

Annual Drinking Water Quality Report for 2023

Kittery Water District

17 State Rd., Kittery, ME 03904

June 30, 2024

MISSION STATEMENT

Kittery Water District recognizes that water and watersheds must be preserved, conserved and protected; that an adequate supply of clean water is a basic human right; that water is a public trust, to be guarded by all levels of government acting as an equal partner with the public; and that the best advocates for water are local communities and citizens. The District strives to maintain stable water rates for domestic and municipal purposes.

The 26th annual water quality report, in accordance with the 1996 Safe Drinking Water Act (SDWA), provides general information regarding District activities. During 2023, drinking water produced by the Kittery Water District (KWD), either met or exceeded all federal and state health safety requirements.

DISTRICT ACTIVITIES IN 2023

- Produced well over 986 million gallons of water for the homes and businesses of Kittery, Kittery Point, Eliot, the Portsmouth Naval Shipyard and a portion of York.
- Gray Lodge Road, Kittery – installed 720 feet of 8” high-density polyethylene (H.D.P.E.) water main, 73 feet of 8” Ductile Iron main, and 23 feet of 2” H.D.P.E. main, allowing us to abandon 803 feet of original 4” Cast Iron main.
- Bridge View Terrace, Kittery – installed 243 feet of 2” H.D.P.E. water main, allowing us to abandon 221 feet of 2” Iron main.
- Goodwin Road, Kittery Point – installed 396 feet of 4” H.D.P.E. water main. No pipe was abandoned.
- Main Street, Eliot – installed 212 feet of 12” Ductile Iron water main. No pipe was abandoned.
- Ox Point Drive, Kittery – installed 520 feet of 8” H.D.P.E. water main, and 382 feet of 4” H.D.P.E. water main, allowing us to abandon 902 feet of original 6” Cast Iron water main.
- Busdick Drive, Kittery – installed 319 feet of 2” H.D.P.E. water main, allowing us to abandon 319 feet of 2” Iron water main.
- Shipping Lane, Eliot – installed 20 feet of 8” Ductile Iron water main, 369 feet of 8” H.D.P.E. water main and 480 feet of 4” H.D.P.E. water main.
- Dennett Road, Kittery – Severino Trucking installed 2,911 feet of 12” Ductile Iron water main.
- Spinney Way, Kittery – Severino Trucking installed 69 feet of 8” Ductile Iron water main.
- Maren Court, Kittery – JMC Construction installed 114 feet of 4” Ductile Iron water main.
- Jewett Lane, Kittery – Jamco Excavators installed 1,130 feet of 8” Ductile Iron water main.
- Evergreen Drive, Kittery – Jamco Excavators installed 388 feet of 2” H.D.P.E. water main.
- Wilson Road, Kittery – Jamco Excavators installed 270 feet of 12” Ductile Iron water main.
- Pettigrew Road, Kittery – Jamco Excavators installed 1,235 feet of 6” Ductile Iron water main.
- Regency Circle, Kittery – King Construction installed 35 feet of 8” Ductile Iron water main, and 261 feet of 6” Ductile Iron water main.
- Folcutt Road, Kittery Point – Brex Corporation installed 360 feet of 6” Ductile Iron water main, and 64 feet of 2” H.D.P.E. water main.
- Harold L Dow Highway, Eliot – Defelice Corporation installed 1,564 feet of 16” Ductile Iron water main.
- Brook Drive, Eliot – Defelice Corporation installed 82 feet of 8” Ductile Iron water main.
- Julie Lane, Eliot – Defelice Corporation installed 83 feet of 8” Ductile Iron water main.
- Gray Lodge Road, Kittery – replaced two 1955 vintage hydrants with new models, #3-K & #4-K.
- Ox Point Drive, Kittery – replaced a 1960 vintage hydrant with a new model, #254-K.
- Shipping Lane, Eliot – installed a new private hydrant, #96-E.
- Dennett Road, Kittery – installed a new hydrant #329-K.
- Spinney Way, Kittery—installed a new hydrant, #382K.
- Jewett Lane, Kittery— installed a new hydrant, #333-K.
- Wilson Rd, Kittery – installed a new hydrant, #334-K.
- Regency Circle, Kittery – installed a new private hydrant, #335-K.
- Folcutt Road, Kittery Point – installed a new private hydrant, #336-K.
- Harold L Dow Highway, Eliot – installed a new hydrant, #94-E.
- Julie Lane, Eliot – installed a new hydrant, #95-E.
- A total of 81 new customer services were installed.
- A total of 40 existing customer services were renewed.
- A total of 3 water main repairs were performed.
- Stockpiled gravel for watershed access road repair. This is part of an ongoing safety program within the watershed area. These roads are not only used by the KWD to access our ponds and dams but are critical arteries for travel by Search and Rescue members and local fire departments in times of emergency.
- The district has contracted with Marston Industrial Services to paint all of our 475 fire hydrants. A total of 171 hydrants were painted in 2023.

