

**CALAIS WATER DEPARTMENT**  
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PWSID ME0090290

**2017 ANNUAL CONSUMER CONFIDENCE REPORT**

**INTRODUCTION**

The Federal Safe Drinking Water Act requires all community water systems to distribute an annual water quality report to its customers. This is the 2017 annual water quality report of the Calais Water Department, which covers the period from January 1, 2017 through December 31, 2017. This annual report is intended to provide you with important information about your drinking water. We know that you count on the Calais Water Department for a safe and reliable supply of water everyday, and we are committed to providing the highest quality of service to you. **We are pleased to report that there were no violations in 2017.**

**WATER QUALITY**

The Safe Drinking Water Act mandates that the State of Maine, along with the Environmental Protection Agency (EPA), establish and enforce minimum drinking water quality standards. These standards set limits on certain biological, radioactive, organic, and inorganic substances sometimes found in drinking water. The limits set on these substances are known as Maximum Contaminant Levels (MCL's). Two types of standards have been established. Primary Standards set required levels of drinking water quality to protect your health. Secondary Standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of your drinking water which do not present a health risk. The Calais water quality is within the levels established by EPA and the State of Maine for all Primary Standards.

Responsibility for maintaining water quality resides with the Calais Water Department's staff. The Calais Water Department staff is licensed by the State of Maine Department of Health and Human Services. We ensure that your water is safe through regular total coliform testing and chlorine residual monitoring. These tests are conducted by the Maine State Health and Environmental Testing Laboratory and the Calais Water Department.

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 human health risk. Contaminants that may be present in source water include: (1) microbial contaminants, such as viruses and bacteria, which may come from sewage or wildlife; (2) inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming; (3) pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses and (4) organic chemical contaminants, including synthetic and volatile organic chemicals, which can come from gas stations, runoff, and septic systems and (5) radioactive contaminants which can be naturally occurring. 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).

Table 1 lists regulated testing conducted by the Calais Water Department for which results were obtained in 2017. The most recent result is also included for contaminants which are not tested annually. All other tested and regulated drinking water contaminants were below detection levels. This testing is required by the State of Maine Drinking Water Program (DWP) and must be reported to all customers on an annual basis:

**TABLE 1: 2017 REQUIRED CALAIS TESTING RESULTS**

CONTAMINANT	DATE	CALAIS RESULTS	EPA LIMIT	EPA GOAL	SOURCE
<b>MICROBIOLOGICAL</b>					
Total Coliform	Monthly Testing (3 per month)	0 Positive Results	1 Positive Result	0 Positive Results	Naturally present in the environment.
<b>INORGANICS</b>					
Arsenic	3/21/17	1 ppb	10 ppb	0 ppb	Erosion of natural deposits.
Barium	3/21/17	0.0068 ppm	2 ppm	2 ppm	Erosion of natural deposits.
Chromium	3/21/17	1.2 ppb	100 ppb	100 ppb	Erosion of natural deposits.
Fluoride	3/21/17	0.1 ppm	4 ppm	4 ppm	Erosion of natural deposits.
Copper 90 <sup>th</sup> Percent Value	Summer 2016	0.5 ppm	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems.
Lead 90 <sup>th</sup> Percent Value	Summer 2016	3.4 ppb	15 ppb	0 ppb	Corrosion of household plumbing systems.
<b>RADIONUCLIDES</b>					
Radium -228	12/8/14	0.239 pCi/L	5 pCi/L	0 pCi/L	Erosion from natural deposits.
<b>DISINFECTANTS AND DISINFECTION BYPRODUCTS</b>					
Total Haloacetic Acids	HAA 2017	38 ppb (16 - 35 ppb)	60 ppb	0 ppb	Byproduct of drinking water chlorination.
Total Trihalomethanes	TTHM 2017	70 ppb (51- 85 ppb)	80 ppb	0 ppb	Byproduct of drinking water chlorination.
Chlorine Residual	Monthly Testing	0.54 ppm (0.37 - 0.67)	4.0 ppm	4.0 ppm	Drinking water chlorination.

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

**Units:**

ppm = parts per million or milligrams per liter (mg/L)  
 pCi/L = picocuries per liter (a measure of radioactivity)  
 ppb = parts per billion or micrograms per liter (µg/L)  
 pos = positive samples

**Notes:**

- 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) 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.
- 3) Fluoride: Fluoride levels must be maintained between 0.5 to 1.2 ppm, for those water systems that fluoridate the water.
- 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) 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. Compliance is based on running annual average.

