

Annual Drinking Water Quality Report

City of Alpena Municipal Water

for: January 1, 1998 to December 31, 1998

Dear Water Utility Customer:

We are pleased to provide you with the first copy in a continuing series of Annual Water Quality Reports. The "Safe Drinking Water Act" was re-authorized and signed into law by President Clinton in the fall of 1998. A key component of the new law is mandatory public disclosure about compliance with drinking water regulations. 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. The sample results presented in the following report are technical in nature, and our goal is to help you understand how the data supports the safety of consuming drinking water provided by the City of Alpena. If you have any questions about the contents of this report or have suggestions on making it more understandable, please contact **Jerry Plume (Water Plant Superintendent) at 356-0757**.

Our fresh 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. Over the last 25 years, state and federal environmental regulations have become progressively more stringent resulting in significant improvements in Great Lakes water quality. As you will see in the following report, we closely monitor both the source water and the treated drinking water supplied to you to ensure its quality and safety. Future efforts to protect our fresh water source will include a formal "Source Water Assessment" to be conducted by the Michigan Department of Environmental Quality. The assessment will identify sources of pollution that may have a negative impact on the quality and safety of our source water. The assessment is expected to begin within the next two years.

The City of Alpena Water Plant routinely monitors your drinking water for impurities according to federal and state laws. The table included with this report shows the results of our monitoring for the period **January 1 to December 31, 1998**. Sample results that are more than five (5) years old need not be included in the report, even if they are the last available data for the supply. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of impurities does not necessarily indicate that consuming the water poses an increased health risk. 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 or from human activity. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Contaminants that may be present in source water include:

(A) Microbial contaminants, such as viruses and bacteria, which may come from sewage

treatment plants, septic systems, agricultural livestock operations, and wildlife.

- (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- (E) 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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

As you will see by the following table, our water system had no Maximum Contaminate Level (MCL) violations during 1998. We are proud that your drinking water meets or exceeds all federal and state requirements. We have learned through our monitoring and testing that some contaminants have been detected, but the concentrations found are well below the regulatory standards. The EPA has determined that your water IS SAFE at these levels.

Maximum contaminate levels are set at very restrictive concentrations. To understand the possible health effects described for many of the regulated contaminants listed in this report, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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 for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Center for Disease Control, 1-800-342-2437) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Lead and copper test results on the following table (items 14 & 17) are samples collected in high-risk homes and demonstrate levels found in the plumbing of the household. This EPA-mandated "Lead and Copper Program" was started in 1992, and at that time 42 high-risk homes were placed on the program. A high-risk home is one containing lead solder joints on copper plumbing installed after 1982, homes with lead pipes, and homes with lead service lines. **The tap water being produced at the Alpena Water Plant contains no detectable lead or copper.**

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 welcomed and encouraged by the utility. **The Alpena Municipal Council is responsible for overseeing the Alpena Water Utility. The City Council meets on the first and third Monday of every month.** Utility correspondence may be directed to the following personnel:

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TEST RESULTS						
The following are the highest levels detected during the year 1998						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
3. Turbidity	N	0.38	NTU	0.50	5NTU one day. Less than 0.5 NTU in 95% per month	Soil runoff
5. Alpha emitters	N	1.0 ± 0.8	pCi/l	0	15	Erosion of natural deposits
Inorganic Contaminants (lead and copper samples were collected from 30 high-risk homes. The levels found are not found in the City's drinking water)						
14. Copper	N	287	ppb	1300	AL=1300	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
16. Fluoride	N	1.1	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
17. Lead	N	4	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Volatile Organic Contaminants						
73. TTHM [Total trihalomethanes]	N	31.7	ppb	0	100	By-product of drinking water chlorination

In the preceding table were many terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following definitions:

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

MCL (*Maximum Contaminant Level*) - The “Maximum Allowed” MCL is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (*Maximum Contaminant Level Goal*) - The “Goal” MCLG is 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.

NA (*Not Applicable*) - Because the level of the alpha emitters was low, further testing was not necessary.

ND (*Non-Detects*) - laboratory analysis indicates that the constituent is not present.

NTU (*Nephelometric Turbidity Unit*) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

PCi/L (*Picocuries per liter*) - picocuries per liter is a measure of the radioactivity in water.

Ppb (*Parts per billion*) or *Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Ppm (*Parts per million*) or *Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.

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

In addition to detected contaminants, the following is a list of tested for but not detected contaminants.

