University of Alaska Fairbanks
Facilities Services
2004 Water Quality Report
Division of Utilities
Water Treatment Plant
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Campus Drinking Water

The UAF Water Plant, Facilities Services – Utilities Division, is proud to announce that it met all U.S. EPA and Alaska Department of Environmental Conservation (ADEC) safe drinking water regulations for the calendar year of 2004. This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to EPA and state standards.

UAF has two primary drinking water wells and a third emergency well. The wells are drilled to depths of 70, 90, and 44 feet. The primary wells are located in heated, secure buildings with concrete floors. The buildings and pads are elevated to prevent runoff from entering the wells. The wells are located on University property. The ADEC has compiled a Source Water Assessment of our source of public drinking water. This assessment has defined an area around our wells that is critical to the preservation of the quality of our drinking water. Within this area, they have identified potential and existing sources of contamination. Based on the information gathered, ADEC has determined the overall vulnerability of our wells to contamination. The results are available at the following locations: Rasmuson Library, UAF Power Plant, and the Fairbanks North Star Borough Library.

1.5 million gallon storage tank

Contaminant Sources

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

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.

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, 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 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 by-products of industrial processes and petroleum production, and can also, come from gas stations, urban storm water runoff, and septic systems. Radioactive contaminants 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 that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Aeration Chamber & Filter Trains at the Water Treatment Plant

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Arsenic

While your drinking water contains low levels of arsenic it is lower then the EPA's standard for arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral
known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Arsenic has been a major concern of the University Water Plant for many years. Naturally occurring Arsenic is very plentiful in the Fairbanks area. In 2004, the University Water Plant tremendously reduced Arsenic levels in the potable water by optimizing chemical dosages. For the year, the potable water tested below 10 ppb, with the last eight months of the year (May – Dec.) testing below detectable limits for Arsenic. The lowest detectable limit for Arsenic is 2.5 ppb. This is significant success for UAF due to the EPA's lowering of the MCL for Arsenic in 2006 to 10 ppb.

Total Trihalomethanes (TTHM)

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 systems, and may have an increased risk of getting cancer.

Total Trihalomethanes (TTHM) are a byproduct of chlorinating water that contains natural organics. The ground water used by the University Water Plant has always had these organics, derived, most likely from decaying plant materials and thus, TTHM's have probably always been in the chlorinated water. An EPA survey discovered that trihalomethanes are present in virtually all chlorinated water supplies. In an effort to lower TTHM levels, EPA required large towns and cities to reduce TTHM levels in potable water. However, recent changes in national drinking water quality standards now require that all water treatment systems, regardless of size, reduce
TTHM's.

Although the University Water Plant has been testing TTHM levels for several years, 2004 was the first year subject to state regulation for these contaminants. Likewise, 2004 was also the first year, in which, every water sysefforts. The results, shown in the Water Quality Data Table, show Lead and Copper levels far below EPA and ADEC recommended levels.

Drinking Water Definitions

MCLG: Maximum Contaminant Level Goal: 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.

MCL: Maximum Contaminant Level: 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.

AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MRDLG: Maximum residual disinfection level goal. 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.

MRDL: Maximum residual disinfectant level. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Translations

Spanish:

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Russian:

Данный рапорт содержит важную информацию о вашей питьевой воде. Переведите его или проконсультируйтесь с тем, кто его понимает.

Japanese:

この情報は重要です。
翻訳を依頼してください。

Korean:

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

Water Quality Data Table

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Contaminants (units)	MCLG	MCL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Disinfectants & Disinfection By-Products								
Halo acetic Acids (HAA5) (ppb)	NA	60	4.44	NA		11/22/04	No	By-product of drinking water chlorination
Inorganic Contaminants								
Arsenic (ppb)	NA	50	7.24	ND	7.24	----	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate [measured as Nitrogen] (ppm)	10	10	1.71	NA		11/22/04	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Microbiological Contaminants								
Total Coli form (# monthly) ((Samples<=40/month) # monthly positive samples)	0	1	0	NA		----	No	Naturally present in the environment
Unregulated Contaminants								
Bromodichloromethane (ppb)	NA	NA	10	NA		11/22/04	No	Component of TTHM
Chloroform (ppb)	NA	NA	40	NA		11/22/04	No	Component of TTHM
Dibromochloromethane (ppb)	NA	NA	1.6	NA		11/22/04	No	Component of TTHM
Volatile Organic Contaminants								
TTHMs [Total Trihalomethanes] (ppb)	NA	80	77.17	60.2	109	----	No	By-product of drinking water chlorination

	MCLG	AL	Your Water	Samples > AL	Sample Date	Exceeds AL	
Inorganic Contaminants							
Copper (ppm)	1.3	1.3	0.712	0	12/20/04	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead (ppb)	0	15	1.42	0	12/20/04	No	Corrosion of household plumbing systems; Erosion of natural deposits

Units Description:

NA: Not applicable

ND: Not detected

ppm: parts per million, or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

# of monthly positive samples: Number of samples taken monthly that were found to be positive

For More Information

Web address for the latest information about the proposed changes to the 50 ppb Standard for Arsenic in drinking water
http://www.epa.gov/OGWDW/arsenic.html

Web address for information about all public water systems in Alaska
http://www.epa.gov/safewater/dwinfo/ak.htm

Web address for information about current drinking water standards, MCLs
http://www.epa.gov/safewater/mcl.html

Other 2004 Information

The University Water Plant increased its process control in 2004 by the addition of new *Grundfos*® Digital Dosing pumps. These pumps allow the plant to dial in exact amounts of the chemicals used to purify the water. By their ability to feed exacting amounts, these pumps help to lower chemical cost by reducing waste.

New *HACH® 1720E* turbidity meters were installed during the summer of 2004. Turbidity is measurement of water clarity taken by passing light through a column of water. The turbidity readings give the water plant personnel an indication of efficiency during the water treatment process. In other words, it lets us know the chemicals are working. The second phase of the Raw Water line improvement was also completed in 2004. The raw water line carries water from the well houses, to the power plant and water plant. This has been an on going project for the Division of Utilities to prevent an unexpected line rupture.

Educational Statement for Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from Safe Drinking Water Hotline (800-426-4791).

The Division of Utilities performed its three year Lead and Copper testing in December 2004. These analyses give us a greater understanding of the corrosive conditions in the water system. High levels of Lead and/or Copper indicate the need to improve corrosion control efforts. The results, shown in the Water Quality Data Table, show Lead and Copper levels far below EPA and ADEC recommended levels.

Contact Us

If you have any questions or concerns about the quality of your water, or if you would like to arrange a tour of the water plant please feel free to contact the Water Plant at (907) 474-5604 or email Ben Stacy, Water Plant Operator at fnbas1@uaf.edu.

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