2014
City of Alpena - Annual Water Quality Report

QUESTIONS?

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

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 exceeds state and federal standards. No violations of water quality standards were experienced during 2014.

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

Michael Collins - Water Plant Manager
(989) 356-0757

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.

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.

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

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:

Mike Collins, United Water - Plant Manager
Phone: 356-0757
Email: mike.collins@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

ONLINE INFORMATION:
Water quality reports going back to 2007 can be found on the City of Alpena web site (www.alpena.mi.us).
Additionally, the EPA Office of Water (water.epa.gov) web site provides a substantial amount of information on many issues.

I hope that you find this report both meaningful and informative. Mike Collins

Winter sunrise over Thunder Bay—Lake Huron

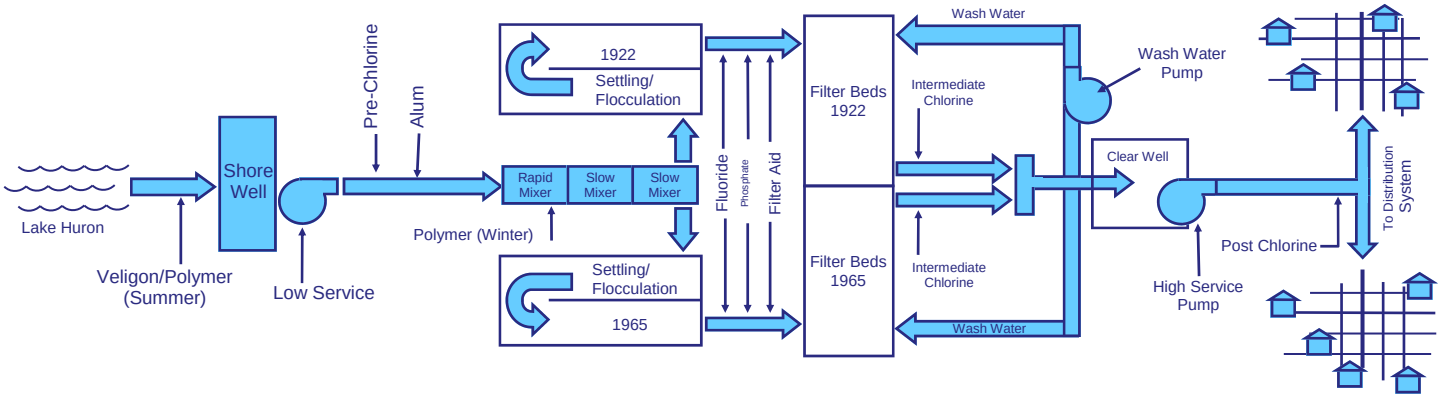
A vibrant sunrise as seen from the Water Treatment Plant.

WHERE DOES OUR DRINKING WATER COME FROM?

Our water source is surface water from **Thunder Bay - Lake Huron.** Lake Huron has been the source for Alpena's water supply since 1905. Current and historical sample data shows that it is of high quality. State and federal environmental regulations have progressively become more stringent, resulting in significant improvement to 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. The assessment identifies sources of pollution that may have a negative impact on the quality of our source water.

HOW IS MY WATER TREATED?

The treatment process consists of a series of steps. Raw water is drawn from Thunder Bay (Lake Huron) and pumped to a mixing tank; along the way chlorine is added for disinfection of pathogens. Alum and polymer are also added. The addition of these chemicals causes small particles to adhere to one another until they are heavy enough to settle to the bottom of basins. This sediment is then removed and only the cleaner water continues throughout the Plant. 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 pf pipes 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.



WATER USE DURING 2014:
Includes water supplied to Alpena Township

753.58 million gallons, total yearly production
2.06 million gallons, average day.
3.02 million gallons, maximum day.

WE ALL SHARE THE SAME WATER, PLEASE USE IT WISELY

Water conservation measures are an important 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.

Conservation measures you can use inside your home include:

- Fix leaking faucets, toilets shower heads, etc. (A leaking toilet can waste 75 gallons a day, or more)
- Install water-saving devices in faucets, toilets and appliances
- Replace old fixtures (could reduce water consumption by nearly one-half)
- Wash full loads of laundry
- Do not use the toilet for 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. 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 within the limits 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. No other contaminants regulated by the EPA were detected in our water.

REGULATED CONTAMINANTS: Sampled at Plant Tap (point of entry to the distribution).
The State allows monitoring 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.

Substance (Units)	Year Sampled	Date Sampled	MCL	MCLG	Average Detected	Range	Violation	Typical Source
Barium (ppm)	2011	6/20/11	2	2	0.01	NA	No	Erosion of natural deposits.
Fluoride (ppm)*	2014	Daily	4	2	0.77	0.32-1.19	No	Erosion of natural deposits, water additive promoting oral health. * Alpena is a Fluoridated system.
Turbidity (NTU)	2014	Daily	TT	N/A	0.06	0.03-0.60	No	Soil runoff.
Nitrate (ppm)	2014	7/8/14	10	10	0.24	NA	No	Erosion of natural deposits, runoff from fertilizer use.
TOC Removal Ratio (ppm)	2014	Quarterly	TT	None	1.32	0.88-1.93	No	Naturally present in the environment.

UNREGULATED CONTAMINANTS: Sampled at Plant Tap.
Unregulated contaminants are those for which the EPA has not established drinking water standards.
Monitoring helps the EPA determine where these contaminants occur and whether they need to be regulated in the future.