FILTRATION PLANT RENOVATIONS

- Installed a new valve on finished water pump #1.

2024 CONSTRUCTION SCHEDULE

This construction season, our construction crew will be performing water main upgrades to increase fire protection capabilities and replace aging infrastructure in the following locations:

- Maine Turnpike crossing at Beech Ridge Rd, York
- Old Beech Ridge Road, York, Pump Station
- Walker Street and Dame Street, Kittery
- Route 1 Bypass, Kittery
- Old Post Road, Kittery
- Goodwin Road, Kittery Point
- Pocahontas Road, Kittery Point



2023 Water Quality Results

| CONTAMINANT: | LEVEL MEASURED: | VIOLATION: | MCLG: | MCL: | LIKELY SOURCE: |
|--------------------------------------|---|------------|----------------|----------------------------|--|
| TOTAL COLIFORM BACTERIA (2023) | 2 positive | No | 0 | 1 positive per month or 5% | Naturally present in the environment. |
| TURBIDITY (2023) | 0.06 NTU | No | NA | 0.3 NTU 95% 1 NTU 100% | Soil erosion; suspended materials. |
| BARIUM (4/21) | < 0.010 ppm | No | 2 ppm | 2 ppm | Erosion of natural deposits. |
| CUTTS ROAD TOTAL HALOACETIC ACIDS | 19.8 ppb (LRAA) (Range: 11 – 25 ppb) | No | 0 | 60 ppb | By-product of drinking water chlorination. |
| CUTTS ROAD TOTAL TRIHALOMETHANES | 15.9 ppb (LRAA) (Range: 7.9 – 21.0 ppb) | No | 0 | 80 ppb | By-product of drinking water chlorination. |
| ELIOT TANK TOTAL HALOACETIC ACIDS | 54.5 ppb (LRAA) (Range: 34.0 – 97.0 ppb) | No | 0 | 60 ppb | By-product of drinking water chlorination. |
| ELIOT TANK TOTAL TRIHALOMETHANES | 57.3 ppb (LRAA) (Range: 34 – 104 ppb) | No | 0 | 80 ppb | By-product of drinking water chlorination. |
| MARTIN ROAD TOTAL HALOACETIC ACIDS | 35.5 ppb (LRAA) (Range: 22.0 – 43.0 ppb) | No | 0 | 60 ppb | By-product of drinking water chlorination. |
| MARTIN ROAD TOTAL TRIHALOMETHANES | 40.9 ppb (LRAA) (Range: 21 – 62.5 ppb) | No | 0 | 80 ppb | By-product of drinking water chlorination. |
| ROUTE 1, YORK TOTAL HALOACETIC ACIDS | 29.5 ppb (LRAA) (Range: 19 – 39 ppb) | No | 0 | 60 ppb | By-product of drinking water chlorination. |
| ROUTE 1, YORK TOTAL TRIHALOMETHANES | 27.1 ppb (LRAA) (Range: 17 – 40.6 ppb) | No | 0 | 80 ppb | By-product of drinking water chlorination. |
| CHLORINE (2023) | 1.32 ppm (Range: .6 – 1.9ppm) | No | 4.0 ppm (MRDL) | 4 ppm (MRDLG) | Water additive to control microbes. |
| NITRATE / NITROGEN (5/2023) | < 1.0 ppm | No | 10 ppm | 10 ppm | Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits. |
| CHROMIUM (5/2023) | < 0.010 ppm | No | 100 ppb | 100 ppb | Discharge from steel and pulp mills. Erosion of natural deposits |
| RADIUM – 228 (4/16) | < 3 pCi/l | No | 0 pCi/l | 5 pCi/l | Erosion of natural deposits. |
| LEAD (8/2022) | < 0.001 ppb 90 th Percentile = 1 0 sites above AL (32 sites sampled) | No | 0 | AL=15 ppb (AL) | Corrosion of household plumbing systems. |
| COPPER (8/2022) | 0.044 ppm 90 th Percentile = 0.172 0 sites above AL (32 sites sampled) | No | 1.3 ppm | AL = 1.3 ppm | Corrosion of household plumbing systems. |

DEFINITIONS OF TESTING TERMINOLOGY

ppm (Parts per million) – unit of measure

ppb (Parts per billion) or Micrograms per liter –unit of measure

pCi/L (Picocuries per liter) - Picocuries per liter is a measure of the radioactivity in water.

Primary standards - Quality standards designed to protect your health.