Microbiological Contaminants						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
1. Total Coliform Bacteria	N	ND		0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination

2. Fecal coliform and <i>E.coli</i>	N	ND		0	a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Human and animal fecal waste
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Radioactive Contaminants

4. Beta/photon emitters	N	NA	mrem/yr	0	4	Decay of natural and man-made deposits
6. Combined radium	N	NA	pCi/l	0	5	Erosion of natural deposits

Inorganic Contaminants

7. Antimony	N	ND	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic	N	ND	ppb	n/a	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
10. Barium	N	ND	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
11. Beryllium	N	ND	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
12. Cadmium	N	ND	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chromium	N	ND	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
15. Cyanide	N	ND	ppb	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
18. Mercury (inorganic)	N	ND	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
19. Nitrate (as Nitrogen)	N	ND	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
20. Nitrite (as Nitrogen)	N	ND	ppm	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
21. Selenium	N	ND	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
22. Thallium	N	ND	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination

Synthetic Organic Contaminants including Pesticides and Herbicides						
23. 2,4-D	N	ND	ppb	70	70	Runoff from herbicide used on row crops
24. 2,4,5-TP (Silvex)	N	ND	ppb	50	50	Residue of banned herbicide
26. Alachlor	N	ND	ppb	0	2	Runoff from herbicide used on row crops
27. Atrazine	N	ND	ppb	3	3	Runoff from herbicide used on row crops
29. Carbofuran	N	ND	ppb	40	40	Leaching of soil fumigant used on rice and alfalfa
30. Chlordane	N	ND	ppb	0	2	Residue of banned termiticide
34. Dibromochloropropane	N	ND	nanograms/l	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
35. Dinoseb	N	ND	ppb	7	7	Runoff from herbicide used on soybeans and vegetables
39. Endrin	N	ND	ppb	2	2	Residue of banned insecticide
43. Heptachlor	N	ND	nanograms/l	0	400	Residue of banned termiticide
44. Heptachlor epoxide	N	ND	nanograms/l	0	200	Breakdown of heptachlor
45. Hexachlorobenzene	N	ND	ppb	0	1	Discharge from metal refineries and agricultural chemical factories
46. Hexachlorocyclopentadiene	N	ND	ppb	50	50	Discharge from chemical factories
47. Lindane	N	ND	nanograms/l	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens
48. Methoxychlor	N	ND	ppb	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
49. Oxamyl [Vydate]	N	ND	ppb	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
50. PCBs [Polychlorinated biphenyls]	N	ND	nanograms/l	0	500	Runoff from landfills; discharge of waste chemicals
51. Pentachlorophenol	N	ND	ppb	0	1	Discharge from wood preserving factories
52. Picloram	N	ND	ppb	500	500	Herbicide runoff
53. Simazine	N	ND	ppb	4	4	Herbicide runoff
54. Toxaphene	N	ND	ppb	0	3	Runoff/leaching from insecticide used on cotton and cattle
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination

Volatile Organic Contaminants

55. Benzene	N	ND	ppb	0	5	Discharge from factories; leaching from gas storage tanks and landfills
56. Carbon tetrachloride	N	ND	ppb	0	5	Discharge from chemical plants and other industrial activities
57. Chlorobenzene	N	ND	ppb	100	100	Discharge from chemical and agricultural chemical factories
58. o-Dichlorobenzene	N	ND	ppb	600	600	Discharge from industrial chemical factories
59. p-Dichlorobenzene	N	ND	ppb	75	75	Discharge from industrial chemical factories
60. 1,2 - Dichloroethane	N	ND	ppb	0	5	Discharge from industrial chemical factories
61. 1,1 - Dichloroethylene	N	ND	ppb	7	7	Discharge from industrial chemical factories
62. cis-1,2-ichloroethylene	N	ND	ppb	70	70	Discharge from industrial chemical factories
63. trans - 1,2 - Dichloroethylene	N	ND	ppb	100	100	Discharge from industrial chemical factories
64. Dichloromethane	N	ND	ppb	0	5	Discharge from pharmaceutical and chemical factories
65. 1,2-Dichloropropane	N	ND	ppb	0	5	Discharge from industrial chemical factories
66. Ethylbenzene	N	ND	ppb	700	700	Discharge from petroleum refineries
67. Styrene	N	ND	ppb	100	100	Discharge from rubber and plastic factories; leaching from landfills
68. Tetrachloroethylene	N	ND	ppb	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners
69. 1,2,4 - Trichlorobenzene	N	ND	ppb	70	70	Discharge from textile-finishing factories
70. 1,1,1 - Trichloroethane	N	ND	ppb	200	200	Discharge from metal degreasing sites and other factories
71. 1,1,2 -Trichloroethane	N	ND	ppb	3	5	Discharge from industrial chemical factories
72. Trichloroethylene	N	ND	ppb	0	5	Discharge from metal degreasing sites and other factories
74. Toluene	N	ND	ppm	1	1	Discharge from petroleum factories
75. Vinyl Chloride	N	ND	ppb	0	2	Leaching from PVC piping; discharge from plastics factories
76. Xylenes	N	ND	ppm	10	10	Discharge from petroleum factories; discharge from chemical factories