2014 | Saginaw Region
WATER QUALITY REPORT

Albee Township
Village of Birch Run
Birch Run Township
Blumfield Reese Water Authority
Bridgeport Charter Township
Buena Vista Charter Township
Carrollton Township
Frankenlust Township
James Township
Kochville Township

Saginaw Charter Township
City of Saginaw
Village of St. Charles
Spaulding Township
Swan Creek Township
Taymouth Township
Thomas Township
Tittabawassee Township
City of Zilwaukee

Your Most Important *Resource* ...

The mission of all dedicated water utility professionals is to provide safe, reliable drinking water to their customers. Locally, these individuals work to deliver public health, fire protection, and quality of life on tap to over 170,000 people in the Saginaw region. Please take a moment to read the important information we are presenting in this annual report. ***El informe contiene informacion importate sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entienda bien.***

State Certified Operators and Round-the-Clock Monitoring. Highly-trained, certified staff work in the laboratories at the Saginaw Water Treatment Plant, performing hundreds of tests each day. Water samples are taken daily from each step in the treatment process to ensure high-quality drinking water that meets or surpasses all federal and state requirements. Samples are also obtained throughout the region's distribution system on a weekly basis.

Extensive Testing. Water samples are subjected to a battery of chemical and microbiological tests, such as pH, alkalinity, color, chloride, coliform bacteria, iron, metals, and volatile organics. Many of these tests are required by law, but the Saginaw Water Treatment Plant also performs additional tests, beyond what is required, to provide even greater water quality assurance.

Well Operated and Maintained Treatment Plant. Operations and maintenance workers at the plant and in each community operate the system both manually and with computerized control systems. They also maintain the equipment and facilities, which allows for greater efficiency and reliability. **This routine maintenance prolongs the life of our water system.** We take pride in our work and we are committed to providing our customers with high-quality water at the lowest reasonable cost.

Backup Systems for Added Reliability. The treatment plant and distribution system include backup equipment for key systems to increase reliability during emergencies, high-water-use days, and during maintenance or interruptions.

Local Distribution. Each community that obtains its drinking water from the Saginaw Water Treatment Plant takes responsibility for maintaining its own distribution system. This includes repairing water main breaks, collecting certain water samples, and routinely flushing water mains to keep them clean. If you have questions or comments about your community's distribution system, please see the back of this report for contact and meeting information.

Water Quality | Health and Safety

Information About All Sources of Drinking Water

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 the *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 land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive materials. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- *Microbial contaminants, such as viruses and bacteria, which may come from sewage systems, septic systems, agricultural livestock operations, and wildlife*
- *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*
- *Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, 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, urban stormwater runoff, and septic systems*
- *Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities*

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. The Food and Drug Administration's regulations establish limits for contaminants in bottled water, which must provide similar protection for public health.

Drinking Water Regulations in the News

Drinking Water Protection Act Bill Passes House

In February 2015, the U.S. House passed this bill to amend the Safe Drinking Water Act by a vote of 357 to 37. When approved by the Senate, the US EPA will be tasked with developing a plan to assess and manage risks that arise when naturally-occuring cyanobacteria produce a liver-damaging toxin called cyanotoxin. In August of 2014, algal contamination became headline news when the City of Toledo, Ohio, had to ban the use of drinking water for almost three days.
www2.epa.gov/water-research/harmful-algal-blooms-cyanobacteria

Microbial and Disinfection Byproducts Update

This set of interrelated regulations balance the risks from microbial pathogens and the disinfectants (and resulting byproducts) that control them. Monitoring by all communities under the **Stage 2 Disinfection Byproducts Rule (Stage 2 DBP)** continued in 2014; see Community-Specific Test Results.
water.epa.gov/lawsregs/rulesregs/sdwa/mdbp/

Also, futher monitoring of source water paired with E. coli analysis will begin in October 2015 under the **Long Term 2 Enhanced Surface Water Treatment Rule (LT2)**.
water.epa.gov/lawsregs/rulesregs/sdwa/lt2/

Some people may be more vulnerable to contaminants in drinking water than the general population.