Secondary standards - Standards relating to the aesthetic qualities of water like taste, odor and color that do not present a health risk.

RAA (Running Annual Average) –The average of all monthly or quarterly samples for the last year at all sample locations.

LRAA (Locational Running Annual Average) –The average of monthly or quarterly samples for the last year from the same location.

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

SMCL (Secondary Maximum Containment Level) - The highest level of an aesthetic water quality parameter that is allowed in drinking water.

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

NTU (Nephelometric Turbidity Unit) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

MCLG (Maximum Contaminant Level Goal) - The “Goal” is 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.

MCL (Maximum Contaminant Level) - The “Maximum Allowed” is 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.

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.

In 2020, our system was granted a ‘Synthetic Organics Waiver.’ This is a three-year exemption from the monitoring/reporting requirements for the following industrial chemical(s): TOXAPHENE/CHLORDANE/PCB, CARBAMATE PESTICIDES, SEMIVOLATILE ORGANICS. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source(s).

REGULATED PRIMARY DRINKING WATER STANDARDS

Our water was regularly tested for some or all the primary standard contaminants listed below, as regulated by law.

Microbiological Contaminants

1. Total Coliform Bacteria
2. Fecal coliform and *E.coli*
3. Turbidity

Radioactive Contaminants

4. Beta/ photon emitters
5. Alpha emitters
6. Combined radium
- 6a. Uranium

Inorganic Contaminants

7. Antimony
8. Arsenic
9. Asbestos
10. Barium
11. Beryllium

12. Cadmium
13. Chromium
14. Copper
15. Cyanide
16. Fluoride
17. Lead
18. Mercury (inorganic)
19. Nitrate (as Nitrogen)
20. Nitrite (as Nitrogen)
21. Selenium
22. Thallium

23. 2,4-D
24. 2,4,5-TP (Silvex)

25. Acrylamide
26. Alachlor
27. Atrazine
28. Benzo(a)pyrene (PAH)
29. Carbofuran
30. Chlordane
31. Dalapon
32. Di(2-ethylhexyl) adipate
33. Di(2-ethylhexyl) phthalate
34. Dibromochloropropane
35. Dinoseb
36. Diquat
37. Dioxin [2,3,7,8-TCDD]
38. Endothall
39. Endrin
40. Epichlorohydrin

41. Ethylene dibromide
42. Glyphosate
43. Heptachlor
44. Heptachlor epoxide
45. Hexachlorobenzene
46. Hexachlorocyclo-pentadiene
47. Lindane
48. Methoxychlor
49. Oxamyl [Vydate]
50. PCBs [Polychlorinated biphenyls]
51. Pentachlorophenol
52. Picloram
53. Simazine
54. Toxaphene

55. Benzene
56. Carbon tetrachloride
57. Chlorobenzene
58. o-Dichlorobenzene
59. p-Dichlorobenzene
60. 1,2 - Dichloroethane
61. 1,1 - Dichloroethylene
62. cis-1,2-Dichloroethylene
63. trans - 1,2 -Dichloroethylene
64. Dichloromethane
65. 1,2-Dichloropropane
66. Ethylbenzene
- 66a. Haloacetic acids
- 66b. Methyl-Tertiary-Butyl-Ether (MTBE) (Maine MCL)

67. Styrene
68. Tetrachloroethylene
69. 1,2,4 -Trichlorobenzene
70. 1,1,1 - Trichloroethane
71. 1,1,2 -Trichloroethane
72. Trichloroethylene
73. TTHM [Total trihalome-thanes]
74. Toluene
75. Vinyl Chloride
76. Xylenes
77. HAA5’s [Haloacetic Acids]

78. Volatile Organic Contaminants

2023 TEST RESULTS FOR SECONDARY STANDARDS

| | Maximum Level Detected | SMCL |
|----------------|------------------------|---------|
| Manganese | 0.019ppm | .050ppm |
| pH | 7.7 | 6.0-8.5 |
| Sodium | 4.7ppm | 20ppm |
| Sulfate | 18ppm | 250ppb |
| Total Chloride | 14ppm | 250ppm |
| Total Hardness | 20ppm | 500ppm |
| Zinc | <0.010ppm | 5ppm |

Additional Notes:

- 1) **Total Coliform Bacteria:** Reported as the highest monthly number of positive samples, for water systems that take < 40 samples per month. Retesting showed the ABSENSE of Total Coliform. No E.coli present.
- 2) **Gross Alpha:** Action level over 5 pCi/L requires testing for Radium. Action level over 15 pCi/L requires testing for Radon and Uranium.
- 3) **Lead/Copper:** Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.
- 4) **Total Trihalomethanes (TTHM)/Haloacetic Acids (HAA5):** 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.
- 5) **Turbidity:** Turbidity is a measurement of cloudiness or suspended colloidal matter (silt). Excessive turbidity can cause problems with water disinfection. All samples taken from our system were below 0.549 ntu's for rapid sand filtration media. Therefore, our water filtration system renders your finished drinking water clear and safe to drink.
- 6) **PFAS:** In 2022, 18 forms were tested for, all coming in as non-detects. Results may be found at the Kittery Water District Office.

