# *2013*
# *ANNUAL WATER QUALITY REPORT*

We are pleased to provide you with our Annual Water Quality Report. Included with this report are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and State of Michigan standards. The utility welcomes this annual reporting requirement and views it as an opportunity to inform our customers about the high quality drinking water being supplied to them.

Alpena's water meets, or is better than state and federal standards. No violations of water quality standards were experienced during 2013.

If you have any questions about the contents of this report or have suggestions on making it more understandable, please contact:

**Terry Gougeon (Water Plant Manager)**
**at (989) 356-0757**

**QUESTIONS?**
Call U.S. EPA's Safe Drinking Water Hotline at
1-800-426-4791

## Working Hard for You!

Under the Safe Drinking Water Act (SDWA), the United States Environmental Protection Agency (USEPA) sets the national limits for hundreds of substances in drinking water and also specifies treatment methods that water systems must use to remove these substances. Similarly, the United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Each utility continually monitors the water produced for these substances and reports directly to their state regulatory agency, which in turn reports to the EPA, if any are detected in the drinking water. EPA uses this data to ensure that consumers are receiving clean water and verify that states are enforcing the laws that regulate drinking water.

Our Water Quality Report conforms to the federal regulation under the SDWA requiring water utilities to provide detailed water quality information to each of their customers annually. We are committed to providing you with this information about your water supply, because customers who are well informed are our best allies in supporting improvements necessary to maintain our ability to provide the highest quality drinking water.

Customers are invited to contact our utility at any time with questions or concerns, by calling (989) 356-0757.

Our water utility customers should consider themselves to be investor-owners of the system. The utility is managed as an enterprise fund and all operation, maintenance, and replacement expenditures are financed entirely by user fees. Consequently, all customer inquiries, requests, or suggestions are welcome and encouraged by the utility. ***The Alpena Municipal Council is responsible for overseeing the Alpena Water Utility, under the operation and management of United Water. The City Council meets on the first and third Monday of every month.*** Utility correspondence may be directed to the following personnel:

Terry Gougeon, United Water Plant Manager
Phone: 356-0757
Email: terry.gougeon@unitedwater.com

Mike Glowinski, United Water Utility Manager
Phone: 354-1400
Email: michael.glowinski@unitedwater.com

Greg Sundin, City Manager
Phone: 354-1711
Email: gregs@alpena.mi.us

Rich Sullenger, City Engineer
Phone: 354-1730
Email: richs@alpena.mi.us

**Information on the Internet:**
Water quality reports going back to 2007 can be found on the City of Alpena web site (www.alpena.mi.us). In addition, the EPA Office of Water (water.epa.gov) web site provides a substantial amount of information on many issues relating to water resources, water conservation and public health.

**I hope that you find this report both meaningful and informative. Terry Gougeon**

## Phragmites Control

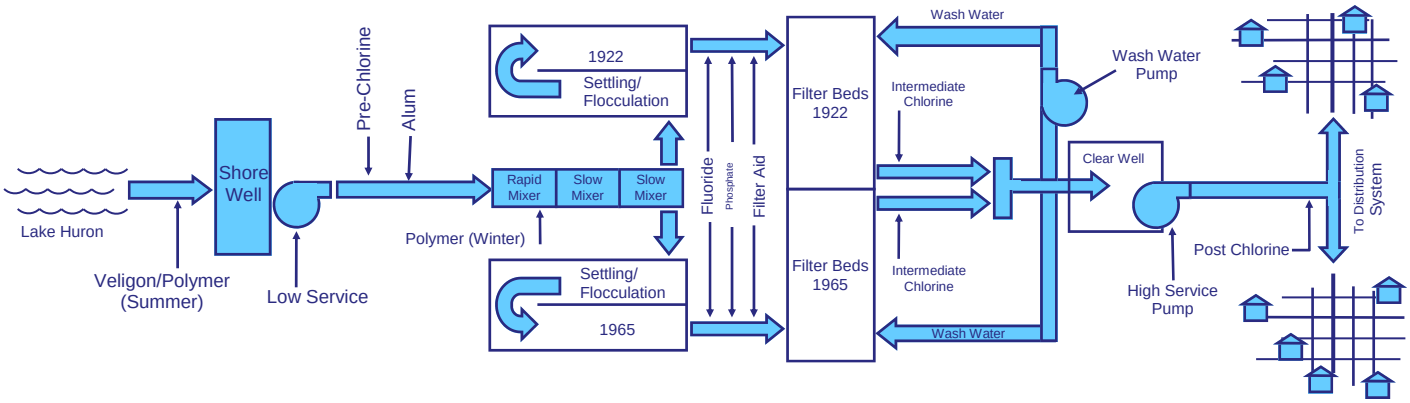
Non-native plant species like the tall grass above can be invasive and prohibit the growth of native plants. Personnel from Huron Pines and volunteers including personnel from the Water Plant work to eradicate phragmites from the shoreline at Mich-e-ke-wis.

