2024 Water Quality & Consumer Confidence Report

Welcome

As our customers, we are committed to providing you the highest quality of drinking water. This report covers the drinking water quality for The Charter Township of Independence for the 2024 calendar year.

As new safety challenges emerge for drinking water, we remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of all our water customers.

DEPARTMENT OF PUBLIC WORKS

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Office hours

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Preliminary Distribution System Materials Inventory is Complete

The Michigan Safe Drinking Water Act, 1976 PA 399, as amended, requires that water supplies develop and maintain a Complete Distribution System Materials Inventory (CDSMI). Last year, the Township completed its CDSMI, in collaboration with Pipeline Management and DLZ consultants. Water service line tap cards were reviewed, followed by physical in-home and exterior inspections and excavations at randomly selected residences, as required by EGLE and the Safe Drinking Water Act.

All tap cards have been updated to include material information. Verification of all new or repaired service lines will be completed per EGLE guidelines.

For questions pertaining to our inventory and findings, please contact the Public Works Department at: (248) 625-8222.

Where Does Our Water Come From?

Did You Know
The Township has

- 10 water treatment plants
- 137 miles of water main
- 2 million gallons of water storage

The water from your tap is pumped directly from one of sixteen wells in ten wellfields. The attached map on the following page shows how the water system is divided into three service areas: Main Loop, Deerwood and Hillview Estates. The area south of I-75 is designated as Independence Township's Main Loop Service Area. The majority of customers served by the Township's water system are connected to the Main Loop. This area is served primarily by nine wells located within six wellfields, Clarkston Gardens (offline), Chestnut Hills (offline), Lake Oakland Woods, Bay Court, Waldon Creek and Pelton Heights. Deerwood Service Area is served by four wells within three wellfields; (Deerwood II and III (Manors) and Deer Valley I and II). All three well sites have Iron/Arsenic removal with disinfection. Hillview Estates Service Area, located in the northeast corner of the Township, is served by three wells in the Hillview Estates wellfield. Disinfection has been added to this well site.

Wellhead Protection

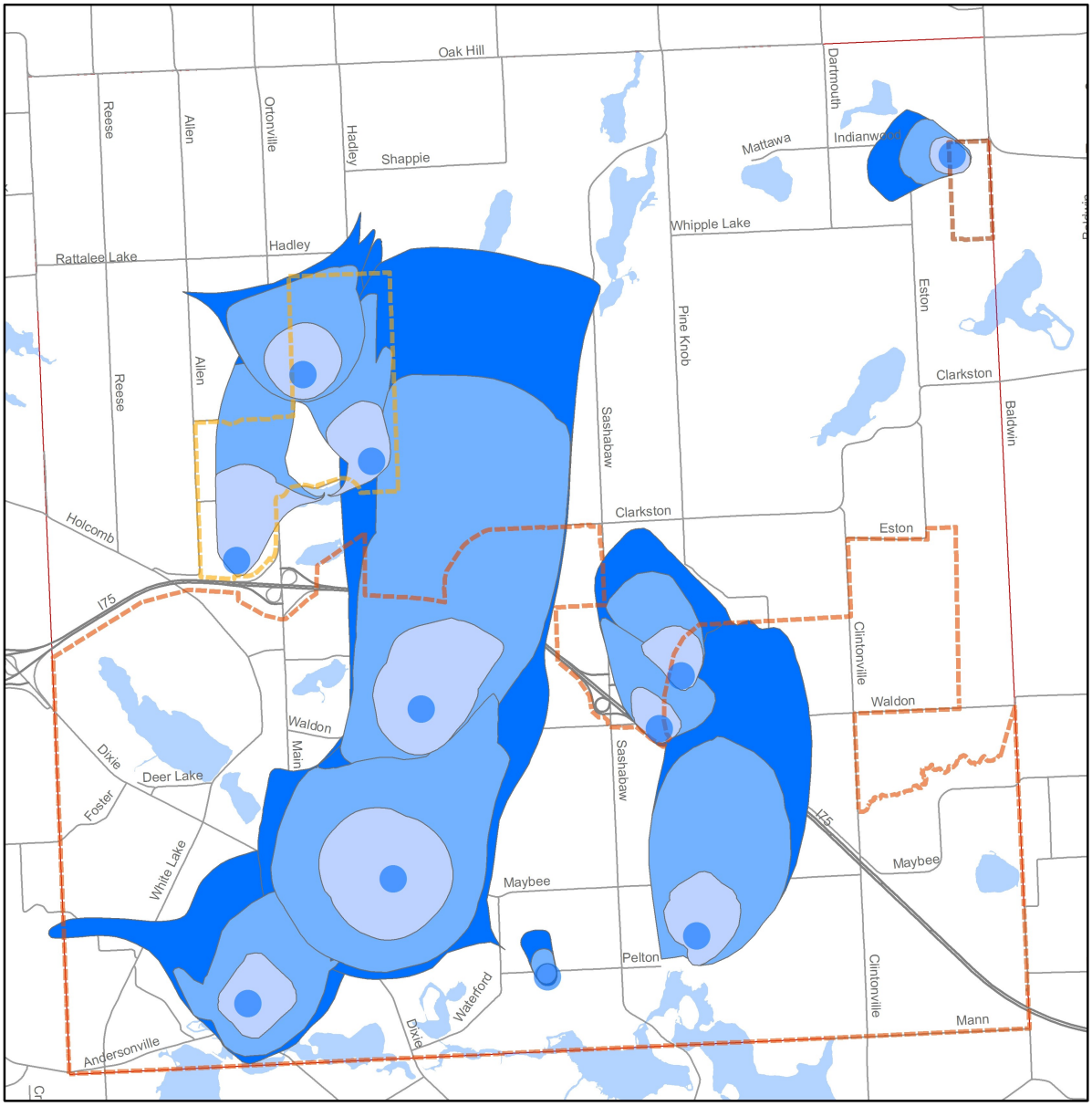
The purpose of the Wellhead Protection Program is to identify the Wellhead Protection Areas (WHPA), which are the surface and subsurface areas that contribute groundwater to the municipal supply wells typically over the next ten years. This program assists local communities utilizing groundwater for their municipal drinking water supply systems in protecting their water source.