The data presented in Table 1 demonstrates that the City has been in complete compliance with the requirements for bacteria sampling and has not experienced any positive results for total coliform. Total coliform is used as an indicator parameter for water supply bacterial contamination. This data also shows that the Water Department is in compliance with Arsenic, Barium, Chromium, Fluoride, Radium-228, Disinfectants and Disinfection Byproducts. The Water Department tests every three years for lead and copper at ten homes during each sampling event. Copper testing in 2016 was in complete compliance with a result of 0.5 ppm as compared to the EPA limitation of 1.3 ppm. The lead sampling in 2016 were also in compliance with a result of 3.4 ppb versus an EPA standard of 15 ppb. 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. The Calais Water Department 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>.

### **WATER SUPPLY/DISTRIBUTION INFORMATION**

The City has been obtaining water from its two gravel-packed groundwater wells located on Niels Avenue since August of 2002. Prior to that, water had been purchased from St. Stephen, New Brunswick. Public water service is available in the urban area of the community in a region encompassing about two square miles. The City of Calais Water Department provided water service to about 1,092 active, connected customers in 2017. The City supplied an average of 0.23 million gallons per day (MGD) or 86.83 MG of potable water to customers in 2017. The City has a 1.5 MG storage reservoir on South Street that can supply water for a period of three days during average water use to the community. This reservoir also is used for peak flow fluctuations in the system during periods of hydrant flushing and for fire protection purposes. The City maintains fire protection through 165 fire hydrants located throughout the City.

Iron and manganese occur naturally in the groundwater aquifer below the wells. The City has been operating a water filtration plant prior to the distribution system in order to reduce the levels of both iron and manganese to below Secondary Standards. The process uses chlorine to oxidize the iron and manganese to an insoluble, precipitated form so that these compounds can be removed by the filtration media. The City also utilizes an inhibitor for corrosion control and a polymer for iron removal optimization. The Water Department has continued its efforts in flushing the hydrants located throughout the City. The Water Department appreciates your ongoing cooperation with any disruption experienced during these flushing activities.

### **SOURCE WATER PROTECTION**

The City adopted a Wellhead Protection Program into its existing Land Use Ordinance in 2005 and has utilized this Program to continue to manage construction activities near the well site. The purpose of this program is to develop preventative measures to assist with protecting the well site from contamination and conform to the City's Wellhead Protection Program.

### **SOURCE WATER ASSESSMENT**

The 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 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. Assessment results are available at the DWP. For more information about the SWAP, please contact the DWP at telephone 287-2070.

## **SYSTEM IMPROVEMENTS/ HIGHLIGHTS**

In order to improve water supply and quality in specific locations in the community, the City has continued to prioritize water main replacement projects. In 2017, using Drinking Water State Revolving funds, the City replaced approximately 1,300 feet of old water main on Manning Street with new eight-inch diameter ductile iron pipe. The project also included replacing two fire hydrants. This project was selected due to the poor water quality in this area from iron piping corrosion, maintenance issues, to improve pipe sizing and in case of emergency and to provide an alternate route for water flow to the Calais Regional Hospital. Planning for additional water main replacement projects will be implemented based on available funding opportunities.

The Water Department continued its ongoing efforts to replace broken, frozen and obsolete water meters. Since 2004, approximately 992 meters have been replaced with 56 of these occurring in 2017.

## **FUTURE PLANS AND NEEDS**

The Public Utilities Commission required the City to complete a Comprehensive Water Plan to assess the current and projected capital needs of the City with regard to water quality and quantity. The City was also required to evaluate its water system infrastructure and to provide estimates of the cost and schedule for any necessary improvements. This plan has continued to guide the City as it prepares for future system improvements.

In 2017, the process of leak detection continued with the purpose of minimizing distribution system losses. The Water Department has made significant improvements in reducing the amount of leaks from the distribution system. The water pumped to the distribution system was reduced to 0.23 MGD for 2017 compared to 0.34 MGD in 2009. This results in approximately 110,000 gallons per day less of water that is pumped into the distribution system. Although a portion of these reductions are due to lower usage, significant reductions have been made by continuing to repair water mains and service components in a timely manner and upgrading water mains and services.

## **CONTACT INFORMATION**

This report is a summary of the Water Department's activities during the past year. If you have any questions about your water quality, the information contained in this report, or your water service in general, please call the Calais Water Department at (207) 454-2760 (7:00 AM to 4:00 PM) or the City Building at (207) 454-2521 (8:00 AM to 5:00 PM). You may also direct questions or concerns to the Maine Department of Health and Human Services Drinking Water Program at (207) 287-2070 or the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.