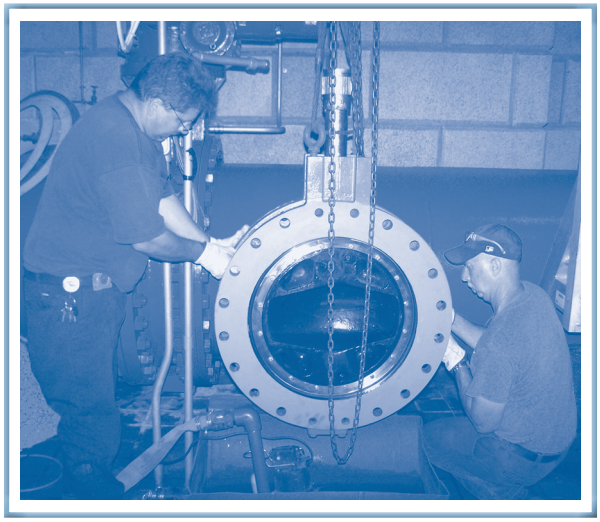
Immuno-compromised persons such as those undergoing chemotherapy, those who have undergone organ transplants,those with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water sources from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

Cryptosporidium, Giardia, and other microbial pathogens come from human and animal waste. They are sometimes found in untreated surface waters (lakes, rivers, streams) and, if ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. Although filtration removes these pathogens, the most commonly-used methods may not guarantee 100% elimination. Illness from microbial pathogens can also be spread through other means.

The Saginaw Water Treatment Plant's monitoring for Crytosporidium and Giardia has indicated the presence of these organisms in the untreated source water, but NEVER in our finished drinking water. In fact, our monitoring results place our water into the lowest and best category of the LT2 rule (details to the left), meaning we do not need to add costly treatment measures.

Federal guidelines on appropriate means to lessen the risk of infection by Crytosporidium, Giardia, and other microbiological pathogens are available from the Safe Drinking Water Hotline at 800.426.4791.

2014 Water System Projects



High Service Pumping System Repairs

Water utility projects are completed throughout the regional distribution system. Customers outside of the City of Saginaw can learn more by contacting their local water provider (see back page).

Water Treatment Division

- South clarifier baffle repair
- Washington discharge line leak repair
- Multiple pumping station check valve improvements
- Raw water system monitoring improvements
- Treatment floor electrical panel retrofit
- Filter equipment inspections and maintenance
- Backup power improvements for booster stations

Maintenance and Service Division

- Automated Meter Reading project: 8,945 radios installed as of March 2015
- 45 wholesale and commercial customer meters replaced
- 700 high and low hazard cross connection inspections, including courtesy installation of 120 hose bib vacuum breakers to help prevent backflow
- Remington St. water main and storm sewer (catch basin) replacement from N. Michigan Ave. to N. Mason St.
- E. Genesee Ave. water main replacement from Harold St. to Hess Ave.

Source Water Assessment

The raw water intake is near Whitestone Point. The location was selected in the 1940s after an engineering study showed that water at this location was typical of deep Lake Huron currents and relatively free from influences from Saginaw Bay and nearby on-shore sources of contamination. Raw water is purchased from the Saginaw-Midland Municipal Water Supply Corporation (jointly owned by the Cities of Saginaw and Midland) and travels 65 miles to the Saginaw Water Treatment Plant for processing.

In June 2004, the Michigan Department of Environmental Quality completed its assessment of our Lake Huron raw water supply and issued a Source Water Assessment report. This determined our raw water supply's susceptibility to contamination. The State used a seven-tiered rating scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources.

The susceptibility of our raw water was rated "moderately low." Although the threat of contamination still exists, **this rating is the best a surface water source can achieve.** The forethought used by our predecessors to select the location of the intake is to be commended.

If you would like to review a copy of the Source Water Assessment report, or have questions about it, please contact the Saginaw Water Treatment Plant at 989.759.1640.