Currently we have eleven approved municipal wellfields within Independence Township. Check the map on the following page to see if you live in a WHPA. If you live in or around a WHPA or any other wellfield, the use of certain household hazardous chemicals (paint, solvents, gasoline, etc.) should be closely monitored to eliminate groundwater contamination. You can help protect our water supply by using chemicals carefully. For more information about this program call the DPW 248-625-8222 or visit www.michigan.gov/egle.

Remember!

Prevention of groundwater contamination is far less expensive than groundwater clean-up!

WELL SERVICE AREAS AND WELLHEAD PROTECTION



0 0.5 1 2 Miles

Legend

- WHPA Wellfields
- Roads
- Lakes
- Township

Well Service Areas

- Deerwood
- Hillview
- Main Loop

Capture Zones

- 1 Year
- 5 Year
- 10 Year

Awards & Recognitions

Independence Township DPW Garners Source Water Protection Program Award

The Independence Township Department of Public Works (DPW) garnered a $10,000 Source Water Protection Program Grant from the Michigan Department of Environment, Great Lakes, and Energy (EGLE). This grant will allow the Township to purchase more wellhead protection materials and develop additional public service announcements relating to source water protection.

Over the last several years, Independence Township has been very proactive in our approach to helping to protect our groundwater resources and engaging the community through our 'Water Is Worth It' video series, brochure development, and wellhead protection exhibits at community events.

We are honored to have received this grant and are proud to serve the residents of Independence Township.

Please take time and visit the Independence Township YouTube page to view any of our many videos:

www.youtube.com/user/IndependenceTV1/videos

Independence Township DPW Offers FREE Water Plant Tours

Did you know that the Independence Township Department of Public Works (DPW) offers FREE guided tours at our Water Treatment Plants for Boys and Girl Scouts, class field trips, and other organizations that are interested in learning more about our drinking water supply and treatment system?

One hundred (100) percent of the Township's drinking water comes from groundwater sources, where we pump from ten (10) wellfields throughout the Township.

Independence Township is committed to provide high quality drinking water to our residents and to promote awareness throughout our community.

Come see what its all about!

$5.4M DWSRF PFAS MITIGATION/ WATER MAIN PROJECT COMPLETE

In 2023, Independence Township was awarded $5.4 million in funding from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) through the Drinking Water State Revolving Fund (DWSRF) to install approximately 6,800 linear feet of water main. This project is now complete, providing safe, reliable drinking water to residents that may be impacted by PFAS contamination. Residents have up to 1 year to connect to the new water main, after it is placed in service.

The DWSRF program is a low-interest loan financing program that assists communities with drinking water infrastructure improvements.

The project resulted in over 2.5 miles of new water main along Parview, Park Lake Drive, Washington Street, East Church Street, Eastlawn Avenue, Roselawn Avenue, and Cherrylawn Avenue.

In addition, the Township was awarded $100,000 from Oakland County to conduct private well sampling for PFAS. Forty-seven (47) private wells have been sampled and re-sampling of these wells were completed in Fall 2024. Results identified no PFAS levels above state criteria at any of these 47 sites.

Protecting Our Water Resources

Over the last decade we have become more aware of our world, the environment and our impact on it. Even small changes in our everyday activities will help ensure that we are doing our part to conserve our beautiful Township and the resources we all enjoy.

Practice Good Car Care

Did you know there are over 4 million vehicles in Southeast Michigan? So, practicing good car care means you are helping protect our lakes and streams. How does caring for your car affect our lakes and streams? Storm drains found in our streets and roadside ditches lead to our lakes and streams. So, if dirty water from washing our cars washes into the storm drain, it pollutes our local waterways. Likewise, if your vehicle leaks motor fluids on the street or driveway, that too, can wash into the storm drain and pollute our local waterways.

Here are some simple steps you can take to care for your car and help keep our water clean. Give them a try. A few simple changes can make a big difference!

Make a date. Car-wash facilities treat their dirty water before discharging it to our lakes and streams. So, make a date to take your car to a car wash.

Wash it - on the grass. If you wash your car at home, consider washing it on the lawn. If you can't use the lawn, try to direct the dirty water towards the lawn and away from the storm drain.

Minimize it. Reduce the amount of soap you use or wash your car with biodegradable soap.

Maintain it. Keep your vehicle properly tuned and use the owner's manual to guide decisions about how often it is necessary to change fluids such as oil and antifreeze.

Do it under cover. Whenever possible, perform vehicle maintenance in a well-ventilated, but covered location (e.g., garage). This minimizes the potential for rainfall to wash those inevitable spills and drips into our lakes and streams.

Coal Tar Sealant: Harmful to the Environment & Human Health

What is coal tar sealant? Coal tar sealant is a substance that is applied to asphalt to seal the surface and prevent damage from everyday wear and tear.

What are the dangers of using coal tar sealant? Coal tar sealant contains Polycyclic Aromatic Hydrocarbons (PAHs). These harmful compounds have been found in streams across the state of Michigan, after stormwater runoff polluted with these compounds enters the waterways and is mixed with the freshwater.

Coal tar sealant is also a known toxin to some species of fish and macroinvertebrates. Some species of fish exposed to coal tar sealant were found with developmental disabilities.

