



MEREDITH WATER DEPARTMENT ANNUAL DRINKING WATER QUALITY REPORT 2005

Meredith Water Department
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MISSION STATEMENT

To provide products and services of uncompromising value to the community by operating a public utility system that is economically sound, environmentally responsible, operationally reliable, and customer responsive.

VISION STATEMENT

To meet or exceed customer expectation in fiscal responsibility, customer service, water quality, and environmental protection.

VALUE STATEMENT

Community commitment to enhance the quality of life for Meredith Residents.

The Utility mission statement that is:

To Exceed Expectations in the Delivery of Public Service.

This handout is based on the Consumer Confidence Report (CCR) regulations were published by the US Environmental Protection Agency (USEPA). The CCR rule is the first EPA rule that addresses the public's right-to-know provisions of the 1996 SDWA Amendments.

INTRODUCTION

The 1996 amendment to the Safe Water Act requires an annual compliance report summarizing violations issued to Public Water Systems. The annual compliance report is submitted to the Environmental Protection Agency and is also made available to the public.

The WSEB (Water Supply Engineering Bureau) has completed a source water assessment for Meredith Municipal Water System, and community. The complete assessment report is available for inspection at the Meredith Water Department, or visit NH DES Drinking Water Assessment Program Web Site at WWW.DES.STATE.NH.US/DWSPP.

The purpose of this is to summarize the number and type of violations that public water systems receive as a result of failing to meet various requirements of the Safe Drinking Water Act. Meredith Water Department vigilantly safeguards its water supply and quality. Last year your tap water met all Environmental protection Agency and State drinking water health standards. In the past 25 years the Safe Drinking Water Act (SDWA) has been highly effective in protecting public health, and has also evolved to respond to new and emerging threats to safe drinking water.

Disinfecting of drinking water is one of the major public health advances in the 20th century. However the disinfectants themselves can react with naturally occurring materials in the water to form unintended by-products, which could pose a health risk. While disinfectants are effective in controlling many microorganisms they react with natural organic and inorganic matter in source water and distributed systems to form DBP (Disinfectants By-Products).

Health effects information

The following two disinfection by-products had a slight rise above the recommended limits.

Bromodichloromethan: Quantition Limits (ug/l - 0.5) Results (ug/l- 1.8)

Bromodichloromethan is a by-product of drinking water chlorination. The levels are information on whether any observed effects are due to Bromodichloromethan.

Chloroform: Quantition Limits (ug/l – 0.5) Results (ug/l – 4.7)

The primary routes of potential exposure to Chloroform are ingestion, inhalation, and dermal contact with water (eg, showering cleaning, and cooking). Therefore, most human are exposed to low levels of chloroform.

The source of drinking water (both tap water and bottled water) includes 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 materials, 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 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.

Organic chemicals contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, which includes possible contamination 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.

Dear Customer

The Town of Meredith NH is fortunate in having its own natural surface water supply located close to the center of town. We are proud to be your water supplier and will continue to inform you of our on-going efforts to provide you with the safest highest quality water we can. In repeated testing, the Meredith Water Department has never detected radon in its supply.

Meredith drinking water is treated with Chlorine for disinfection and Alum for Coagulation, which removes the small particles in the water that you can't see.

Turbidity is naturally occurring soil run off, which includes leaves, soil and other matter. Turbidity is a measure of cloudiness of the water. Turbidity values are used because it is the most ideal indicator of water quality; furthermore, turbidity values are used to measure the potential for interference with respect to the filtration system's ability to disinfect the water supply. The Turbidity of Meredith's drinking water ranges from .08 to .20 NTU'S (Nephelometric Turbidity). State of NH Department Environmental Services allowance is .30 NTU. Sodium Phosphate is used to raise the PH of the water to a more neutral state and Zinc Orthophosphate is added to the distribution system for corrosion control. We continually verify high quality by performing daily, monthly and yearly tests. These tests allow the Meredith Water Department, the New Hampshire Department of Environmental Services, and the Federal EPA to monitor for contaminants. This is to insure that the water that you receive is meeting all quality standards under the Safe Drinking Water Act.