The Saginaw Region enjoys drinking water sourced from Lake Huron, the third-largest fresh water lake on Earth

Regional Water Quality Test Results for 2014

This table shows the results of water quality tests in the Saginaw Water Treatment System during 2014, unless otherwise noted. 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. **The Saginaw Water Treatment Plant remained in compliance with all monitoring and reporting requirements, and had no violations.** Our water met or surpassed all state and federal water quality and safety standards.

parameter	test date	unit	avg	range	MRDL	MRDLG	violation	likely sources
Regulated Inorganic Parameters (sampled in the greater distribution system)								
Chlorine	2014	ppm	0.85	0.66-0.97	4	4	no	Water additive used to control microbials
parameter	**test date**	**unit**	**avg**	**range**	**MCL**	**MCLG**	**violation**	**likely sources**
Regulated Inorganic Parameters (sampled at the plant's finished water tap)								
Fluoride[1]	2014	ppm	0.93	na	4	4	no	Water additive to promote strong teeth
Barium	2014	ppm	0.28	na	2	2	no	Erosion of natural deposits
Regulated Radiological Parameters (sampled at the plant's finished water tap)								
Combined radium	2011	pCi/l	0.45	na	5	0	no	Erosion of natural deposits
Regulated Microbiological Parameters (sampled in the filtered water confluence)								
Turbidity[2]	2014	NTU	0.05	0.03-0.09	TT[3]	none	no	Soil runoff, suspended matter in lake water

1. The Saginaw Water Treatment Plant monitors and supplements the fluoride level in drinking water to maintain a level close to 1 ppm to promote dental health. This fits with EPA's secondary fluoride standard of 2 ppm to prevent dental disease in children. The level reported in the table is from the annual regulatory sample, but staff members also conduct daily sampling. Daily fluoride sampling results in 2014 were: average=0.94 ppm; range=0.27-1.12 ppm.
2. Turbidity measures the cloudiness of water. 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. One-hundred percent of our samples in 2014 met these requirements. This indicates that our treatment process is working effectively.

PARAMETERS FOUND IN OUR DRINKING WATER IN 2014, BUT **NOT REGULATED AT THE STATE OR FEDERAL LEVEL:**

parameter	unit	avg	range	MCL	MCLG	violation	likely sources
Sodium[1]	ppm	6	na	none	none	no	Naturally occurring
Bromochloroacetic Acid	ppb	3	1 - 5	none	none	no	Byproduct of drinking water disinfection
UCMR parameters[2]	**unit**	**avg**	**range**	**MCL**	**MCLG**	**violation**	**likely sources**
Total Chromium[3]	ppb	.29	.27 - .46	100	100	no	Discharge from steel and pulp mills; erosion of natural deposits
Hexavalent Chromium[3]	ppb	.21	.20 - .22	none	none	no	"
Molybdenum	ppb	.73	.72 - .74	none	none	no	Discharge from steel mills; erosion of natural deposits
Strontium	ppb	105	104 - 106	none	none	no	Fertilizer runoff; erosion of natural deposits
Chlorate	ppb	59.8	37.8 - 82.1	none	none	no	Byproduct of drinking water disinfection

1. This information is provided for those concerned with sodium in their diet; 6 ppm equals 1.42 mg of sodium per 8 oz. glass of water.
2. The 1996 amendments to the Safe Drinking Water Act require that once every five years, the US EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The Unregulated Contaminant Monitoring Rule (UCMR) provides EPA and other interested parties with scientifically valid data on the occurrence of contaminants in drinking water. These data serve as a primary source of occurrence and exposure information that the agency uses to develop regulatory decisions. In 2014, only five UCMR parameters were detected above the minimum reporting level in the City of Saginaw's system. Saginaw Charter Township and Thomas Township also participated in UCMR testing in 2014. Saginaw Charter Township detections included: Chromium nd - .26; Hexavalent Chromium .17 - .21; Strontium 100; and Chlorate 30 - 78. Thomas Township detections included: Chromium .30 - .40; Hexavalent Chromium .23 - .24; Strontium 99 - 100; and Chlorate 100 - 110.
3. Chromium and hexavalent chromium are currently regulated together under the category "Total Chromium," with an MCL and MCLG of 100 ppb. The results shown here are for investigative purposes and are not subject to MCL compliance. New health effects information has become available since the original standard was set, and EPA is reviewing this information to determine whether there are new health risks that need to be addressed. Additional information can be found at *water.epa.gov/drink/info/chromium/index.cfm*

Terminology

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 four teaspoons of salt in a standard 24-foot backyard pool. One ppb is like one 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 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 clarity (cloudiness of water).