How does coal tar sealant containing PAH's get into the environment? Coal tar sealant sediments and particles can be spread in many ways. Coal Tar enters local freshwater ecosystems through stormwater runoff entering our storm drains. In warm weather, toxic PAH particles are released from the sealant into the air we breathe. Particles can also be blown into the air by the wind, tracked indoors on the bottoms of shoes, and also stick to the bottoms of tires on cars and carried as we drive.

What can you do?

Do not use Coal Tar Sealant whenever possible.

Seek alternatives such as asphalt based materials which contain lower concentrations of PAHs.

Be proactive when talking about coal tar as an environmental and human health issue. The banning of coal tar is gaining traction around the state.

Contamination From Cross Connection

A cross connection is an arrangement of piping that could allow unacceptable water, sewage, or chemical solutions to enter your safe drinking (potable) water system as a result of backflow. Cross connections with potable piping systems have resulted in numerous cases of sicknesses and even death. Over the years, cross connections have been one of the most prevalent public health threats to a drinking water supply system and many times are present in residential water systems.

As stated in The Charter Township of Independence Code of Ordinance: Chapter 48, Article II, Section 48-27(d) this request follows state and local laws, failure to submit completed tests to us could result in the discontinuance of water service to your location. Every three years all residential irrigation or other backflow devices on your property must be tested for proper operation.

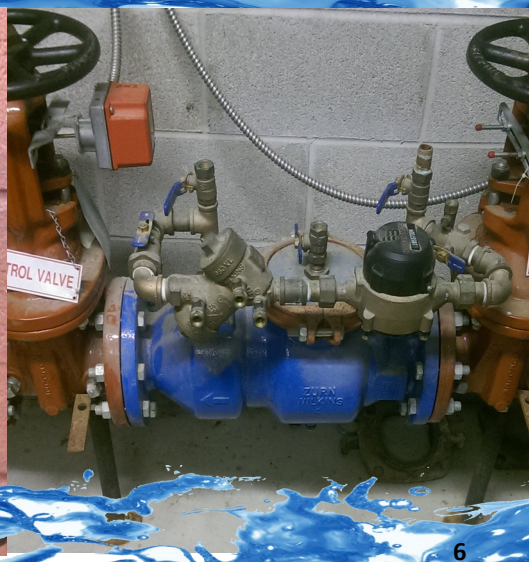
Contamination can also occur when the pressure in the drinking water line drops (main breaks, heavy water demand) causing contaminants to be drawn out from equipment and into the drinking water line, this is referred to as (backsiphonage).

Outside water spigots and garden hoses are the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for killing weeds. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or gardening chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

The State of Michigan's Cross Connection Program started at the same time as Michigan's Safe Water Drinking Act began in April of 1972. Independence Township's commercial Cross Connection Control program (CCC) was developed to comply with all State and Federal regulations. Independence Township has worked directly with our commercial inspection consultants HydroCorp since 2006 and may be surveying the exteriors of your residential properties. Depending on the degree of hazard, all inspections and device testing will occur between one and three years.

In 2018, Independence Township implemented the Federal and State mandated Residential Cross Connection Control Program to comply with all regulatory obligations. The Department of Public Works will continue to send out residential surveys and inspections during meter changes, notify residents based on irrigation permits, and prior backflow device test reports. If you have not had your irrigation backflow device tested within the last three years, it is a requirement, in keeping our water safe by having it tested. A list of certified testers can be found on the Township's website at www.indtwp.com or one can be emailed directly to you by calling The Public Works Office at 248-625-8222.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices are installed and maintained. For more information, please call the Safe Drinking Water Hotline 800-426-4791 or visit: www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/DWEHD/Water-Well-Construction/cross-connection-rules-manual.pdf .



SUBSTANCES THAT COULD BE IN WATER

To ensure that tap water is safe to drink, U.S. Environmental Protection Agency (EPA) sets regulations limiting the amount of certain contaminants in public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may contain a small amount of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. For more information about contaminants and potential health effects, call the U.S. EPA at 1- 800-426-4791.

SOURCES OF DRINKING WATER

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. Independence Township's water supply is provided by community wells. As water travels over land or through the ground, it dissolves naturally accumulating minerals that pick up substances from the presence of animals or human activity. Examples are:

- Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Pesticides and herbicides, may come from a variety of sources such as agriculture, urban storm water runoff and residential uses. These were not found in our water sampling results.

CONTAMINANTS IN DRINKING WATER

The tables inserted in this report list the drinking water contaminants that we detected during the 2024 report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the date presented in this table is from testing done January 1 through December 31, 2024.

The state allows us to monitor for certain contaminants less than once per year because the concentration of these contaminants are not expected to vary significantly from year to year. The following health effects are associated with these contaminants if the contaminant level is over the Maximum Contaminant Level (MCL) or Action Level (AL) for all parameters monitored:

COPPER is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal physician.

FLUORIDE: Some people who drink water containing fluoride in excess of the MCL over many years could result in bone disease, including pain and tenderness of the bones. Children may get mottled teeth. Fluoride is **NOT** added to our water system.

LEAD: Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. Charter Township of Independence is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for at least 5 minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water and wish to have your water tested, contact Charter Township of Independence and Thomas Graham at 248-625-8222 for available resources. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

BACTERIA AND OTHER MICROORGANISMS inhabit our world naturally, that's a fact. They can be found all around us: in our food, on our skin, in our bodies and in the air, soil and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested multiple water samples for coliform bacteria. Federal regulations now require that public water testing positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. All of our bacterial testing indicate an absence of coliform bacteria in our water.

CHLORIDE can be found in most common salts, such as road salt, table salt and water-softener salt. It can infiltrate the ground from de-icing roads in the winter or from septic tank leachate from water softening.

ARSENIC is a natural element found widely in the earth's crust. There are trace amounts in all living matter. Arsenic can enter lakes, rivers or underground naturally, when mineral deposits or rocks containing arsenic dissolve. While your drinking water meets EPA's standards for arsenic, it does contain low levels of arsenic. 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.

