


NOME JOINT UTILITY SYSTEM

2001 Annual Drinking Water Quality Report

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Nome Joint Utility System (NJUS) is pleased to present the 2001 Annual Drinking Water Quality Report. This report is designed to inform you about the quality of drinking water and services we provide you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the effort we make to continually improve and protect our water resource as well as the distribution and treatment system. We are committed to ensure the quality of your water.

NOME JOINT UTILITY SYSTEM

John K. Handeland
General Manager

Toby M. Schield
Water & Sewer Superintendent

Certified Water Treatment Operators:

Robert E. Russell, Sr.
Greg Ratzlaff
Jay H. Wieler

Testing Laboratories:

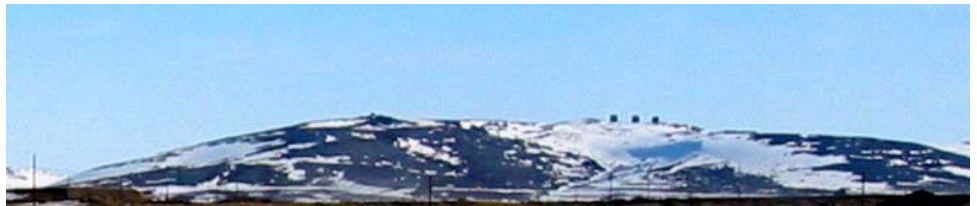
Norton Sound Regional Hospital
Commercial Testing & Engineering
Northern Testing Labs

NOME JOINT UTILITY BOARD:

Berda J. Willson, Chair
Jim West, Jr., Vice Chair
Carl Emmons, Secretary
Fred H. Moody, Member
Ronald Parker, Member

Nome's water is safe. NJUS continues to make system improvements that will insure the water provided will meet or exceed the standards established for water quality.

OUR WATER SOURCE



Nome has one source of water known as Moonlight Springs. Three new artesian wells were drilled to provide water to the community. Our well system is located north of the



Nome-Beltz High School at the base of the southwest face of Anvil Mountain. Our new water source is classified as a ground water source. NJUS has completely disconnected from the infiltration gallery

previously used. The new wells are capable of providing an adequate supply of water to meet Nome's year-round water needs. In 2001 NJUS provided 137 million gallons of potable water to the city of Nome.



WATER TREATMENT

Nome's potable water is chlorinated to kill disease-causing organisms and fluoridated to promote dental health. Inadequately treated water may contain disease causing organisms, which include bacteria, viruses, and parasites, that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Our water treatment facility is located to the west of the Nome-Beltz High School Apartment complex. At this location we monitor, disinfect and fluoridate the water before it is distributed to the high school and the city of Nome.

WATER DISTRIBUTION SYSTEM

In 1997 NJUS began a six-year Utilidor Replacement Project to upgrade our water distribution system. This Project was made possible with funding assistance from the Alaska Department of Environmental Conservation and the U.S. Department of Agriculture Rural Utility Service. The entire walk-through Utilidor system is being replaced with direct-bury water and sewer main. Customer service lines (laterals) are also being replaced. The fire fighting capabilities of the community are also being enhanced with the installation of new fire hydrants. The Project is scheduled for completion during 2002.

Other projects that will expand water and sewer service and fire protection to areas not served by the distribution system are in various stages of design. NJUS has entered in to an agreement with the FAA, which will provide funding to begin installation of the sewer system to the north side of the airport. Partial funding has been secured to begin development of the fire protection and water systems concurrently with the FAA project. Additional funding is being sought which would allow the expansion of the system to the entire airport. The Utility has identified a critical need to replace direct bury water and sewer lines on the east end of town. Investigation of mains in the area, installed in the 1980s, reveals severe degradation as a result of frost heaving or thawing of permafrost.

NJUS remains committed to maintaining and operating our system as efficiently as possible. By implementing tighter monitoring procedures, making timely repairs and installing new energy saving equipment, water usage and electrical costs have been reduced. Further cost reduction improvements are scheduled for 2002. Water usage was reduced by nearly 14 million gallons in 2001 compared to 2000.

WATER TESTING RESULTS

Our state certified water treatment operators routinely monitor for contaminants in your drinking water in accordance with federal and state drinking water regulations. The State of Alaska and Environmental Protection Agency (EPA) limit the amount of certain contaminants in drinking water provided by public water systems in order to ensure that tap water is safe to drink. When appropriate, drinking water quality tests are performed by the certified water treatment plant operators. Most tests are performed by an independent, A.D.E.C. certified laboratory. The drinking water testing results, contained in this report, are gathered from a five-year period of testing.

All drinking water, including bottled water, may be expected to contain at least small amounts of some contaminants. Water is a universal solvent that naturally picks up material as it falls from the sky as rain or snow, and travels over or through the ground. Some of this water ends up as drinking water.

The sources of drinking water (both tap 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. Contaminants that may be present in our source water include:

- A) Microbiological 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 storm 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, storm water runoff, and residential uses.
- D) Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water 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 for contaminants in bottled water which must provide the same protection for public health.

HOW TO READ THE TABLES

This report is based on tests conducted during 1997 through 2002 by NJUS. Terms used in the Water Quality Table and in other parts of this report are defined here.