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

Community-Specific | *Test Results*

Certain tests must be performed in each individual water distribution system. Results follow:

Bacteriological Testing

In 2014, there was one positive bacteriological sample in the greater distribution system. Immediate retesting results were negative for total coliform bacteria, so there was no violation.

Lead and Copper Testing

For lead and copper, all communities in the Saginaw system participate in a coordinated test, which is only required every three years because of favorable past results. The values reported in the table below are from the 2013 coordinated test. While one of the testing sites in the regional service area had a single detect above the Action Level (AL) for lead, this is not a violation. Lead and copper compliance is based on the 90th percentile, where nine out of ten samples must be below the AL. This is the value reported in the table, below. No sites exceeded the AL for copper. Likely sources of copper and lead are corrosion of household plumbing and erosion of natural deposits (not naturally present in our water).

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. Your water utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 at water.epa.gov/drink/info/lead/ or the Safe Drinking Water Hotline at 800.426.4791.

Lead: AL = 15 ppb Lead MCLG = 0 Copper: AL = 1.3 ppm MCLG = 1.3 ppm	Albee Twp	Village of Birch Run	Birch Run Twp	Blumfield/Reese	Bridgeport Twp	Buena Vista Twp	Carrollton Twp	Frankenlust Twp	James Twp	Kochville Twp	City of Saginaw	Saginaw Twp	Village of St. Charles	Spaulding Twp	Swan Creek Twp	Taymouth Twp	Thomas Twp	Tittabawassee Twp	City of Zilwaukee
LEAD (ppb)	0	1.5	6.5	0	0	0	0	2.5	0	0	8	2.4	4.5	6.5	0	0	2	0	0
Sites exceeding AL?	no	no	no	no	1	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
COPPER (ppm)	.355	.173	.302	.223	.276	.199	.184	.256	.198	.235	.188	.233	.241	.226	.267	.271	.48	.227	.188
Sites exceeding AL?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no

Stage 2 DBP

The results shown for TTHM (Total Trihalomethanes) and HAA5 (Haloacetic Acids) are the highest locational running annual averages (LRAAs) calculated quarterly by individual community. The range of detections shows the highest and lowest single detects from quarterly compliance monitoring. These single detections are not subject to MCL compliance or violations. All communities performed the required monitoring during 2014, and there were no MCL violations. Both TTHM and HAA5 are byproducts of drinking water chlorination.

TTHM MCL = 80 ppb MCLG = none HAA5: MCL = 60 ppb MCLG = none	Albee Twp	Village of Birch Run	Birch Run Twp	Blumfield/Reese	Bridgeport Twp	Buena Vista Twp	Carrollton Twp	Frankenlust Twp	James Twp	Kochville Twp	City of Saginaw	Saginaw Twp	Village of St. Charles	Spaulding Twp	Swan Creek Twp	Taymouth Twp	Thomas Twp	Tittabawassee Twp	City of Zilwaukee
TTHM (ppb)	51	56	63	69	66	78	40	49	52	70	66	67	52	40	55	61	60	75	54
Low	38.8	24	37.4	41	43.2	26.1	20	28	29.4	34	21	31.1	35.2	22.5	26.7	34.6	23.2	31	32.9
High	65.7	71.8	84.4	80	83.5	89.2	56.6	69.2	60.3	92	74.6	63.9	72.7	59.5	61.7	84.8	63.6	86	63.7
Monitoring Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
MCL Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
HAA5 (ppb)	24	29	45	26	31	37	21	29	27	33	28	39	24	22	25	25	38	23	26
Low	16	12	19	14	14	12	9	16	12	12	10	34	15	12	11	17	11	12	12
High	28	37	34	34	25	37	27	39	29	29	30	1.8	28	36	35	31	32	32	33
Monitoring Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
MCL Violation?	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no

Over 90 contaminants were tested for, but not detected, in our drinking water in 2014.