NITRATE is formed when oxygen, in the air or dissolved in water, combines with nitrogen. While nitrate is naturally occurring, concentrations can rise from septic tank leachate and fertilizers which are rich in nitrogen. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. Our water was detected to have 3.5 mg/L as the highest level in the Main Loop service area. Nitrate was not detected in the Deerwood or Hillview service areas. The MCL for nitrate is 10.0 mg/L.

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.

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, which can be naturally occurring or be the result of oil and gas production and mining activities.

Water Quality Data

For the Service Areas Deerwood (WSSN 1773), Hillview (WSSN 3175) and Main Loop (WSSN 3342)

Regulated Contaminant	MCL	MCLG	Level Detected	Range	Sample Date	Violation	Typical Source of Contaminant
Alpha Emitters (pCi/L)	***15.0***	***0.0***					
Deerwood			3.60	1.20 - 3.60	2021	No	Erosions of natural deposits
Hillview			2.70	0.10 - 2.70	2021	No	
Main Loop			2.06	.277 - 2.06	2024	No	
Arsenic (ppb)	***10.0***	***0.0***					Erosion of natural deposits; runoff from orchards; runoff from glass electronic production waste
Deerwood			ND	ND	2024	No	
Hillview			7.0	0.00 - 7.00	2022	No	
Main Loop			8.0	3.00 - 8.00	2024	No	
Barium (ppm)	***2.0***	***2.0***					Discharging of drilling wastes; discharge of metal refineries; erosion of natural deposits
Deerwood			0.14	0.00 - 0.14	2023	No	
Hillview			0.11	0.00 - 0.11	2022	No	
Main Loop			0.11	0.00 - 0.11	2023	No	
Chlorine (ppm)	***4.0***	***4.0***					Water additive used to control microbes
Deerwood			*0.51	0.26 - 0.89	2024	No	
Hillview			*0.55	0.05 - 1.17	2024	No	
Main Loop			*0.50	0.34 - 0.73	2024	No	
Chromium (ppm)	***0.1***	***0.1***					Discharge from steel & pulp mills; erosion of natural deposits
Deerwood			ND	ND	2023	No	
Hillview			ND	ND	2022	No	
Main Loop			ND	ND	2022	No	
Cyanide (ppm)	***0.2***	***0.2***					Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Deerwood			ND	ND	2020	No	
Hillview			ND	ND	2022	No	
Main Loop			ND	ND	2023	No	
Fluoride (ppm)	***4.0***	***4.0***					Erosion of natural deposits. Discharge from fertilizer and aluminum factories
Deerwood			0.27	0.24 - 0.27	2024	No	
Hillview			ND	ND	2024	No	
Main Loop			0.89	0.31 - 0.89	2024	No	
HAA5 (ppb)	***60.0***	***N/A***					Haloacetic Acids By-product of drinking water disinfection
Deerwood			*0.00	0.00 - 0.00	2024	No	
Hillview			*0.00	0.00 - 0.00	2024	No	
Main Loop			*0.30	0.00 - 3.00	2024	No	
Nickel (ppb)	***N/A***	***N/A***					Erosion of natural deposits
Deerwood			ND	ND	2023	No	
Hillview			ND	ND	2022	No	
Main Loop			ND	ND	2023	No	
Nitrate (ppm)	***10.0***	***10.0***					Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Deerwood			ND	ND	2024	No	
Hillview			ND	ND	2024	No	
Main Loop			3.5	1.6 - 3.5	2024	No	
Selenium (ppb)	***50.0***						Erosion of natural deposits
Deerwood			ND	ND	2023	No	
Hillview			3.00	0.0 - 3.00	2022	No	
Main Loop			ND	ND	2023	No	
TTHM - Total (ppb)	***80.0***	***N/A***					Triahalomethanes By-product of drinking water disinfection
Deerwood			*0.50	0.00 - 6.10	2024	No	
Hillview			*0.00	0.00 - 0.00	2024	No	
Main Loop			*1.80	0.00 - 22.7	2024	No	
Xylenes (ppm)	***10.0***	***10.0***					Discharge from petroleum and chemical factories
Deerwood			< 1.50	0.000 - < 1.50	2015	No	
Hillview			ND	ND	2016	No	
Main Loop			< 1.50	0.000 - < 1.50	2016	No	

< Indicates less than

* Indicates a running average calculation

** Sodium is an unregulated contaminant and thus there is no MCL associated with it. Unregulated contaminant monitoring helps the EPA to determine whether there is a need to regulate the contaminant.

*** 90% of homes tested have lead/copper levels at or below the 90th percentile value.

Contaminant Subject to AL	Action Level	MCLG	90th Percentile of Samples Collected	Sample Date	# of Sites Above AL	Sample Range	Typical Source of Contaminant
Lead ***(ppb)	***15***	***0***					
Deerwood			2 ppb	2024	1 out of 13 sites	0 to 23 ppb	Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits
Hillview			1 ppb	2024	0 out of 5 sites	0 to 1 ppb	
Main Loop			2 ppb	2024	0 out of 30 sites	0 to 7 ppb	
Copper *** (ppm)	***1.3***	***1.3***					
Deerwood			0.2 ppm	2024	0 out of 13 sites	0.0 to 0.2 ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Hillview			0.2 ppm	2024	0 out of 5 sites	0.0 to 0.2 ppm	
Main Loop			0.2 ppm	2024	0 out of 30 sites	0.0 to 0.4 ppm	

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

Radioactive Contaminant	MCL	MCL G	Level Detected	Range	Sample Date	Violation	Typical Source of Contaminant
Combined radium	***5 pCi/L***	***0***					
Deerwood			.736	.184 - .736	2024	No	Erosions of natural deposits
Hillview			.882	.498 - .882	2024	No	
Main Loop			.96	.32 - .96	2024	No	

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

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

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.