Treated water is distributed via a system of pipes that are flushed twice a year. Flushing not only removes naturally occurring sediments, it also lets us find out ahead of time if anything in the system needs maintenance. We also do flow testing to determine what the pipe capabilities are for fire suppression.

Water mains and hydrants flow capabilities impact decisions as to what fire protection needs are required and where priorities should be placed with respect to upgrading substandard water mains. We will continue to inform you of our on going efforts to provide you with the safest highest quality water we can.

ABBREVIATIONS

PPM=	Parts Per Million	PPB=	Parts Per Billion
PPT=	Parts Per Trillion	N/A=	Not Applicable
NTU=	Nephelometric Turbidity Units	MFL=	Million Fibers per liter
ND=	Not detectable at testing limits	THM=	Trihalomethanes

DBP=
BDL=

Disinfectants by-products
Below Detection Levels

MG/L= Micrograms per liter

Improvements

In the fall of 2005 there is work in progress to replace Waukegan Ave. and High Street with new water and sewer mains. We are planning to design and constructing a new facility at the Cygnet Shores sewer pump station. A new water booster station at 18 Mile Point Road, which will service 36 homes in the development, has been constructed as well as new water and sewer mains for development.

Water Conservation

Why should you conserve water?

Like many things around us, we seldom appreciate what is plentiful and easy to obtain. And what could be more plentiful than water? To get water all we do is just turn on the faucet 24 hours a day and it's there, ready to use. But think again -- the water we use doesn't just magically appear.

Treated water is a carefully manufactured product, which appears in your home only after traveling through many miles of pipeline and lengthy treatment processes. It's a valuable resource that shouldn't be wasted.

Just 1% of the entire water supply in the world is available for human use -- the rest is salty or locked in ice caps and glaciers. Just this relatively small 1% keeps all the world's agricultural, manufacturing, community and personal household and sanitation needs operating. We actually drink very little of our processed "drinking water"; around 1% of all treated water. The rest goes on lawns, in washing machines, and down toilets and drains!

When you conserve water, you also save on other services. When you use less hot water, there is less energy needed to heat that water, thereby reducing your gas and electric bill. When you use less water, you also put less water down your sewer drains, thereby reducing your sewer bill. So you can see, by implementing a simple conservation program, you are helping the environment by helping ease the burden on water storage, purification, distribution system, and treatment facilities.

I. Background

- Article III (Use of System), Section 316: "Water is obtained from Lake Waukegan and is transmitted to the Water Plant for treatment; then to the individual services via the distribution system or stored in the Meredith Water Tank."
- Current water system/facilities are unable to adequately meet current and prospective needs of Meredith.
- Fire suppression capabilities affected along with community development.

II. Current Policy

- Article III (Use of System), Section 306: "Customers shall prevent all unnecessary waste of water. They shall not allow it to run to prevent freeze-ups. The Selectmen shall decide what constitutes waste or improper use and may restrict same. When necessary to conserve supply,

the Selectmen may restrict or prohibit the use of water for lawns, gardens, swimming pools or other nonessential uses.”

- Article VI (Penalties), Section 601: “Any person found to be violating any provisions of this Ordinance shall be served by the Town with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease said violation.”

III. Four Basic Components to a Water Conservation Program

Step One: Economize!

Look at your water habits developed over a lifetime. A lot of water goes down the drain because we have always thought of water as being plentiful and cheap. Typically, inside your house, bathroom facilities constitute nearly 75% of the water used. Become conscious of the amount of water you use, and look for ways to use less whenever you can. The most important thing to do: *Think* as you use water!

Step Two: Repair Leaks!

A leak of just one drop per second wastes 2,400 gallons of water a year. Leaks are one of the great enemies of your water conservation program and they can't be taken lightly.