For More Information

Water Quality Questions/Saginaw Water Treatment Plant: 989.759.1640

USEPA Safe Drinking Water Hotline: 800.426.4791

Electronic Water Quality Report: www.saginaw-mi.com/ccr.php

Local Contacts:

The list below shows meeting times for the communities participating in this report. Please attend meetings locally and with the City of Saginaw if you would like to comment on the decisions affecting your drinking water. If you have questions about this report or local water projects, please call the number provided under "Water Utility Contact."

Water Supplier	Meeting Schedule/Time/Location	Water Utility Contact
Albee Township	Second Tuesday, 7:00 pm, 10645 East Road	Mark Jebb, 989.770.4844
Birch Run Township	Second Tuesday, 7:00 pm, 8411 Main Street	Brad Thomas, 989.624.9773
Village of Birch Run	Fourth Monday, 7:00 pm, 12060 Heath Street	Terry Engelhardt, 989.624.9856
Blumfield/Reese	Third Monday, 7:30 pm, 12810 E. Washington, Reese	Ron Ebenhoeh, 989.868.9940
Bridgeport Township	First Tuesday, 6:00 pm, 6206 Dixie Highway	Ruthann Evans, 989.777.0974
Buena Vista Township	Fourth Monday, 7:00 pm, 1160 S. Outer Drive	Roy Hill, 989.754.6536
Carrollton Township	Second & last Monday, 5:30 pm, 1645 Mapleridge Road	Mark Pilkington, 989.754.4611 x110
Frankenlust Township	Varies, please call 989.684.3883, 3933 Patterson Road	Charles Suchodolski, 989.684.3883
James Township	Second Monday, 7:30 pm, 6060 Swan Creek Road	Mark Jebb, 989.781.1353
Kochville Township	Fourth Tuesday, 7:30 pm, 5851 Mackinaw Road	Mike Comstock 989.792.7596 x115
Saginaw Township	Second & Fourth Mondays, 7:00 pm, 4980 Shattuck Road	Sonny Grunwell, 989.791.9870
Village of St. Charles	Second Wednesday, 7:00 pm, 110 W. Spruce Street	Hal Mead, 989.865.8287
Spaulding Township	Third Tuesday, 7:00 pm, 5025 East Road	Don Ackerman, 989.777.2733
Swan Creek Township	Second Monday, 4:00 pm, 11415 Lakefield Road	Debra Wurtzel, 989.865.6251
Taymouth Township	Second Wednesday, 7:00 pm, 4343 Birch Run Road	A.J. Nowak, 989.624.4159 x24
Thomas Township	First Monday, 7:00 pm, 8215 Shields Drive	Rick Hopper, 989.781.0150
Tittabawassee Township	Second Tuesday, 7:30 pm, 145 S. Second Street	Ed Mahaney, 989.695.6517
City of Zilwaukee	Last Monday, 3:30 pm, 319 Tittabawassee Road	Eric Mahan, 989.737.0369

Water Treatment Contacts:

You receive your water from the Saginaw Water Treatment Plant, which is a not-for-profit division of the City of Saginaw, governed by Saginaw City Council. We encourage your interest in the decisions pertaining to your drinking water. Meetings are held on Mondays, twice monthly. For details or to register as a speaker, please contact the City Clerk's office at 989.759.1480.

Dennis Browning, Mayor
Amos O'Neal, Mayor Pro Tem
Michael D. Balls, Council Member
Annie Boensch, Council Member
Larry Coulouris, Council Member
Dan Fitzpatrick, Council Member
Floyd Kloc, Council Member
Brenda F. Moore, Council Member
Demond Tibbs, Council Member

Tim Morales, City Manager

Kimberly Mason, Director of Water and Wastewater Treatment Services
Paul Reinsch, Superintendent of Water Treatment and Field Operations