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

MRDLG (Maximum Residual Disinfectant Goal): 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.

ppb (Parts per billion or micrograms per liter)

ppm (Parts per million or milligrams per liter)

YOUR WATER: The highest single value obtained during the reporting period unless noted with an *

RANGE: The lowest to the highest values obtained

ND (Not detectable at testing limit)

N/A (Not applicable)

Special Monitoring & Unregulated Contaminant*	Level Detected	Range	Sample Date	Typical Source of Contaminant
Sodium** (ppm)				Erosion of natural deposits
Deerwood	18	15 - 18	2024	
Hillview	30	0 - 30	2024	
Main Loop	110	30 - 110	2024	
Chloride (ppm)				Erosion of natural deposits
Deerwood	55	43 - 55	2024	
Hillview	136	0 - 136	2024	
Main Loop	156	38 - 156	2024	
Sulfate (ppm)				Erosion of natural deposits
Deerwood	42	39 - 42	2024	
Hillview	50	0 - 50	2024	
Main Loop	41	17 - 41	2024	

ARSENIC LEVELS

While your drinking water meets the U.S. EPA standard for arsenic, it does contain low levels of arsenic. The U.S EPA standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. 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.

SPECIAL PRECAUTION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as cancer patients undergoing chemotherapy, people 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 800-426-4791.

PFAS - What is it and where does it come from?

PFAS is an acronym for Per-and Polyfluorinated Substances. PFAS has been used globally during the past century in manufacturing, firefighting, along with thousands of common household and other consumer related products.

Actions to commercially produce PFAS were first developed in the 1940's. In the 1950's several companies began manufacturing PFAS for product applications because of its ability to repel water, protect surfaces, resist heat and many other useful properties.

Chemicals in this class of more than 5,000 substances are found in products such as nonstick pans that contain Teflon, food packaging, waterproof jackets, cosmetics and carpets to repel water, grease, and stains.

In recent years, experts have become increasingly concerned by the potential effects of high concentrations of PFAS on human health. These chemicals don't break down in the environment and also bioaccumulate, meaning the amount builds up over time in organs and the bloodstream. Please watch our PSA video https://www.youtube.com/watch?v=MGDHC6zx80I.

Why was The Charter Township of Independence's source water tested for PFAS?

The Environment, Great Lakes & Energy (EGLE) coordinated a statewide program to test drinking water from all community water supplies and schools that use well water for PFAS. Michigan's EGLE took this preventative measure to test drinking water sources to determine if public health actions are needed.

In 2018 the State of Michigan tested all of Independence Township's wells, all came back with negative PFAS results with the exception of our Clarkston Gardens Wellhouse, which was immediately taken offline even though the test results were well below the health advisory level of 70 Parts Per Trillion (ppt). Trace amounts of PFAS contaminants were also found at Chestnut Hills Wellhouse. This plant was taken offline in 2022. These trace amounts are well below any established MCL set by the EPA or State of Michigan as of this time.

The Department of Public Works was transparent and forthcoming about this discovery and immediately notified the public of these findings. The Clarkston Gardens and Chestnut Hills Wellhouse are offline and will continue to remain offline with repeated testing performed every quarter.

Clarkston Gardens Test Results (Offline 2018)

Regulated Contaminant	MCL, TT, or MRDL	MCLG or MRDLG	Level Detected	Range	Year Sampled	Violation Yes/No	Typical Source of Contaminant
Hexafluoropropylene oxide dimer acid (HFPO-DA) (ppt)	370	N/A	N/D	0	2024	No	Discharge and waste from industrial facilities utilizing the Gen X chemical process
Perfluorobutane sulfonic acid (PFBS) (ppt)	420	N/A	7	0 - 7	2024	No	Discharge and waste from industrial facilities; stain-resistant treatments
Perfluorohexane sulfonic acid (PFHxS) (ppt)	51	N/A	31	0 - 31	2024	No	Firefighting foam; discharge and waste from industrial facilities
Perfluorohexanoic acid (PFHxA) (ppt)	400,000	N/A	5	0 - 5	2024	No	Firefighting foam; discharge and waste from industrial facilities
Perfluorononanoic acid (PFNA) (ppt)	6	N/A	N/D	0	2024	No	Discharge and waste from industrial facilities; breakdown of precursor compounds
Perfluorooctane sulfonic acid (PFOS) (ppt)	16	N/A	9	0 - 9	2024	No	Firefighting foam; discharge from electroplating facilities; discharge and waste from industrial facilities
Perfluorooctanoic acid (PFOA) (ppt)	8	N/A	6	0 - 6	2024	No	Discharge and waste from industrial facilities; stain-resistant treatments

What is currently being done about this issue in Michigan?

The state of Michigan will substantially limit its purchase of products made with toxic PFAS chemicals that environmental groups are calling a precedent-setting move.

Michigan, which buys $2.5 billion worth of goods annually, must vet procurement contracts for products made or packaged with PFAS and will require suppliers to disclose whether there are alternatives that do not contain the chemicals. Preference will go toward products made without PFAS and items that do contain the chemicals should only be bought if no alternatives are available.

Who can I call if I have questions about PFAS in my drinking water?

If residents have questions regarding this, the State of Michigan Environmental Assistance Center can be contacted at 800-662-9278. Representatives may be reached to assist with your questions Monday through Friday, 8:00 AM to 4:30 PM. If you are concerned about exposure to PFAS in your drinking water, please contact the Michigan Department of Health and Human Services Toxicology Hotline at 800-648-6942, the Center for Disease Control and Prevention/ATSDR at https://www.cdc.gov/cdc-info/ or 800-232-4636. You may also contact The Charter Township of Independence DPW at 248-625-8222.