Step Three: Install Water Saving Devices

There are as many devices you can buy and install fairly easily to reduce your water consumption. These include faucet aerators; flow regulators for showerheads; and displacement devices for toilets to reduce water consumption. Investing a little money, time and labor can have big paybacks to reduce water use.

Step Four: Reuse Water

Unused or slightly used water is often suitable for other purposes, even with no treatment or filtration. During a severe drought, reusing water may become a necessity. When maximum conservation is called for, make the most of any water before you let it go down the drain!

IV. Saving Water Outdoors

Northern states during the summer find that sometimes half or more of the water piped into homes is going right back out through hoses onto lawns and gardens. It's a fact of life that when more water is used outside, more is wasted there. But you don't have to let your lawn turn brown or the car get dirty to conserve water. Just use common sense instead.

Once you set a lawn sprinkler out and turn it on, it's easy to forget how much water you can waste in a short period of time. A single lawn sprinkler spraying five gallons per minute uses 50% more water in just one hour than a combination of ten toilet flushes, two 5-minute showers, two dishwasher loads and a full load of clothes!

The basic principle of lawn and garden watering is not to give your lawn and plants more than they need. Don't follow a fixed watering schedule. Water when the grass or plants show signs of needing it. Over watering is bad for plants and lawns.

V. Tips for Water Conservation

- When you are washing your hands, don't let the water run while you lather.
- Turn off the water while you shave and you can save more than 100 gallons a week.
- Choose new water-saving appliances, like washing machines that save up to 20 gallons per load.
- Turn the water off while you shampoo and condition your hair and you can save more than 50 gallons a week.
- More plants die from over-watering than from under-watering. Be sure only to water plants when necessary.
- Listen for dripping faucets and toilets that flush themselves. Fixing a leak can save 500 gallons each month.
- Wash clothes only when you have a full load and save up to 600 gallons each month.
- Turn off the water while you brush your teeth and save 4 gallons a minute. That's 200 gallons a week for a family of four.
- Don't buy recreational water toys that require a constant flow of water.
- Before you lather up, install a low-flow showerhead. They're inexpensive, easy to install, and can save your family more than 500 gallons a week.
- Put food coloring in your toilet tank. If it seeps into the toilet bowl, you have a leak. It's easy to fix, and you can save more than 600 gallons a month.
- Time your shower to keep it under 5 minutes. You'll save up to 1000 gallons a month.
- If your shower can fill a one-gallon bucket in less than 20 seconds, then replace it with a water-efficient showerhead.
- Run your washing machine and dishwasher only when they are full and you could save 1000 gallons a month.
- Designate one glass for your drinking water each day. This will cut down on the number of times you run your dishwasher.

VI. How You Could Be Affected

- Restrictions on water use
- Possible shutoffs
- Expansions needed (i.e. infrastructure replacement, water facility expansion, water storage tower construction) which will cost an estimated \$ 4 million dollars over time.
- Rate increases
- Possible shortages
- Unavoidable restrictions on community development
- Adjustments to CIP prioritizing

VII. Safe Drinking Water Act

Congress originally passed the Safe Drinking Water Act (SDWA) in 1974 to protect public health by regulating the nation's public drinking water supply.

- Millions of Americans receive high quality drinking water every day from their public water systems, (which may be publicly or privately owned). Nonetheless, drinking water safety cannot be taken for granted.
- There are a number of threats to drinking water: improperly disposed of chemicals; animal wastes; pesticides; human wastes; wastes injected deep underground; and naturally occurring substances can all contaminate drinking water.
- Likewise, drinking water that is not properly treated or disinfected, or which travels through an improperly maintained distribution system, may also pose a health risk.