## Where does our drinking water come from?

Our water source is surface water from **Thunder Bay (Lake Huron).** This source has been utilized in Alpena since 1905 and sample data shows that it is of high quality. State and federal environmental regulations have progressively become more stringent resulting in significant improvements in Great Lakes water quality. Efforts to protect our fresh water source include a "Source Water Assessment" conducted by the Michigan Department of Environmental Quality. Copies are available upon request. (356-0757) The assessment identifies sources of pollution that may have a negative impact on the quality of our source water. Water runoff into rivers or from street storm drains can carry contaminants into the Bay. Sanitary drains may also contribute to the contamination of our source water by adding substances that are not removed through the waste treatment process, such as pharmaceuticals that are flushed as waste from households.

## How is My Water Treated and Purified?

The treatment process consists of a series of steps. Raw water is drawn from Thunder Bay (Lake Huron) and pumped to a mixing tank where chlorine, alum and polymer are added. The addition of these chemicals causes small particles to adhere to one another until they are heavy enough to settle in a basin from which sediment is removed. After settling, filter aid is added, if necessary, for turbidity removal (turbidity is a common measure of the clarity of water). Also added at this point are fluoride (which helps prevent tooth decay) and phosphate (which helps minimize corrosion in the water system). The water is then filtered through a layer of granular activated carbon and sand. As smaller, suspended particles are removed, turbidity decreases and clear water emerges. Chlorine is added again at this point as a final disinfectant. Chlorine is carefully monitored to maintain the required minimal dosage throughout the distribution system, to insure the microbial safety of your water. The water is then pumped through the distribution piping to water towers, and your home or business.




**Alpena's water use during the year 2013:**
Includes water to Alpena Township

722.38million gallons, total yearly production
1.98 million gallons, average day.
2.95 million gallons, maximum day.

## Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only reduce your water usage, but can also save you money by reducing your water and sewer bills. Here are a few suggestions:

### Conservation measures you can use inside your home include:

- Fix leaking faucets, toilets shower heads, etc.
- Install water-saving devices in faucets, toilets and appliances
- Replace old fixtures (could reduce water consumption by nearly one-half)
- Wash only full loads of laundry
- Do not use the toilet for a trash disposal
- Take shorter showers
- Water your lawn and garden in the early morning or evening.

## What's In My Water?

We are pleased to report that during the past year, the water delivered to your home or business complied with, or was better than, all state and federal drinking water requirements. Each year we analyze thousands of water samples for bacteria, turbidity, lead, copper and other metals ,nitrate, volatile organic chemicals, synthetic organic chemicals and disinfection byproducts. For your information, we have compiled a list in the table below showing which substances were detected in our drinking water. Although all of the substances listed below are under the Maximum Contaminant Level (MCL), set by the U.S. Environmental Protection Agency, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. None of the other contaminants regulated by the EPA were detected in our water.

**REGULATED CONTAMINANTS:** The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some could be more than one year old. Sampled at plant tap. (point of entry to the distribution)

| Substance (Units) | Year Sampled | Date Sampled | MCL | MCLG | Average Detected | Range Low-High | Violation | Typical Source |
|---|---|---|---|---|---|---|---|---|
| Barium (ppm) | 2011 | 6/20/11 | 2 | 2 | 0.01 | NA | No | Erosion of natural deposits. |
| Fluoride (ppm) | 2013 | Daily | 4 | 2 | 0.82 | 0.46-1.08 | No | Erosion of natural deposits, water additive which promotes oral health |
| Turbidity (NTU) | 2013 | Daily | TT | NA | 0.06 | 0.04-0.10 | No | Soil runoff |
| Nitrate (ppm) | 2013 | 6/19/13 | 10 | 10 | 0.21 | NA | No | Erosion of natural deposits Runoff from fertilizer use |
| Total Organic Carbon (removal ratio) (ppm) | 2013 | Quarterly | ≥1 | NA | 1.41 | 1.16-1.78 | No | Naturally present in the environment |

**UNREGULATED CONTAMINANTS:** Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where these contaminants occur and whether it needs to regulate those contaminants. Sampled at plant tap.