For Our Residents With Private Wells

WHAT IS ARSENIC?

Arsenic is found in nature at low levels. It is found in groundwater, air, food, and soil. Most arsenic compounds have no smell or taste. Arsenic joins with oxygen, chlorine and sulfur to make inorganic arsenic compounds. Inorganic arsenic compounds are used to preserve wood, make insecticides and weed killers. Arsenic in plants and animals combined with carbon and hydrogen to make organic arsenic. Organic arsenic is less harmful than inorganic arsenic. Check the labels of treated wood products, insecticides and herbicides to see if they contain arsenic.

HOW ARSENIC GETS INTO DRINKING WATER

Mineral deposits in some areas of Michigan contain high levels of arsenic. It is widely believed that naturally occurring arsenic dissolves out of certain rock formations when ground water levels drop significantly. Arsenic is removed from the air by rain, snow, and gradual settling. Once on the ground or in surface water, arsenic can slowly enter ground water. This may result in elevated levels of arsenic in well water. Arsenic has no smell or taste in drinking water. You need to test your well water and see if arsenic is present.

HOW DO I HAVE MY PRIVATE WELL WATER TESTED FOR ARSENIC?

The Department of Public Works offers a water testing kit and instructions for sample collection that residents can complete and mail directly to the Environment, Great Lakes & Energy (EGLE) Drinking Water Laboratory. EGLE recommends that homeowners have their well water tested for arsenic. EGLE's Drinking Water Laboratory may be reached at 517-335-8184; or any commercial laboratory certified to test for arsenic can perform the laboratory analysis for a small fee. Please call 248-625-8222 or email dpw@indtwp.com with any questions.

HOW DO I INTERPRET MY WATER SAMPLE RESULTS?

The Environmental Protection Agency (EPA) set an arsenic maximum contaminant level (MCL) for public water supplies at 0.010 mg/L. This is equivalent to 0.010 parts per million (ppm), 10 micrograms/liter (µg/L), or 10 parts per billion (ppb). The EPA also sets the MCL Goal (MCLG) for drinking water. The MCLG is set at a level that uses the best available science to prevent potential health problems. The EPA has set the MCLG for arsenic at zero. For private water supplies (i.e., individual residential wells) the arsenic drinking water health advisory recommendation is also 0.010 mg/L. If the arsenic in your water exceeds 0.010 mg/L, EGLE recommends that you do not use your well water for drinking or cooking. Heating or boiling your water will not remove arsenic, as some of the water evaporates, the arsenic concentrations can actually increase slightly as the water is boiled.

WHAT SHOULD BE DONE IF THERE IS AN ELEVATED AMOUNT OF ARSENIC IN THE WELL?

Consider connecting to a public water supply if available. The public water supply is monitored by EPA and state regulators to ensure your water meets Federal and State drinking water standards. Consider installing a water filtration system. There are two types to choose from: a "Point of Use System" or a "Point of Entry System". The "POU" system fits under any sink but is typically installed in the kitchen, such as a reverse osmosis, ultra-filtration, distillation or ion exchange methods. This system is the least expensive and fairly easy to install. The "POE" System" treats all the water that enters your home; these systems are the most expensive and should be installed by certified service personnel. Whichever system you choose, it is important to address the problem so your family is drinking clean and safe water.

Stormwater Management

Stormwater management has been concerned with the large potential of downstream flooding. However, over the last 30 years, there has been a growing concern with the quality of the stormwater runoff and its impact on our environment. Stormwater runoff picks up pollutants that have accumulated on the land surface and washes them into receiving waters. The pollutants can include sediment, nutrients, and heavy metals just to name a few. These contaminants enter the food chain, destroy aquatic habitat, and can cause considerable damage to lakes or streams.

As a result of the water quality and quantity concerns, stormwater management has begun to evolve into a field that attempts to incorporate reducing future flood damages with water-quality improvements. The information presents some background in stormwater management and will offer some approaches to addressing the urban runoff problem.

Independence Township has had an MS4 permit (Municipal Separate Storm Sewer System) in place since 2003 and is committed to the environment in complying with all State and Federal regulations. This permit is designed to reduce the amount of sediment and other pollutants entering state waters from stormwater systems.

Our stormwater management consultant regularly conducts surface water sampling for potential contaminants as well as bi-annual Township facility inspections for proper good housekeeping and pollution prevention practices. In addition, Independence Township has developed several educational videos on storm and groundwater concerns and frequently publishes articles in the local Clarkston News for stormwater and groundwater issues along with public education assistance. Independence Township's consultant also manages routine sampling of all storm drainage structures to determine if contaminates are in the water.

In 2019, Independence Township's Parks and Recreation Department was awarded a Green Infrastructure Grant from Southeast Michigan Council of Governments (SEMCOG) to install an outdoor rain garden at Bay Court's Brady Lodge to help collect rain water and reduce water runoff within the stormwater system. A rain garden is a depressed area in the landscape that collects rain water from a roof, driveway or street and allows it to soak into the ground. Planted with grasses and flowering perennials, rain gardens can be a cost effective and beautiful way to reduce runoff from your property. Rain gardens can also help filter out pollutants in runoff and provide food and shelters for butterflies, song birds and other wildlife.

BECOME RIVERSAFE LAKESAFE CERTIFIED

The RiverSafe LakeSafe Program is a free survey that residents and businesses can take to find out if they are keeping our freshwater resources clean and healthy. **If the results show that they are practicing to be RiverSafe LakeSafe, residents and businesses will receive an official RiverSafe LakeSafe plaque** that they are welcome to display on their front yard, storefront, windows, or next to a river or lake on your property.

To learn more on how to be RiverSafe LakeSafe, head over to the Clinton River Watershed Council (CRWC) website at **crwc.org** and take a look at our educational links and resources.

