

Palmer Water District # 1

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2023 DRINKING WATER QUALITY REPORT

The Palmer Fire District # 1 and Palmer Water District # 1, P.W.S. ID # 1227000, presents this Consumer Confidence Report to all Customers in the water supply service area of the District. This report is part of the 1996 Safe Drinking Water Act Amendments and is required by the United States, Environmental Protection Agency and Commonwealth of Massachusetts, Department of Environmental Protection. All Public Water Systems in the Commonwealth will be presenting some form of this report to their customers prior to July 1st.

PALMER WATER DISTRICT # 1 DISTRIBUTION AND SERVICE AREA

The Palmer Water District # 1 portion of the Palmer Fire District # 1 and Palmer Water District # 1 is the service area within the Water Distribution System and Fire Hydrant System. The service area in general encompasses the area from the Quaboag River, north to the Massachusetts Turnpike and from Palmer Paving, West to the Turnpike Bridge Overpass at Rt. 181. The District also services Mt. Dumplin Rd. area and the Condominium Complex. There are approximately 1400 metered accounts; estimated customer base of 4,700; 29 miles of Distribution System ranging in size from 16" Cast Iron Main to 1 ¼" Copper Laterals; and approximately 217 Fire Hydrants. There is a 953,000-gallon Concrete Clearwell which was constructed in 1995 and distributes water to the Downtown sections (Low Pressure System) of the District and is located at the Graves Brook Reservoir Treatment Facility. The higher elevations (High Pressure System) in the District are supplied by a 750,000-gallon Steel Water Storage Tank located at the top of Breckenridge St. which was constructed in 1963.

PROTECTION FROM CROSS CONNECTIONS CAUSED BY GARDEN HOSE CONNECTIONS AND LAWN IRRIGATION SYSTEMS

The Palmer Water District recommends the installation of backflow prevention devices, such as a low-cost Hose Bib Vacuum Breaker, for all inside and outside hose connections. You can purchase these devices at a hardware or plumbing retailer. On lawn and yard irrigation systems, a properly installed Backflow Preventer must be evaluated and installed to meet Plumbing Code and Massachusetts Cross Connection Control Regulations. For additional information on this critical protection step, please see the website.

2000, 2004 & 2007, 2010, 2013, 2016, 2019 & 2022 SANITARY SURVEY

In December 2022 DEP conducted its most recent inspection of the Palmer Water District # 1. DEP found the district to have Conditional Capacity with investment needed in capital improvement, reduction in unaccounted for water and the need to survey commercial properties. The District has continued to make ongoing improvements to the System since the previous surveys and continues to:

- administer its Cross-Connection Program as it deals with Municipal, Industrial and Commercial Accounts.
- Maintain adequate number of licensed staff to operate Distribution and Treatment Facilities.
- make reductions of Unaccountable Water with the continuation of the re-metering of Residential, Commercial, Industrial and Municipal Accounts; and with Leak Detection Survey Work with the District's Detection Equipment.
- conduct periodic structural inspections of both the Clearwell and Breckenridge Street Water Tank.
- update its Emergency Response Plan
- implementation of capital improvement plan
- regularly update its Sampling Plan
- work on the implementation of the EPA / DEP Groundwater Rule

PALMER WATER DISTRICT WATER SOURCES AND TREATMENT

The Palmer Water District # 1 has four sources of water; two of which are Ground Water and two of which are Surface Water Supplies. The Galaxy Wellfield # 1 and Gravel Pack Well # 2 (1227-01G & 02G) are the two Ground Water Supplies; these are located off Salem Street. The Upper and Lower Graves Brook Reservoir (1227-01S & 02S) are the two Surface Water Supplies; these are located off Breckenridge Street.

The District currently operates two Water Treatment Plants, one at each type of source. The Graves Brook Reservoir Treatment Facility operates at the Surface Water Sources. The Granular Activated Carbon Treatment Plant operates at the Ground Water Sources.

The Graves Brook Reservoir Treatment Facility was placed on line in May 1995. The Facility is a packaged plant and treats the reservoir water with two Micro Flocc Up-Flow Clarifiers and Granular Activated Carbon Media Filters. The finished water is treated with Disinfectant (Chlorine) and Corrosion Control (pH adjustment and Tri-Metallic Phosphate Injection). The Facility also removes particulate matter (Turbidity) from the water along with Microbial Contaminants, Organic Contaminants, Taste, and Odor. The Treatment Facility at Graves Brook Reservoir houses the Operation Headquarters for the District. The Business Office is located on Walnut Street next to the Fire Station.

The Granular Activated Carbon Treatment Plant was placed on line in 1989, through the Chapter 286 Grants Program. The Plant has two, 20,000-pound Granular Activated Carbon Pressure Vessels, which treat both well supplies for possible Volatile Organic (VOC), Pesticide and Herbicide, MTBE Contamination. The finished water is treated with Disinfectant (Chlorine) and Corrosion Control (pH adjustment and Tri-Metallic Phosphate Injection). The Treatment Plant consistently treats all VOC Contaminants to Non-Detect Levels.

SOURCE WATER ASSESSMENT PROGRAM REPORT

The Department of Environmental Protection has prepared a Source Water Assessment Report (SWAP) for the water supply sources serving the Palmer Water District # 1 water system. The SWAP Report notes key issues of Environmental Concerns in the Watershed and Zone A of the Graves Brook Reservoir and Zone I and II of the Well Supply located off Salem Street. The report recommends continued vigilance in these areas to protect the Ground Water Quality of these municipal sources. The report recommends coordination of efforts with other area Water Departments, Boards of Health, and Planning Boards to implement a uniform protection plan for area.

