

<http://www.des.state.nh.us/web/>

For more information you can go to:

industry as "full conventional treatment"; which, taken together, are referred to in the water in 1995 and provides a series of treatment processes distributed to customers. The plant was constructed the Canobie Lake Water Treatment Plant before being Water pumped from either source of supply is treated at <http://des.state.nh.us/dwssp/reports/salem.pdf> upon request. The reports are also available online at Environmental Services and are available for review reports on both Arlington Pond and Canobie Lake have been prepared by the New Hampshire Department of activated in an emergency. Source water assessment City of Methuen, MA water system which could be Salem's water source is Canobie Lake and Arlington Pond. We also have two interconnections with the

## Sources of Supply and Treatment of Drinking Water in Salem

Utilities Manager

*MaryBeth Wiser*

Sincerely,

safety of your water is our prime objective.

wastewater services to you and assure you that the allowing us to continue to provide quality water and of the Utilities Division, I wish to thank you for myself and the twelve dedicated men and women drinking water at a reasonable price. On behalf of provide you with a safe and dependable supply of water quality regulations. Our constant goal is to Salem water met or exceeded all State and Federal and Federal regulations during 2008. During 2008, the results of laboratory testing required by State year's annual water quality report. The report covers Public Works is pleased to provide you with this The Utilities Division of Salem's Department of



Dear Customer,



Salem Department of Public Works  
Utilities Division  
161 North Policy Street  
Salem, NH 03079

## Description of Drinking Water Contaminants:

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, 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, 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. **Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are the by-products of industrial processes and petroleum production, and also, come from gas stations, urban storm water 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**, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. **Radon**: Radon is a radioactive gas that you can't see, taste, or smell. It can move up through the ground and into a home through cracks and holes in the foundation. Radon can also get into indoor air when released from tap water from showing, washing dishes, and other household activities. It is a known human carcinogen. Breathing radon can lead to lung cancer. Drinking water containing radon may cause an increase risk of stomach cancer. Presently the EPA is reviewing a standard for radon in water. **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 service lines and home plumbing. This water system is responsible for high quality drinking water, but cannot be control the variety of material used in your plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing cold water; run your tap for at least 30 seconds before using water for drinking or cooking. Don not use hot 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, test 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>

## Help Prevent Water Pollution from Household Chemicals:

- Store oil, gasoline and other chemical products properly to avoid spills and fires.
- Try non-toxic or less toxic alternatives to cleaners, pesticides, herbicides and other household chemicals.
- Avoid storage problems. Don't buy more than you need.
- Never dispose of fuels, chemicals or drugs by pouring them down storm drains, into septic or sewerage systems or onto the ground.
- Take unused and unwanted chemical products to Salem's next Household Hazardous Waste Collection Day. Household Hazardous Waste Day is held on the first Saturday after Labor Day each year. This year that will be September 6. Much of our nation's water infrastructure was buried beneath our feet in the 19th and early 20th century and has, in many cases, been neglected for a long time. As water pipes and the other critical components of America's water systems get older, repair needs are escalating rapidly. US-EPA estimates that US water utilities will need to spend \$277 billion dollars on needed repairs and improvements to drinking water systems over the next twenty years. Other industry experts say the true number is over \$480 billion. The water bills most Americans pay today do not come close to providing the true cost of maintaining the country's investment in its water infrastructure. Those of us alive today have benefited greatly from the investment prior generations have made in our water infrastructure, and we have a responsibility to provide safe and secure water systems for those that come after us.

## Drinking Water Contaminants and Vulnerable Customers

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. However, 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 recently undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, pregnant women and infants are examples of people who are at higher risk from drinking water contaminants. People in these groups should seek advice about drinking water from their health care providers. More information about contaminants and potential health effects including means to reduce the risk from microbial contaminants can be obtained by calling the USEPA safe drinking water hotline at 1-800-426-4791 or by visiting the web site of the USEPA's Office of Groundwater & Drinking Water at <http://www.epa.gov/safewater>.

## Contact Information and Opportunities for Public Input

The Town of Salem welcomes public input on the programs and activities of all Town Departments. We encourage residents to call or write the members of the Board of Selectmen, Town Manager, the DPW Director or Utilities Manager to express their concerns or interest in the operation of the Town's water utility. Salem's water supply is managed by the Salem Department of Public Works.

### Utility Administration:

- Rick Russell, Director of Public Works (603) 890-2150
- MaryBeth Wiser, Utilities Manager (603) 890-2171
- Residential accounts & billing questions: (603) 890-2047
- Commercial accounts & billing questions: (603) 890-2042
- Water quality questions: (603) 890-2171

Front cover adapted from  
2007 Winner Wayne Gelardi  
Arlington Lake Cove

Salem's 890 public fire hydrants are tested and flushed annually to assure they are in top condition for fire prevention and to remove any sediment that may have built up in water mains. The work is conducted at night to minimize disruption to customers.