Visit the CRWC website to take the survey! If you don't succeed after completing the first survey, do not worry! We encourage you to look through our resources library and take the survey again! You can take it as many times as you like in order to get certified!

KEEPING IT CLEAN

The Keeping It Clean program engages citizens of all ages to participate in trash clean-ups throughout the Clinton River Watershed and along the Lake St. Clair shoreline.

CLINTON RIVER COLDWATER CONSERVATION PROJECT (CRCCP)

The CRCCP seeks to generate public support for the Clinton River Watershed as a valued recreational resource through efforts to improve the water quality, aesthetics, access to the Clinton River and its fresh water streams. For more information please contact the CRWC at 248-601-0606 or visit www.crwc.org.

ADOPT-A-STREAM

The Clinton River Watershed Council's Adopt-A-Stream program is a volunteer-based program that empowers community members to protect local streams and rivers through water quality monitoring. Citizens involvement in water quality monitoring activities has resulted in positive change across the nation, the state and right here in the Clinton River Watershed.

Fat, Oils and Greases (FOG)

Where Does the Grease Come From? Grease is a byproduct of cooking that comes from meat fats, lard, oil, shortening, butter, margarine, food scraps, baked goods, sauces and dairy products. When washed down the sink, grease sticks to the insides of sewer pipes (both on your property and in the street). Over time, it can and will build up, eventually forming a blockage throughout the entire pipe. If you have a backup due to this, it can lead to thousands of dollars to repair.

You Can Help With Some of These Tips!

- Never pour cooking oil, bacon grease, pan drippings or salad dressing down the drains or into toilets.
- Collect excess fats and oils in a sealed container and recycle appropriately.
- Putting baskets/strainers in sink drains to catch food scraps and other solids and emptying them into the trash.
- Speak with your neighbors and friends about how to keep grease out of our sewers.

What's All The Hype About Not Flushing

Since wet wipes are essential for children, many parents will carry them around everywhere where they go, especially when changing is necessary. Wet wipes are also great for cleaning hands, removing makeup, and general cleaning. With all of the options wet wipes provide, who wouldn't want to use them? However, just because an item can be flushed, doesn't mean it should be. Hygiene products used in the bathroom are flushed out of convenience and just because they simply can be disposed in the toilet, doesn't mean they should.

- With the demand for flushable wipes being heightened since the Coronavirus pandemic, greater pressure is put on the sewer system.
- Flushing baby wipes could potentially cause you $10,000 in plumbing repairs. Plumbing experts say there's no such thing as a flushable wipe.
- "Flushable" **does not** mean it's safe for the sewer system and **only** flush toilet paper and what humans produce.
- Flushing wipes have caused many clogs around the world, and the problem is only getting worse, especially since the wipe companies are not being completely honest with consumers about the wipes they're creating.
- The proper way to dispose of non-flushable items is to simply throw them away in the garbage.

West Nile Virus & Eastern Equine Encephalitis

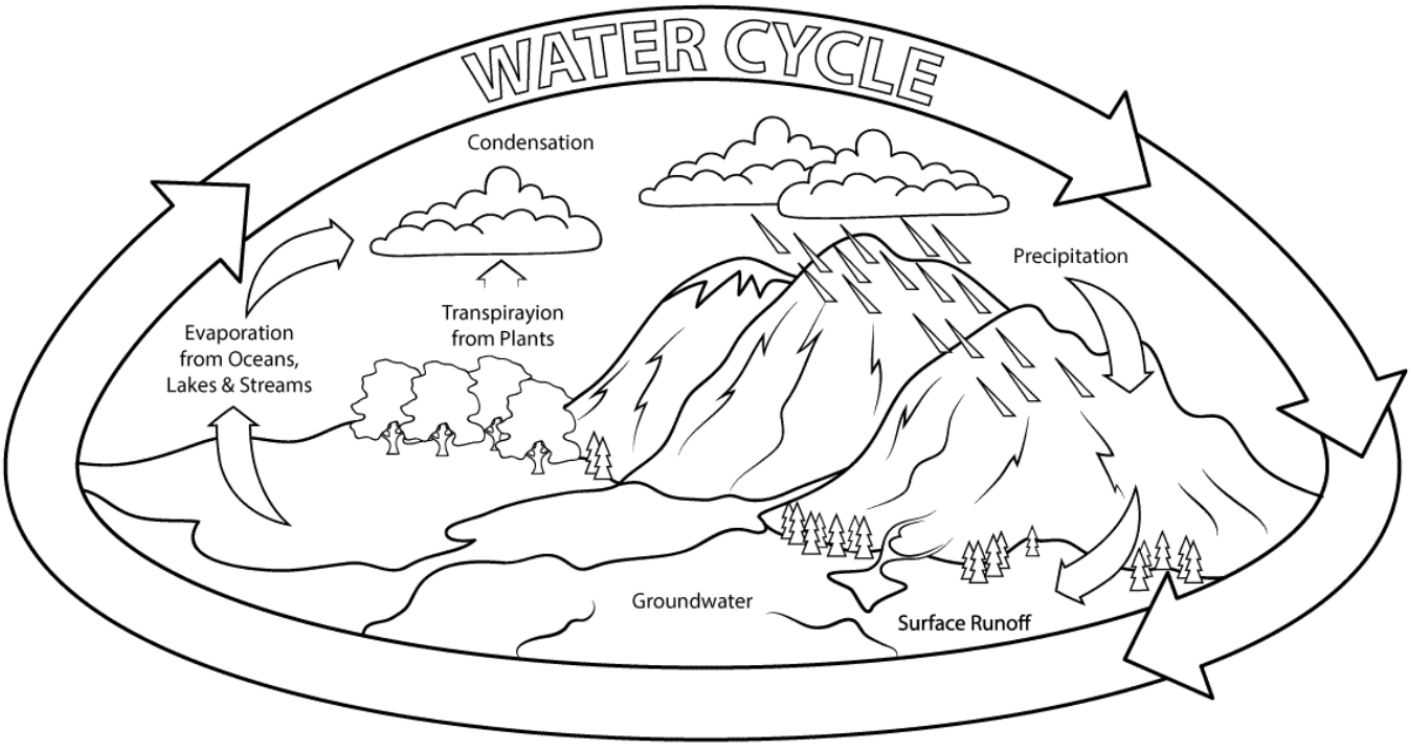
West Nile and EEE are viruses most commonly spread to people by mosquito bites. In North America, cases of West Nile Virus and EEE occur during mosquito season, which starts in the spring and continues through fall. Cases have been reported throughout the continental United States. Currently there are no vaccines or medications to treat or prevent WNV or EEE. Fortunately, most people infected with WNV don't experience symptoms. About 1 in 5 people who are infected develop a fever and other symptoms including headache, joint pains, vomiting, diarrhea or a rash, while signs of EEE include the sudden onset of fever, chills, body and joint aches which can progress to a severe encephalitis, resulting in headache, disorientation, tremors, seizures and paralysis.