IMPORTANT INFORMATION:

Lead:

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 household plumbing. KWD is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When water has been sitting in household piping for several hours, the potential for lead exposure can be minimized by flushing your tap for up 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 <http://www.epa.gov/safewater/lead>.

MCLs:

Maximum Contaminant Levels are set at very stringent levels. A person would have to drink 2 liters of water every day at the MCL level over the course of a lifetime to have a one-in-ten thousand chance of acquiring any adverse health effect.

Source Information:

The District obtains our water from four man-made ponds in the town of York, Maine: Boulter Pond, Middle Pond, Upper Folly Pond and Bell Marsh Reservoir. The watershed for these ponds has been tested for potentially harmful pathogens such as cryptosporidium, giardia, and E-Coli. None were detected. Our source water protection program prohibits all but passive recreation around the reservoirs. Frequent watershed protection patrols assure compliance with our watershed protection policies. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, radioactive material, and substances resulting from human or animal activity. The Maine Drinking Water Program assessed public water supplies statewide in 2003 as part of the Source Water Assessment Program. The assessment considered geology and hydrology, land uses, water testing information, and the extent of land ownership or local ordinance protection to determine how likely the drinking water source is to be contaminated in the future. This evaluation reflected positively on the District's watershed. The assessment is available to the public upon request. For more information, contact the Drinking Water Program at 207-287-2070. The District's water treatment and filtering facility is located at Boulter Pond in York. The filtration process includes the addition of alum and hydrated lime to coagulate organic materials in the raw water. Sodium permanganate is added to oxidize iron and manganese. As water passes through a sedimentation process, organic materials settle out. Water is filtered as it passes through a bed of washed, filtering sand. After filtering, the water is treated with sodium hypochlorite for disinfection. Hydrated lime is added to adjust water pH. Prior to leaving the plant, a corrosion control chemical, trade name AQUA MAG 9600, is added to reduce distribution system pipe corrosion.

Health Information:

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 storm-water 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 storm-water runoff, and residential uses.

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

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.

Our watershed monitoring program has tested for the above contaminants. None were detected. Should any contaminants be introduced, our water treatment process assures that the maximum contaminant level will be below State standards for safe drinking water.

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.

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. 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).

SERVICE LINE INVENTORY

In 2021, the EPA mandated that all public water providers in the country must create an inventory identifying the water service line material for every customer. Materials must be identified from the water main to the curb stop (public side) and from the curb stop to the house (private side). With 5700+/- services to identify by October of 2024, the Kittery Water District will be reaching out to customers to either provide the service line material entering their homes, or if uncertain, then allowing a KWD employee access to accurately record the data. We are current-ly working on the inventory while performing water meter exchanges, but we will really need the help of our valued customers.

Public Participation

The Kittery Water District was established in 1907 by the Maine Legislature and is not a part of town government. The Board of Trustees meet at the Kittery Town Hall Chambers the third Wednesdays of the month @ 5:00 pm This meeting is open to public participation.

Important Telephone Numbers and Addresses

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| Kittery Water District Office | 439-1128, 439-8549 (fax) |
| Kittery Water District Website | www.kitterywater.org |
| Email Address | info@kitterywater.org |
| Kittery Water District Treatment Facility | 363-4252 |
| Kittery Police Dispatch (after hour emergencies) | 439-1638 |
| Carl B. Palm, Superintendent | 439-1128 |
| Superintendent's email address | cpalm@kitterywater.org |
| Robert A. Gray, Trustee, President | bgray@kitterywater.org |
| James E. Golter, Trustee, Treasurer | jgolter@kitterwater.org |
| Carla J. Robinson, Trustee, Clerk | crobinson@kitterwater.org |
| John C. Perry, Trustee | jcperry@kitterwater.org |
| Michael H. Melhorn, Trustee | mmelhorn@kitterwater.org |
| ME PUC's Consumer Assistance Division | 1-800-452-4699 |
| ME DHHS, Drinking Water Program | 1-207-287-2070 |
| EPA's Safe Drinking Water Hotline | 1-800-426-4791 |

The Kittery Water District's Public Water System Identification Number (PWSID) is ME0090790.

Kittery Water District
17 State Road
Kittery, ME 03904-1565

BULK RATE
U.S. POSTAGE
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