VI. Other Information and Resources

New Hampshire Department of Environmental Services - www.des.state.nh.us/h2o_conservation.htm
 California Urban Water Conservation Council home conservation page - www.h2ouse.org
 Water Conservation News & Information Portal and Archive - www.waterconserve.info
 American Water Works Association - www.waterwiser.org and www.awwa.org/advocacy/learn/conserve
 US EPA Water Conservation Page - www.epa.gov/OW/you/intro.html
 Department of Land and Water Conservation - www.dlwc.nsw.gov.au
 Water - Use It Wisely: Water Saving Tips - www.wateruseitwisely.com/
 Water Conservation Tips - www.monolake.org/socalwater/wctips.htm
 Water Conservation for Kids - www.swfwmd.state.fl.us/waterkids
 The Land and Water conservation Fund - www.fs.fed.us/land/staff/LWCF/
 Industrial Water Conservation - www.p2pays.org/water
 The Conservation Fund - Home Page - www.conservationfund.org/

SEA Consultants Inc. Water System Evaluation Recommendations

I. Impetus

- “The Water System Analysis [conducted by SEA Consultants Inc.] indicates that the capacity of Meredith’s water treatment plant and storage tank are inadequate to meet current and projected demands.”

II. Capital Improvement Recommendations by SEA

To reduce costs and investment in capital infrastructure improvements, the first step is to:

- Eliminate blow-offs that account for over 20% or \$75,040 of total water produced by treatment plant.
 - Connect Circle Drive to Boynton Road to discontinue the blow-off on Boynton Road and recoup the 14,200,000 gallons or \$39,735 of treated water wasted through the blow-off each year.
- Complete a water meter calibration/replacement program to ensure meter reads are accurate.
- Evaluate alternative rate structures that will encourage conservation.
- Perform a leak detection study to reduce the percentage (10%) of unaccounted for water and save roughly \$38,000 each year.
- Implement public education programs to encourage conservation.
- Develop ordinances and policies for implementing voluntary and mandatory water restrictions.

The Town should develop a compliance strategy to help shape and formalize the planning process to address forthcoming regulatory requirements:

- Possible water treatment plant expansion.
- Acquiring land adjacent to the existing plant on Waukewan St.

To address the shortfall in water storage capacity, the Town should:

- Begin evaluating available properties for the siting of a second water storage tank, preferably situated on the north side of the railroad tracks.

SEA recommends that repairs and upgrades be made to the current distribution system, which includes:

- Replace the 6” cast iron main in Red Gate Lane with 8” ductile iron main at an estimated cost of \$325,000.
 - Replace the 10” cast iron main in Lower Ladd Hill Road and S. Main Street from Hillrise Lane to Stevens Ave with 12” ductile iron main at an estimated cost of \$350,000.
 - Replace the 6” cast iron main in High Street and Waukewan Ave with 8” ductile iron main at an estimated cost of \$580,000.
 - Replace the 6” cast iron main in Stevens Ave and Oak Street with 8” ductile iron main at an estimated cost of \$400,000.
 - Directional drill 12” HDPE main under Lake Waukewan from the end of Avery Street to Water Street and clean and line the existing 6” ductile iron main in Water Street at an estimated cost of \$280,000.
 - * The installation of a second water main crossing below the railroad tracks to prevent interference with current fire protection.
 - The construction of a new 12” cross-country main from the right-of-way west of Massachusetts Ave to the water treatment plant is one possibility.
 - The construction of a new cross country main(s) connecting the end of Upper Terrace Ave, the end of Bayshore Drive, and the existing water main near the 18-Mile Point Booster Pumping Station.
- * Because property acquisition requirements need to be more clearly defined neither project was included in the Capital Improvement Program.

III. Conclusions

- “Based on the review of Meredith’s current and projected demand requirements and to minimize impacts to rate payers, [SEA] recommends that [Meredith] develop management practices to curb overall water demand in the system before investing significant capital in water treatment plant infrastructureⁱ.”

All of this means the more water we, the people of Meredith, save the less money it will cost us today and tomorrow.

ⁱ SEA Consultants Inc. Water System Evaluation 3-9