HOW CAN THESE VIRUSES BE PREVENTED?

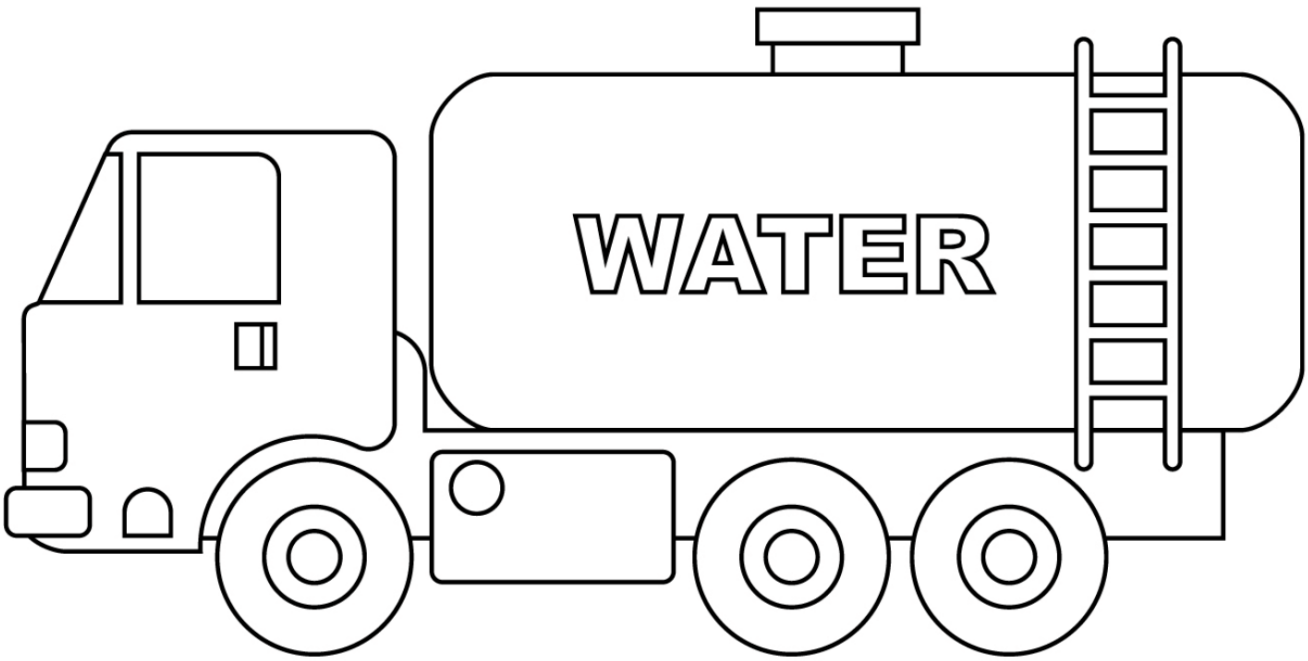
The best way to avoid WNV or EEE infections is to prevent mosquito bites using insect repellent. The Centers for Disease Control and Prevention (CDC) recommends the use of insect repellents containing active ingredients registered with the U.S. Environmental Protection Agency (EPA). Always follow manufacturer's directions carefully. This year, Independence Township will provide Natrapel 20% Picaridin 1oz Pump Spray. This product will be available for residents to pick up at the Parks & Rec Department, Senior Center, Clarkston Independence District Library, Town Hall and The Department of Public Works.

Please do not apply insect repellent to eyes, mouth, cuts or irritated skin. Wear protective clothing such as long sleeved shirts and pants. Limit outdoor activity from dusk to dawn when mosquitoes are most active. Avoid areas where mosquitoes may be present (i.e., shaded and wooded areas). Maintain window and door screens to keep mosquitoes outdoors.

Water Cycle Coloring



Color The Water Tanker



Water Resources

Artificial Eutrophication

nonpoint-source pollution

point-source pollution

wastewater treatment

Transporting water

Thermal pollution

Clean Water Act

Water Pollution

The wate cycle

Sewage sludge

Recharge Zone

Surface Water

algal blooms

Desalination

Heavy Metals

Permeability

Condensation

Groundwater

Wastewater

Reservoir

Pathogens

Watershed

Porosity

potable

Aquifer

Dams

X F L D E N S L A T E M Y V A E H Q M V Q H I D

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P O Y E Y I N R P Y O N R E S E R V O I R H J O

O N H T T T T O E G G X K T B C X D U R F E F Q

I P J T H A R S I C W Y H B Z R V A D C E Z G T

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Y O A W H R L P E R M E A B I L I T Y G B T P O

J N K K S A B K C N O I T A N I L A S E D V H I