

Saginaw Water Treatment Plant



ANNUAL DRINKING WATER QUALITY REPORT for 2002

YOUR DRINKING WATER

This fifth annual Water Quality Report from the City of Saginaw Water Treatment Plant covers testing results for the year 2002. Please read this report thoroughly.

Our goal is to provide a safe and reliable supply of drinking water for all of our consumers. This report affirms that we achieved our goal throughout 2002.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

FRESH WATER SUPPLY

Your drinking water originates from Lake Huron, one of the largest and highest quality sources of fresh water in the world. This raw water is purchased from the Saginaw-Midland Municipal Water Supply Corporation and travels a great distance and receives extensive treatment before it is delivered to your tap.

The raw water is drawn from Lake Huron through two intakes. These intakes are so large that a 5-foot-tall person could stand up inside one! From there, the water travels 65 miles through reinforced concrete pipe to the Saginaw Water Treatment Plant. Treatment processes disinfect and purify the water at the plant before it is distributed to you. After treatment, the water is stored in two reservoirs until it is pumped into the distribution system.

SOURCE WATER ASSESSMENT

The Michigan Department of Environmental Quality (MDEQ) will be completing a source water assessment of our raw water supply by the year 2003. You will be advised on how to obtain a copy of the assessment when it is completed.

CRYPTOSPORIDIUM

In 1998, we participated in a major drinking water quality testing program called the Information Collection Rule (ICR). One of the contaminants we tested for was the parasite *Cryptosporidium*, which has caused intestinal disease in other parts of the country and overseas, but not in the Saginaw service area. It is commonly found in surface water, and is hard to kill. Even the best-managed treatment plants may contain some live parasites. The United States Environmental Protection Agency (EPA) is working to resolve several scientific issues that will allow safety standards to be set for *Cryptosporidium*. Testing performed during 1998 revealed the presence of *Cryptosporidium* in a single sample of our Lake Huron raw water. We have continued to test for *Cryptosporidium* and it was detected in a single Lake Huron raw water sample in 2002. *Cryptosporidium* has never been detected in our finished water, and no drinking water precaution is needed for the general public. If you have special health concerns, please read the paragraph entitled "For People with Special Health Concerns".

Message from
Andre Borrello,
Director
Environmental
Protection and
Water System
Management
Department



Approximately 180,000 people in the greater Saginaw area receive their drinking water from the City of Saginaw's Water Works. We are proud to supply our customers with drinking water that surpasses all State and Federal requirements for quality. This is the result of the dedicated work of our highly trained treatment and distribution specialists, who operate and maintain our facilities and analyze our water daily.

Saginaw's water system has a rich history, dating back to the mid 1920s, and the construction of the Water Works facilities. Water is one of the municipal services that you use every day, and we pledge to work continuously to merit your trust and confidence.

QUALITY WATER, QUALITY STAFF

Highly trained, certified staff work in the Laboratory at the Saginaw Water Treatment Plant. Our qualified staff perform hundreds of tests in our certified laboratory every day. Water samples are taken daily from the Plant at each step in the treatment process to ensure high-quality drinking water. Samples are also obtained weekly from various locations throughout the distribution system.

Water samples are subjected to a battery of chemical and microbiological tests, including pH, alkalinity, color, chloride, iron, coliform bacteria, metals and volatile organics. Many of these tests are required by law, but the Saginaw Water Treatment Plant also performs additional tests to provide greater water quality assurance. Annually, close to 100,000 analyses are performed on the water.

Plant Operations staff work around the clock to ensure that the water you drink meets or surpasses all Federal and State standards for quality and safety. These individuals operate the system using computerized control systems and by performing hands-on techniques. Our operations and maintenance staff maintain the equipment, which allows the plant to perform more efficiently and reliably. Routine maintenance also prolongs the life of our equipment, which helps to keep our customers' water rates as low as possible. These workers provide fresh tap water to nearly 180,000 people every day.

WATER SYSTEM IMPROVEMENTS

The following water system improvements were made during 2002:

- i The height of the riser curbing on the filters was raised to allow the plant's capacity to be restored to 52 million gallons per day. (Capacity had been downgraded as a result of the December 2001 Sanitary Survey.) This will allow the City to continue to better meet peak flow demands during the hot summer months.
- i An interior office space and the Operations Laboratory remodeling project was completed. This project also included architectural restoration of the plaster detail in the pump room (see photos, right).
- i Roofing replacement on various plant buildings.
- i Pumping station improvements included new surge relief valves and refurbishing of an automatic transfer switch at the Gratiot Road Station, and a Variable Frequency Drive at the Aqua Station.