Maximum Contaminant Level (MCL): 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; **Maximum Contaminant Level Goal (MCLG):** 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; **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow; **NTU**=Nephelometric Turbidity Units; **ppm**=parts per million, or milligrams per liter (mg/L); **ppb**=parts per billion, or micrograms per liter (µg/L); **TT**=Treatment technique: a required process intended to reduce the level of a contaminant in drinking water

Contaminant	Date Tested	Unit	MCL	MCLG Level	Detected	Major Sources	Violation
<u>INFILTRATION GALLERY SOURCE WATER (old source)</u>							
Inorganic							
Lead	8/27/99	ppb	AL=15	0	5.0	Corrosion of household plumbing systems; and lead solder joints	NO
Nitrate-N	8/8/200	ppm	10	10	0.13	Erosion of natural deposits and decaying vegetation or Tundra	NO
Copper	8/27/99	ppm	AL=1.3	1.3	0.248	Corrosion of household plumbing and copper tubing	NO
Fluoride	8/17/01	ppm	4.0	4.0	0.9	Water additive which promotes strong teeth	NO
Volatile Organic Chemicals							
TTHMs	8/8/00	ppb	100	n/a	1.52	By-product of drinking water chlorination	NO
Microbiological Contaminants							
Turbidity	8/8/01	NTU	TT	<1	5	Soil run off	YES
<u>WELL SYSTEM SOURCE WATER (new source)</u>							
Barium	9/12/01	ppm	2.0	0	0.0125	Occurs as a number of compounds in the earth's crust; used in wide variety of industrial applications but is primarily present in water from natural sources*	NO
Thallium	9/22/00	ppb	2.0	0.5	0.793	Widely distributed in trace amounts in the earth's crust**	NO
Copper	8/30/01	ppm	AL=1.3	1.3	0.0018	Corrosion of household plumbing and copper tubing	NO
Fluoride	12/31/01	ppm	4.0	4.0	0.9	Water additive which promotes strong teeth	NO

* Source: Guidelines for Drinking Water Quality, 2nd Ed., Vol 1. Recommendations. Geneva, World Health Organization 1993, pp. 42-43.

** Source: Agency for Toxic Substances and Disease Registry (ATSDR), Toxicology profile for Thallium, Atlanta, GA, U.S. Dept. of Health & Human Services, Public Health Service.

Inorganic Chemicals include heavy metals, fluoride and nitrate. Our water is no longer tested for asbestos since there is no asbestos water pipe in the distribution system. NJUS currently has A.D.E.C. testing waivers for Arsenic, Barium, Cadmium, Chromium, Mercury, Selenium, Antimony, Beryllium, Cyanide, Nickel, and Thallium.

Fluoride occurs naturally in Nome's water at about 0.2 mg/l. Additional fluoride is added to promote dental health. Less than 1 mg/l of Nitrate (as nitrogen) occurs naturally in Nome's water and is not a concern at this low level.

Lead and copper are from the corrosion of copper pipes, fittings, and old lead/tin solder inside houses and service lines. The Lead and Copper rule is based on 90% of the results being less than or equal to the action level which, if exceeded, would require additional water treatment or the addition of corrosion inhibiting chemicals to our water. Nome is currently under a reduced monitoring requirement for lead and copper because historically our test result sites have been 90% less than the maximum contaminant level (MCL). Compliance testing is scheduled once every three years, and was last completed in 1999 with 90% of the samples under the MCL for both lead and copper.

Volatile Organic Chemicals (VOC) are either disinfections residual byproducts such as total Trihalomethane (TTHM) that are formed when naturally occurring organics in the water are chlorinated or from contamination by petroleum and other products. Of the over 80 VOC's tested, TTHMs were the only VOC detected and were at levels much lower than the maximum contaminant level (MCL). They are not considered a health risk at these very low levels.

Synthetic/Other Organic Chemicals include pesticides and herbicides. Nome is a non-agricultural area and these chemicals are not used. As a result A.D.E.C. has granted Nome a testing waiver. This testing waiver saves Nome about \$6,000 annually in laboratory testing fees.

Radioactive Contaminates have never been detected in Nome's water.

EXPLANATION OF VIOLATIONS

Turbidity. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. In June and August of 2001 suspended particles were detected in the raw water above current ADEC 5NTU regulation. These suspended particulates were a result construction activity of the new well system. Through increased disinfection and monitoring procedures, water distributed throughout the system met or exceeded all treatment and disinfection requirements. As of 8/18/01 NJUS converted over to a true ground water source which will eliminate future turbidity events.

In addition, a notice of violation was received for not testing "gross alpha". This was a result of a scheduling problem with ADEC and the re-classification of our water source. Upon notification from ADEC, NJUS collected the required samples on 3/7/02; test results will be included in the 2002 Water Quality Report..

To the best of our ability, we strive to provide good service, protect and preserve public health, public property and the environment by correctly operating and maintaining your water system.



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VULNERABILITY



Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people 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 individuals should seek advice about

drinking water from their health care providers. EPA/CDC guidelines on appropriate methods to lessen the risk of infection by Cryptosporidium are available from the EPA Safe Drinking Water Hotline (800-426-4791).

QUESTIONS?

If you have any questions about this report or are interested in learning more about the drinking water system in Nome, you may contact the Water & Sewer Superintendent – 443-6330 or the Utility Manager’s Office – 443-NJUS. The Utility Board holds regularly scheduled meetings the third Tuesday of each month. The public is invited to direct any concerns not addressed by management to the Board. You may also call the Alaska Department of Environmental Conservation – Drinking Water Division in Fairbanks, AK (907-451-2179).