| Substance (Units) | Year Sampled | Date Sampled | MCL | MCLG | Average Detected | Range Low-High | Violation | Typical Source |
|---|---|---|---|---|---|---|---|---|
| Sodium (ppm) | 2013 | 6/20/13 | NA | NA | 8 | NA | No | Erosion of natural deposits |
| Chloride (ppm) | 2013 | 6/19/13 | NA | NA | 10 | NA | No | Erosion of natural deposits |
| Sulfate (ppm) | 2013 | 6/19/13 | NA | NA | 33 | NA | No | Naturally occurring |
| Iron (ppm) | 2013 | 6/18/13 | NA | NA | 0.26 | NA | No | Naturally present |
| Hexavalent Chromium (ppb) | 2013 | Quarterly | NA | NA | 0.09 | 0.07-0.10 | No | Discharge from steel and pulp mills; erosion of natural deposits |
| Strontium (ppb) | 2013 | Quarterly | NA | NA | 99 | 91-110 | No | Naturally present |
| Chlorate (ppb) | 2013 | Quarterly | NA | NA | 118 | 66-180 | No | Decomposition of disinfectant |
| Vanadium (ppb) | 2013 | Quarterly | NA | NA | 0.30 | ND-0.30 | No | Naturally present |
| **UNREGULATED CONTAMINANTS:** Sampled from a maximum residence time site in the distribution | | | | | | | | |
| Hexavalent Chromium (ppb) | 2013 | Quarterly | NA | NA | 0.10 | 0.08-0.14 | No | Discharge from steel and pulp mills; erosion of natural deposits |
| Strontium (ppb) | 2013 | Quarterly | NA | NA | 101 | 93-110 | No | Naturally present |
| Vanadium (ppb) | 2013 | Quarterly | NA | NA | 0.30 | ND-0.30 | No | Naturally present |
| Chlorate (ppb) | 2013 | Quarterly | NA | NA | 119 | 71-170 | No | Decomposition of disinfectant |

**REGULATED DISTRIBUTION SYSTEM CONTAMINANTS:** Lead and copper samples were collected from taps at 30 high-risk homes. These levels are not found in the City's water and demonstrate levels found in household plumbing. Sampling occurs on a three year cycle.

| Substance (Units) | Year Sampled | Month Sampled | Action Level | MCLG | 90th Percentile | Amount Detected | Sites Above AL | Typical Source |
|---|---|---|---|---|---|---|---|---|
| Copper (ppb) | 2011 | July | 1300 | 1300 | 210 | 0-530 | 0 | Corrosion of household plumbing |
| Lead (ppb) | 2011 | July | 15 | 0 | 2 | 0-7 | 0 | Corrosion of household plumbing |

| Substance (Units) | Year Sam-pled | Date Sampled | MCL | MCLG | RAA Detected | Range Low-High | Violation | Typical Source |
|---|---|---|---|---|---|---|---|---|
| TTHMs (ppb) | 2013 | Quarterly | 80 | 0 | 32 | 16-48 | No | Disinfection Byproduct |
| HAAs (ppb) | 2013 | Quarterly | 60 | 0 | 14 | 9-18 | No | Disinfection Byproduct |
| Free Chlorine (ppm) | 2013 | Daily | 4.0 | 4.0 | 0.73 | 0.20-1.05 | No | Disinfectant added to control microbes |

**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 City of Alpena 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 EPA Safe Drinking Water Hotline 1– 800 426 -4791 or at http://www.epa.gov/safewater/lead.

**PLEASE SEE NEXT PAGE FOR ABBREVIATIONS, DEFINITIONS KEY**

## DEFINITION KEY:

| | |
|---|---|
| **MCL - Maximum Contaminant Level:** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. | **MCLG - Maximum Contaminant Level Goal:** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. |
| **TTHMs—Total Trihalomethanes:** 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 increased risk of getting cancer. | **Turbidity:** Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indictor of the effectiveness of our filtration system. It is measured in NTU'S. |
| **ppm-Parts per million:** One part per million (or milligrams per liter - mg/L) is equivalent to one penny in $10,000. | **ppb-Parts per billion:** One part per billion (or micrograms per liter - µg/L) is equivalent to one penny in $10,000,000. |
| **HAAs-Haloascetic acids:** Some who drink water containing HAAs in excess of the MCL over many years may have an increased risk of cancer. | **TT-Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water. |
| **AL - Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. | **NTU - Nephelometric Turbidity Units:** Measurement of the clarity, or turbidity, of water. |
| **RAA - Running Annual Average.** | **NA - Not Applicable.** |
| **≥ - Greater than or equal to.** | **ND - Not Detected** |

### Substances Expected to be in Drinking Water

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, radioactive material, and can pick up substances resulting from the presence of animals and human activity. 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. More information about contaminants and potential health effects can be obtained by calling the U.S.EPA's Safe Drinking Water Hotline (1-800-426-4791).

**Substances 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.

**Pesticides and Herbicides,** which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

**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.

**Organic Chemical Contaminants,** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

**Total Organic Carbon** (TOC), is naturally present in the water. The removal ratio is calculated as the ratio between the tap TOC and the source TOC. The ratio shown is the average of the ratios and the range is of the quarterly ratios for the 12 months covered by this report. TOC has no health effects but provides a medium for the formation of disinfection byproducts.

### *Drinking Water and People with Weakened Immune Systems*

*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 EPA Safe Drinking Water Hotline (800-426-4791).*

**DRINKING WATER PROJECTS:** A long needed project was completed in October of 2013. The 1922 valve used to isolate the inner section of the drinking water storage tank at the Plant was replaced. The valve would not close tightly and made it impossible to accomplish inspections or maintenance to the interior of this section of the storage tank.

1922 valve needing replacement, located within a concrete vault.

The new valve and pipe section being assembled prior to installation.

Cutting the pipe outside the valve box, where the new valve and pipe section will be inserted.