# 2008 Salem Water Testing Quality Test results

## Radiologicals

Contaminant/ Units of Measure	Level Detected	MCL	MCLG	Typical Source of Substance	Health Effect of Contaminant	Meets Standards?
Uranium (PCi/L)	0.05	30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.	YES
Gross Alpha (PCi/L)	0.50 +/- 1.30	15	0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increase risk of getting cancer.	YES
Radium 226 (PCi/L)	0.12 +/- 0.26	5	0	Erosion of natural deposits	Some people who drink water containing radium 226 in excess of the MCL over many years may have an increased risk of getting cancer.	YES
Radium 228 (PCi/L)	0.42 +/- 0.46	5	0	Erosion of natural deposits	Some people who drink water containing radium 228 in excess of the MCL over many years may have an increased risk of getting cancer.	YES
Combined Radium (PCi/L)	0.54 +/- 0.53	5	0	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.	YES
<b>Inorganic</b>						
Hardness (mg/L)	31	N/A	N/A	Naturally present in the environment	There does not appear to be any convincing evidence that water hardness causes adverse health effects in humans.	YES
Sodium (mg/L)	41	N/A	N/A	runoff from road salt	At present there are no health based standards for Sodium in EPA's Safe Drinking Water Act.	YES
Barium (mg/L)	0.015	2,000	2,000	Corrosion of household plumbing systems; erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure	YES
Manganese (mg/L)	0.018	N/A	N/A	Naturally present in the environment	There does not appear to be any convincing evidence that water manganese causes adverse health effects in humans.	YES
Copper (mg/L)	0.108	AL = 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor	YES
Nitrate (mg/L)	0.28	10ppm	10ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	(5 ppm–10 ppm) Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than 6 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 for advice from your health care provider. (Above 10 ppm) Infants below the age of 6 months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die Symptoms include shortness of breath and blue baby syndrome.	YES
Nitrite (mg/L)	0.28	1ppm	1ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of 6 months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.	YES
Chloride(mg/L)	43	N/A	N/A	runoff from road salt	At present there are no health based standards for Chloride in EPA's Safe Drinking Water Act.	YES
Alkalinity(mg/L)	36.75	N/A	N/A	Naturally present in the environment	High alkalinity does not pose a direct health risk	YES
Chlorine (mg/L)	1.43	4 (MDRL)	4.0 (MRDLG)	Water additive used to control microbes	Drinking of chlorinated water for 15 years or longer, has been officially linked to an increase in incidence of colon cancer	YES
Sulfate (mg/L)	21	N/A	N/A	Occurs naturally in drinking water.	Health concerns regarding sulfate in drinking water have been raised because of reports that diarrhea may be associated with the ingestion of water containing high levels of sulfate.	YES
pH	N/A	N/A	N/A	Acidity or low pH of drinking water is usually a result of natural geological conditions at the site, possibly compounded by acid rain.	The pH of drinking water is not a health concern	YES
Lead (mg/L)	0.0093	AL = 1.5	0	Corrosion of household plumbing systems; erosion of natural deposits	Lead in drinking water can also cause a variety of adverse health effects. In babies and children, exposure to lead in drinking water above the action level can result in delays in physical and mental development, along with slight deficits in attention span and learning abilities. In adults, it can cause increases in blood pressure. Adults who drink this water over many years could develop kidney problems or high blood pressure	YES
<b>Organic</b>						
Total Trihalomethane [TTHM] (ppb)	35.88 annual average	80	N/A	By-product of drinking water disinfection	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 system, and may have an increase of getting cancer.	YES
Haloacetic Acids [HAA5] (ppb)	16.81 annual average	60	N/A	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increase of getting cancer.	YES
<b>Semi - Volatiles</b>						
Bis – (2-ethylhexyl) phthalate (ppb)	1.6	400	400	Discharge from rubber and chemical factories	Low systemic toxicity, but ingestions of large doses cause gastrointestinal irritation, central nervous system depression, coma and hypotension.	YES
Acetone (ppb)	15	N/A	N/A	It occurs naturally in plants, trees, and volcanic gases, forest fires, in vehicle exhaust, tobacco smoke, and landfill sites.	No health-based limit has been established by the federal government. Acetone remains unregulated in tap water, without a maximum legal limit.	YES
<b>Microbiological</b>						
Turbidity (NTU)	0.19	TT	N/A	Soil runoff	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, associated headaches	YES
Total Organic Carbons [TOC] (mg/L)	2.74	TT	N/A	Naturally present in water	Total organic carbons (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increase risk of getting cancer.	YES
Total Coliform Bacteria	1	<40 samples >1 is positive	0	Naturally present in water	Coliforms are bacteria that are naturally present and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.	YES

### Glossary of Technical Terms, Abbreviations and Symbols

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

**Math symbols (<, >, ≤, ≥)** - < is less than, > is greater than, ≤ is less than or equal to, ≥ is greater than or equal to.

**Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCL's are enforceable standards.

**Maximum Contaminant Level Goal (MCLG)** - 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 and are non-enforceable health goals.

**Maximum Residual Disinfection 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 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.

**Microgram Per Liter (µg/L)** - 1 µg/L = 1 part in a billion parts which is equivalent to one minute in 2,000 years or a single penny in 10 million dollars.

**Milligram Per Liter (mg/L)** - 1mg/L = 1 part in a million parts which is equivalent to one minute in two years or a penny in ten thousand dollars.

**N/A, N/R** - N/A indicates Not Applicable, N/R indicates there is no current regulation covering the contaminant.

**Nephelometric Turbidity Units (NTU)** - Turbidity is measured with an instrument called a nephelometer. It measures turbidity in nephelometric turbidity units.

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

**Turbidity** - Water clarity. As turbidity increases, water becomes cloudy or milky as light is reflected off increasing numbers of suspended and colloidal particles.



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