*Please Clip and Save
this Important Information*

CUSTOMER SERVICE

The Saginaw Water Treatment Plant is a not-for-profit department of the City of Saginaw and is governed by Saginaw City Council. We encourage your interest in the decisions pertaining to our drinking water. City Council meets biweekly on Mondays. For information about meetings and how to register as a speaker, contact the City Clerk's office at 989.759.1480. Here are some other helpful contacts:

Wilmer Jones Ham, Mayor
Joyce Seals, Mayor Pro Tem
Dennis D. Browning, Council Member
Charles Coleman, Council Member
Carol Cottrell, Council Member

Andrew J. Coulouris, Council Member
Willie Haynes, Council Member
Daniel Soza, Council Member
Roma A. Thurin, Council Member
Deborah Kimble, City Manager

Water Quality Questions/Concerns: 989.759.1640

Water Billing Questions: 989.759.1450

To Report Water Main Breaks: 989.759.1612

24-hour Water Emergency Services: 989.759.1641

On-line Water Quality Report: www.ttmps.com/saginaw2002.pdf

Additional Copies of this Report: 989.759.1640

U.S. Environmental Protection Agency's Safe Drinking Water Hotline: 800.426.4791

- i The City applied for and received a \$115,000 EPA grant to complete a Vulnerability Assessment. The work will be completed in 2003, and includes a study, training on vulnerability assessment methodology, and updating the plant's Emergency Response Plan (ERP).



Before and after plaster restoration photos

DEDICATED TO CLEAN WATER



FOR PEOPLE WITH SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those undergoing chemotherapy, who have undergone organ transplants, with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

Federal guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the United States Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800.426.4791.

Nearly 100,000 tests are performed each year before, during, and after treatment to provide City of Saginaw customers with safe drinking water



Maximum Residual Disinfectant Level Goal (MRDLG) - The level of 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.

Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Parts per million (ppm) and parts per billion (ppb) - One ppm can be equated to 4 teaspoons of salt in a standard 24-foot backyard pool. One ppb is 1 teaspoon of salt in an Olympic-sized pool.

Maximum Contaminant Level Goal (MCLG) - The 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.

Maximum Contaminant Level (MCL) - The 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. MCLs are set at very stringent levels by the State and Federal government.

Nephelometric Turbidity Unit (ntu) - Measures drinking water clarity (the cloudiness of water).

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

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

nd - not detected.

na - not applicable/available.

HEALTH and SAFETY INFORMATION

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline, 800.426.4791. The sources of both tap and bottled drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials, and can also pick up substances resulting from animal or human activity.

Contaminants 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; **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; **Pesticides and herbicides**, which may come from a variety of sources such as agriculture and residential uses; **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, septic systems, and agricultural and urban runoff; **Radioactive contaminants**, which are naturally occurring or the result of oil and gas production, or mining activities.

To ensure that tap water is safe, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water, which must provide the same protection for public health.

TERMINOLOGY

The table below shows the results of our water quality tests for 2002, unless otherwise noted. We met all the monitoring and reporting requirements for 2002, and had no violations. Our water met or surpassed all State and Federal water quality and safety standards. The State allows us to monitor for certain contaminants less than once per year because their concentrations are not expected to change year to year. Please read the terminology column first; it will help you to interpret the data. This table does not show the hundreds of contaminants we tested for, but did not detect in the water.