Residents can help protect the water supply by properly disposing of household cleaners and pesticides and reporting any suspicious activities to the proper authorities. A full copy of this report is available at <http://www.mass.gov/dep/water/drinking/swapreps.htm>.

REMEDIATION & PROJECTS & STUDIES IN 2023

- The operators continue to update and maintain water operator licenses.
 - Replace all inefficient lights with LED lights
 - Further progressing in-house meter replacement program
 - Rebuild multiple pressure control devices in distribution system
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IMPORTANT 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 should be no known or expected risk to health.

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water.

Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health.

Highest Detected Level (HDL) – highest detected level

Non Detectable Level (N/D) – The level of the specific substance that is either non-existent or lower than the detection level (accuracy of the testing apparatus).

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

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

Parts per Million (ppm) – Parts per Million or Milligrams per Liter (mg/l). A concentration of a substance in the water.

Parts per Billion (ppb) - Parts per Billion or Micrograms per Liter (ug/l). A concentration of a substance in the water

Parts per Trillion (ppt) – Parts per trillion or pangrams per liter. A concentration of a substance in the water

90th Percentile Level – This value is 90 % of the values taken from the 2009 Sampling Round.

Suggested Maximum Contaminant Level (SMCL) – These values do not have a regulated maximum and are only suggestive.

Variations and Exceptions – State or EPA permission to meet an MCL or a treatment technique under certain conditions.

Massachusetts Office of Research and Standards Guidelines (ORSG) – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of potential need for further action.

2023 Water Quality Testing Results

Below the Consumer will find the Water Analysis results for your information on substances that were detected in the water during 2023. The Commonwealth of Massachusetts, Department of Environmental Protection, (DEP) sets forth the sampling schedule.

The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk.

All water testing conducted during Calendar Year 2023, **there were no substances that exceeded any MCL.**

The Palmer Water District # 1 has met all present regulatory testing requirements as set forth by DEP.

2023 Water Quality Data

Contaminant (Units)	Level Detected	HDL	MCL	MCLG	SMCL / ORSG	Violations (Yes / NO)	Possible Source of Contamination
Clarity of Treated Water							
Turbidity (NTU)	.04-.31	0.31	TT = 0.50	None		No	Soil Runoff
There were no Turbidity Samples taken during the year that exceeded the 0.50 NTU MCL.							
Bacteria Monitoring							
There were no positive bacteria samples found in the distribution system.							
Inorganic Contaminant							
Perchlorate (ppb)	ND	ND	2.0			No	Fireworks, blasting, munitions agents
Nitrate (ppm)	.18-.2	0.200	10.0	10.0		No	Runoff from fertilizeruse; Leaching from septic tanks, sewage
Flouride (mg/l)	<0.1-0.19	0.190	4.0			No	Natural Occuring not part of treatment process
Lead and Copper*							
Copper (ppm)	.24 = 90th Percentile level		AL = 1.3	1.30		No	Corrosion of household plumbing systems
Lead (ppm)	.0049 = 90th Percentile Level		AL = .015	0.015		No	Corrosion of household plumbing systems
Unregulated Contaminants							
Aluminum (mg/L)	ND				0.20		Unregulated contaminants are those which EPA has not established drinking water standards. The purpose of unregulated contaminate monitoring is to assist EPA in determining their occurrence in drinking water standards. The purpose of unregulated contaminate
Chloride (ppm)	37-41	41.0			250.00		
Sodium (ppm)	18-28	28.0			20.00		
Manganese (ppb)	.061-.19	0.190			50.00		
Potassium (mg/L)	0-3.6	3.60					
Sulfate (ppb)	8.5-15.0	15.00			250.00		
Total Dissolved Solids	0-62.0	62.00			500.00		
Calcium (mg/L)	7.8-14.0	14.000					
Magnesium (mg/L)	.07-1.85	1.850					
Total Alkalinity	9.0-47.0	47.000					
Hardness	62.0-98.0	98.000					(0.0 - 60.0 is considered Soft Water, when defined as Calcium Carbonate)
Health Effects from Chlorination							
Chlorine Residual at Treatment Plants (ppm)	1.62	0.68 - 1.62	MRDL 4.00	MRDLG 4.00		No	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their nose and eyes. Some people who drink water containing chlorine in excess of the MRDL could experience stomach discomfort. Caused By: Disinfectant added to water to kill microbes
Volatile Organic Compounds							
No detection of Volatile Organic Compounds							
Disinfection Byproducts **							
Total Haloacetic Acids (ppb)	ND-44	44.0	60.00	-----		No	Disinfection ByProduct from Chlorination of Water
Total Trihalomethane (ppb)	ND-39.1	39.1	60.00	-----		No	Disinfection ByProduct from Chlorination of Water
PFAS							
No detection of per- and polyfluoroalkyl substances. MassDEP has granted Palmer a waiver for reduced PFAS tesing through 2025							

Note: *: Twenty homes were sampled in 2015 for lead and copper. Due to low levels, monitoring for lead and copper has been reduced to only once every three years. Samples were taken in 2018 and no violations were found. No Samples exceeded the Action Level.

***: Under the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBRP). The Palmer Water District # 1 in 2008 applied for and received a waiver to maintain reduced monitoring, due to historical low values.

SUBSTANCES FOUND IN TAP WATER

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 agricultural, 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.

Turbidity - which is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality.

Lead and Copper - 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. Palmer Water District #1 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, 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>.

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and the U. S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791.)

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on lowering the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.
