Pos: Positive Sample
MFL: million fibers per liter

HEALTH INFORMATION

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

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, can be particularly at risk from infections. These persons should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791) or at the following link: https://www.epa.gov/ccr/forms/contact-us-about-consumer-confidence-reports

VIOLATIONS

KWD had one violation in 2023 for failure to monitor a synthetic organic compound (Dalapon).

As part of a routine three-year monitoring cycle (2021-2023), KWD was required to analyze the drinking water for thirty-three synthetic organic compounds and report the results to the Maine Drinking Water Program. Thirty-two of the thirty-three required compounds were monitored and reported. However, due to a miscommunication between the laboratories contracted to complete the analysis, no test was completed for the compound dalapon.

Dalapon is a herbicide used primarily in the cultivation of sugarcane and sugar beets. However, it is used to a limited extent in other applications. KWD completed testing for dalapon in 2020 with results being below the detection limit.

KWD will collect the required samples in the first six months of 2024 and ensure the results are reported appropriately to the Maine Drinking Water Program. There is nothing you need to do at this time.

KWD is committed to providing the highest quality drinking water to you every day. We apologize for this oversite as the responsibility for monitoring and reporting falls upon us. The mandatory federal public notification language associated with the violation can be found below:

We are required to monitor our drinking water for specific contaminants on a regular basis. Results of regular monitoring indicate whether or not our drinking water meets health standards. During the period of 2021 through 2023, we did not test for dalapon.

WAIVER INFORMATION

KWD had no waivers in 2023.

PRIMARY STANDARDS

Regulated Standards for Finished Water

Parameter	MCLG Goal	MCL Highest Allowed	Results	Source
MICROBIOLOGICAL				
Coliform Bacteria (%)[1]	0	5% of monthly samples are positive	0 pos	Naturally present in the environment
ORGANIC COMPOUNDS				
Total Trihalomethanes (ppb)[9] Distance Racing Products Hampton Inn Keystone Property Mgt. KSW Federal Credit	0	80	Average: 40 (38 - 42) 42 (30 - 52) 42 (22 - 58) 39 (26 - 50) 38 (24 - 55)	By-product of drinking water chlorination
Haloacetic Acids (ppb)[9] **Distance Racing Products** **Hampton Inn** **Keystone Property Mgt.** KSW Federal Credit	0	60	Average: 25.5 (20 - 30) 20 (15 - 24) 27 (22 - 31) 30 (26 - 36) 25 (17 - 31)	By-product of drinking water chlorination
INORGANIC CHEMICALS				
Chlorine Residual (ppm)[5]	4	4	0.52 (0.28 - 0.77)	Water additive used to control microbes
Copper (ppm)[4]	1.3	AL=1.3	0.289 (0.049 - 0.504	Corrosion of household plumbing systems
Fluoride (ppm)[3]	4	4	0.8	Water additive which promotes strong teeth
Lead (ppb)[4]	0	AL=15	1.79 (0 - 7.31)	Corrosion of household plumbing systems
Turbidity (NTU)[11]	None	1.49	Highest Monthly Value: 0.10 Highest Single Value: 0.49 Lowest % <MCL: 99.86%	Soil runoff
RADIONUCLIDES				
Combined Radium (-226 & 228) (pCi/l)	0	5	1.7	Erosion of natural deposits
Radium-226 (pCi/l)	0	5	0.85	Erosion of natural deposits
Radium-228 (pCi/l)	0	5	0.85	Erosion of natural deposits
SYNTHETICS				
Total PFAS (6 Regulated) (ppt)[10]	0	20	8.3	Man-made chemicals in a wide variety of consumer products and industrial applications. Stain- and water-resistant fabrics, carpeting, nonstick cookware, cleaning products and paints, Class B Firefighting foam (AFFF) foam and industrial processes.
OTHER				
	ALL OTHER REGULATED DRINKING WATER CONTAMINANTS WERE BELOW DETECTABLE LEVELS			

1) Total Coliform Bacteria: Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples per month.
2) E. Coli: E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.
3) Fluoride: For those systems that fluoridate, fluoride levels must be maintained between 0.5 to 1.2 ppm. The optimum level is 0.7 ppm.

4) Lead/Copper: Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.
5) Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health provider.
6) Arsenic: While your drinking water may meet EPA's standard for Arsenic, if it contains between 5 to 10 ppb you should know that the standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. 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. Quarterly compliance is based on running annual average.
7) Gross Alpha: Action level over 5 pCi/L requires testing for Radium 226 and 228. Action level over 15 pCi/L requires testing for Uranium. Compliance is based on Gross Alpha results minus Uranium results = Net Gross Alpha.
8) Radon: The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4000 pCi/L, effective 1/1/07. If Radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon.
9) TTHM/HAA5: Total Trihalomethanes and Haloacetic Acids (TTHM and HAA5) are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water. Value is the highest locational average of four different locations in the distribution system and the range of individual values at all four locations. Compliance is based on location running annual average.
10) PFAS: The degree of risk depends on the level of chemicals and duration of exposure. Laboratory studies of animals exposed to high doses of PFAS have shown numerous negative effects such as issues with reproduction, growth and development, thyroid function, immune system, neurology, as well as injury to the liver. Research is still relatively new, and more needs to be done to fully assess exposure effects on the human body.
11) Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

SECONDARY STANDARDS

Non-regulated Aesthetic Standards for Finished Water

Parameter	Secondary Maximum Contaminant Level	KWD Test Results
Chloride (ppm)	250	19
Magnesium (ppm)	No Standard	1.28
Manganese (ppm)	0.05	0.00118
Sodium (ppm)	No Standard	13
Sulfate (ppm)	250	13

Unregulated Contaminants Monitoring*

Ongoing Research for New Regulations

Parameter	Sample Year	Average Level Found	Range of Detections
PFBA (ppt)	2023	6.5	
PFHpA (ppt)	2023	4.3	3.4 - 5.4
PFHxA (ppt)	2023	3	
PFOA (ppt)	2023	5.3	4.4 - 6.4

*Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of these contaminants in drinking water and whether future regulation is warranted. In 2023 we participated in the fifth round of the Unregulated Contaminant Monitoring Rule (UCMR 5). The above were detections for contaminants in this round of testing.

Please share this information with all other people who drink this water, especially those who may not have received this report directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this report in a public place or distributing this notice by hand or mail.

If you have any questions about this report or your water quality, or service, please call KWD's office at (207) 872-2763 during normal business hours (Monday through Friday 8:30 a.m. until 4:30 p.m.). Questions may also be directed to the Maine Department of Health and Human Services Drinking Water Program at (207) 287-2070 or www.medwp.com or to the US EPA Safe Drinking Water Hotline at 1-800-426-4791 or online at: http://www.epa.gov/safewater/dwhealth.html

ADMINISTRATION AND OPERATIONS FACILITIES
131 Drummond Ave., Waterville ME 04901 | 207.872.2763

WATER TREATMENT PLANT
462 Main St., (Route 32), Vassalboro ME 04989

Email: Info@kennebecwater.org **Website:** http://www.kennebecwater.org