Substance (Units)	Sample Year	Date Sampled	MCL	MCLG	Detected	Range	Violation	Typical Source
Sodium (ppm)	2014	7/8/14	NA	NA	7.3	NA	No	Erosion of natural deposits.
Chloride (ppm)	2014	7/8/14	NA	NA	9.3	NA	No	Erosion of natural deposits.
Sulfate (ppm)	2014	7/8/14	NA	NA	21	NA	No	Naturally occurring.
Iron (ppm)	2014	7/8/14	NA	NA	0.08	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 at a Maximum Residence Time site in the distribution system

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: Sampled at 30 high-risk homes every 3 years. These levels are not found in the City's water supply. The results indicate levels found in household plumbing.

Substance (Units)	Sample Year	Month Sampled	Action Level	MCLG	90th Percentile	Range Detected	Sites Above AL	Typical Source
Copper (ppm)	2014	July	1.3	1.3	0.130	0.007-0.400	0	Corrosion of household plumbing.
Lead (ppb)	2014	July	15	0	1	0-2	0	Corrosion of household plumbing.

REGULATED DISTRIBUTION SYSTEM CONTAMINANTS: Sampled at a Distribution system Maximum Residence Time site

Substance (Units)	Sample Year	Sampled	MCL	MCLG	Quarterly RAA	Range Detected	Violation	Typical Source
TTHMs (ppb)	2014	Quarterly	80	N/A	37.8	15-65	No	Disinfection Byproduct.
HAAs (ppb)	2014	Quarterly	60	N/A	18.1	7.6-44	No	Disinfection Byproduct.
Free Chlorine (ppm)	2014	Daily	4.0	4.0	0.84	0.35-1.20	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 online at www.epa.gov/safewater/lead.

ABBREVIATIONS AND 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.

HAAs - Haloascetic acids: Some who drink water containing HAAs in excess of the MCL over many years may have an increased risk of cancer.

ppb-Parts per billion: One part per billion (micrograms per liter - µg/L) is equivalent to one penny in $10,000,000.

ppm-Parts per million: One part per million (milligrams per liter - mg/L) is equivalent to one penny in $10,000.

Disinfection Byproducts - TTHMs and HAAs: Byproducts that can form during disinfection when Chlorine reacts with naturally-occurring materials in water. These may pose health risks.

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. Calculated average based on the average of the samples taken during the most recent consecutive 12 month period.

NA: Not Applicable **≥: Greater than or equal to.**

ND: Not Detected

SUBSTANCES ARE 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 materials. Substances are also added from animal 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.

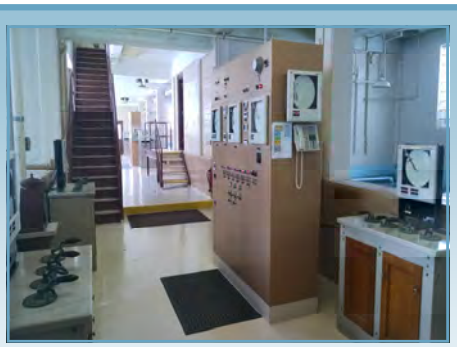
More information about contaminants and potential health effects can be obtained by calling the U.S.EPA's Safe Drinking Water Hotline (1-800-426-4791).

SUBSTANCES THAT MAY BE PRESENT IN SOURCE WATER:

Microbial Contaminants- Viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.	**Inorganic Contaminants**- Salts and metals, which can be naturally-occurring or a result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
Pesticides and Herbicides- May come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.	**Organic Chemical Contaminants**- 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)- 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 shown represents all quarterly ratios for 2014. TOC has no health effects but provides a medium for the formation of disinfection byproducts.	

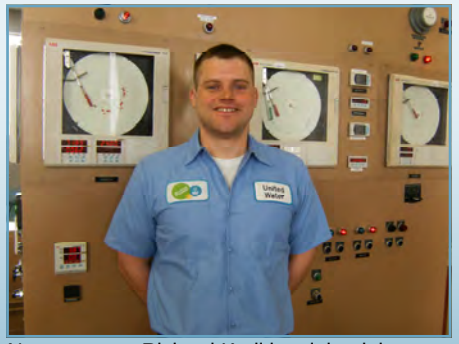
DRINKING WATER AND PEOPLE WITH WEAKENEND IMMUNE SYSTEMS

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).

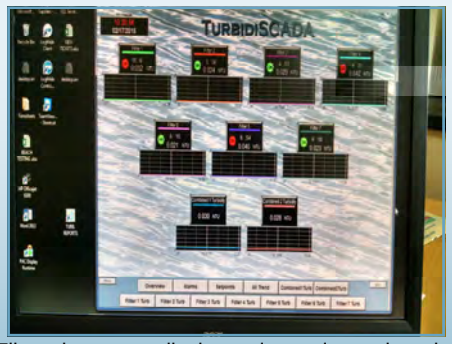


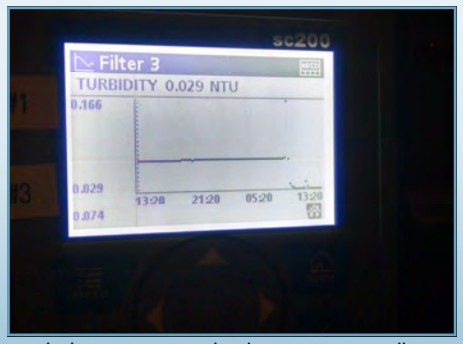
A view of the filter gallery and operations control panel inside the Plant.

The Clearwell restoration project was completed last fall. The Clearwell, originally constructed in 1922, provides finished water storage. This aging tank was resealed and reinforced to allow for continued use.



New operator Richard Kroll has joined the team as a Water Plant Operator.





Filtered water quality is continuously monitored and recorded to ensure production meets compliance standards. The SCADA system received new turbidity units, controllers and upgraded software. This system allows operators to monitor production and alerts them of needed operational changes.