2002 WATER QUALITY RESULTS

| parameter | test date | unit | avg | range | MRDLG | MRDL | violation? | likely sources |
|--|-----------|-------------------|-------|-------------|-------|-------------------|------------|--|
| Regulated Inorganic Parameters (sampled in the distribution system) | | | | | | | | |
| Chlorine | 2002 | ppm | 0.76 | 0.21 - 1.20 | 4 | 4 | no | Water additive to control microbial contaminants |
| parameter | test date | unit | avg | range | MCLG | MCL | violation? | likely sources |
| Regulated Inorganic Parameters (sampled at the plant's finished water tap) | | | | | | | | |
| Fluoride | 2002 | ppm | 0.98 | 0.1 - 1.3 | 4 | 4 | no | Water additive to promote strong teeth |
| Barium | 1995 | ppm | 0.03 | na | 2 | 2 | no | Erosion of natural deposits |
| Volatile Organic Parameters (sampled in the distribution system) | | | | | | | | |
| TTHM ¹ | 2002 | ppb | 51.0 | 15.0 - 75.0 | none | 80 | no | Byproducts of drinking water disinfection |
| HAA5 ¹ | 2002 | ppb | 35 | 11 - 52 | none | 60 | no | Byproducts of drinking water disinfection |
| Volatile Organic Parameters (sampled at the plant's finished water tap) | | | | | | | | |
| Toluene | 2002 | ppm | .0013 | na | 1 | 1 | no | Discharge from petroleum factories |
| Dichloromethane | 2002 | ppb | < 0.6 | na | 0 | 5 | no | Discharge from drug/chemical factories |
| Regulated Microbiological Parameters (sampled in the filtered water) | | | | | | | | |
| Turbidity ² | 2002 | ntu | 0.05 | 0.02 - 0.11 | none | TT | no | Soil runoff, suspended matter in lake water |
| Total Coliform ³ | 2002 | note ³ | 0.46% | 0 - 0.46% | 0 | note ³ | no | Naturally present in the environment |
| Fecal Coliform ⁴ | 2002 | note ⁴ | 1 | 0 - 1 | 0 | note ⁴ | no | Human and animal fecal waste |
| Lead and Copper Monitoring (sampled in the distribution system at individual taps) | | | | | | | | |
| parameter | test date | unit | 90th | range | MCLG | MCL | violation? | likely sources |
| Copper ⁵ | 2001 | ppm | 0.15 | nd - 0.23 | 1.3 | AL=1.3 | no | Corrosion of household plumbing systems; |
| Lead ⁵ | 2001 | ppb | 7 | nd - 10 | 0 | AL=15 | no | and/or erosion of natural deposits |
| Unregulated Parameters (not regulated at the State or Federal Level, but monitored to determine the need for future regulation) | | | | | | | | |
| parameter | test date | unit | avg | range | MCLG | MCL | violation? | likely sources |
| Sodium | 2002 | ppm | 5 | na | none | none | no | Naturally occurring |
| Bromochloroacetic Acid | 2002 | ppb | 4 | 3 - 5 | none | none | no | Byproduct of drinking water disinfection |
| 1998 Information Collection Rule (ICR) Findings (average of plant tap and distribution system samples)⁶ | | | | | | | | |
| HAN (Haloacetonitriles) | 1998 | ppb | 3.3 | 2.5 - 4.2 | none | none | no | Byproduct of drinking water disinfection |
| CH (Chloral Hydrate) | 1998 | ppb | 6.7 | 2.0 - 15.0 | none | none | no | Byproduct of drinking water disinfection |
| TOX (Total Organic Halide) | 1998 | ppb | 113.7 | nd - 165.0 | none | none | no | Byproduct of drinking water disinfection |

1. Averages shown for TTHMs (Total Trihalomethanes) and HAA5s (Haloacetic Acids) are the highest running annual average calculated quarterly.
2. Turbidity measures the cloudiness of water. As of January 1, 2002, turbidity in systems that provide filtration, like Saginaw, must never exceed 1 NTU, and must not exceed 0.3 NTU in more than 95% of daily samples in any month. All of our samples were below 0.3.
3. The MCL, or highest level allowed, for Total Coliform Bacteria is 5.0% of the total monthly samples collected. The highest detection level of this contaminant during 2002 was 0.46% of the total monthly samples collected, and is below the MCL for this contaminant.
4. The MCL, or highest level allowed, for Fecal Coliform Bacteria is a routine sample and a repeat sample which are total coliform positive, and one which is also fecal coliform or E. coli positive. During 2002, the highest detection level of this contaminant was 1 of the total monthly samples collected, which is below the MCL for this contaminant. In February of 2002, one sample was positive for fecal coliform bacteria. A repeat sample from that site as well as samples from upstream and downstream locations were negative for the presence of total or fecal coliform bacteria.
5. All of our lead and copper samples were below the Action Levels.
6. On June 18, 1996, EPA passed the Information Collection Rule, which required certain water utilities to perform special monitoring and data reporting. The information will help EPA determine whether revisions need to be made to EPA's drinking water filtration and disinfection rule and to determine the need for new regulations.

Saginaw Water Treatment Plant
522 Ezra Rust Drive
Saginaw, MI 48601

PRSR STD
US POSTAGE
PAID
SAGINAW, MI
PERMIT NO. 98



ECRWSS
POSTAL CUSTOMER

**IMPORTANT INFORMATION ENCLOSED:
2002 WATER QUALITY REPORT**