P U B L I C N O T I C E

HEALTH DEPARTMENT OF NORTHWEST MICHIGAN
BOARD OF HEALTH MEETING

Meeting will be held at:
10:00 a.m. Tuesday, May 5, 2026
Otsego County Library
700 S. Otsego Ave., Gaylord, MI 49735
(231) 547-7663

ZOOM OPTION AVAILABLE

Safety Capacity
In person attendance will be limited to allow for spacing and following the Otsego County Library capacity limits as established by the Fire Marshall. Attendees are reminded they can also view the meeting via Zoom with the link provided. Public comment will not be allowed via Zoom.

Submission of Comments on Agenda Items
Public Comment on any agenda item may be shared through our website to address the Board of Health by clicking this link: PUBLIC COMMENT CARD. To have your comment electronically delivered to Board of Health members for review prior to the meeting, they must be submitted by 10 a.m. the day prior to the scheduled public meeting. Public comment cards submitted after that time will be printed and provided to Board of Health members at the scheduled meeting. NOTE: Public comments submitted via public comment card will be
reviewed but not read at the meeting.

Meeting Accessibility
Pursuant to the American with Disabilities Act, individuals who, because of a disability, need special assistance to attend or participate in the Board of Health meeting, may request assistance by calling (231) 547-7663 or by emailing m.bosman@nwhealth.org. Requests should be made by Sunday, May 3, 2026.

The availability of Public Comment is recognized by Robert's Rules of Order and the Michigan Open Meetings Act to provide for orderly comment from the public. Public comments are welcome and are important to the Board of Health. To that end, the following information is provided:

1. Speakers are encouraged to use the podium and microphone so that Board members can clearly hear their message.

2. Before beginning, a speaker should clearly state their name.

3. The Chairperson may implement a sign-up sheet for public comment at any time during a meeting if it becomes necessary to better organize a large public turnout.

4. There is a three (3) minute time limit for each speaker. Timing will begin after a speaker's name is established. Upon notification that thirty (30) seconds remain, speakers must make every effort to conclude their comments within this timeframe.

5. Upon the oral request of a member of the public ("donor") who is present at a public meeting and who wishes to donate his or her speaking slot to another member of the public ("speaker"), and with the permission of the Chairperson which shall not be unreasonably withheld, a speaker may comment for up to six (6) minutes, equivalent to two (2) public speaking slots.

6. Public comment shall be addressed to the Chairperson, not to Health Department staff or individual Board of Health members.

7. Speakers should be germane, courteous, and respectful during their speaking time; strongly worded advocacy, however, is to be expected, and shall not by itself be considered discourteous or disrespectful by the Board of Health.

8. If a speaker desires to provide materials to Board members during the meeting, the speaker or a designee will give the materials to the Board's secretary for distribution.

9. The Chairperson has the discretion to permit members of the public to speak at times other than those times reserved for public comment.

10. These Public Comment Rules will be incorporated with the posted agenda for each public meeting of the Board of Health so that they are readily available to each person who desires to speak at the meeting. The Board of Health expects that each person desiring to speak at the meeting will have read and will comply with these rules.

HEALTH DEPARTMENT of Northwest Michigan

AGENDA

BOARD OF HEALTH MEETING

10:00 a.m. Tuesday, May 5, 2026

Meeting will be held at the Otsego County Library

700 South Otsego Ave., Gaylord, MI 49735

For more information, please call (231) 547-7663

ZOOM OPTION

https://us06web.zoom.us/j/81191699540?pwd=btohiZHMO1sk9bdcIWD7ybUCCD0TMY.1

Passcode: 992102

Or dial: 1 929 205 6099

Webinar ID: 811 9169 9540

Passcode: 992102

I.	Call to Order	Commissioner Hankins
II.	Opening Ceremony a. Pledge of Allegiance b. Invocation	Commissioner Hankins
III.	Roll Call	Commissioner Hankins
IV.	Approval of the Agenda a. Add or Remove Agenda Items	Commissioner Hankins
V.	Review/Approval of the Meeting Minutes from April 7, 2026	Commissioner Hankins
VI.	Public Comment (Three Minute Limit)	
VII.	Staff Reports a. Health Officer Report	Shannon Klonowski
	Written Reports Submitted By: a. Medical Director b. Family Health Director c. Environmental Health Director d. Community Health Director	 Josh Meyerson Melissa Hahn Jeremy Fruk Janenne Pung

Oral Report Submitted By:

a. School Health Director — Jen Vollmer

VIII. Committee Reports

a. Personnel & Finance Committee

1. March Bill and Employee Expense Approval (Action Item) — Commissioner Koontz
2. MERS Amendments (Action Item) — Shannon Klonowski

b. Program & Evaluation Committee

IX. Unfinished Business

X. New Business

a. Well First Proposed Revisions – Antrim County (Action Item) — Jeremy Fruk
b. County Appropriations Update — Kevin Hartley

XI. Public Comment (Three Minute Limit)

XII. Commissioner Comment (Three Minute Limit)

XIII. Adjournment

Minutes of the Regular Board of Health Meeting
Health Department of Northwest Michigan
10:00 a.m. April 7, 2026

Call to order: A regular meeting of the Board of Health was held at the Shirley Roloff Center on April 7, 2026. The meeting was called to order at 10:00 a.m. by Commissioner Hankins, Chairperson. Five (5) members of the Board of Health were in attendance establishing a quorum.

Members in attendance, roll call: Commissioners Scott Hankins, Josh Chamberlain, Terry VanAlstine, Don Mapes, and Jonathan Turnbull.

Members absent/excused: Commissioners Helwig, Koontz, and Wingo.

Staff in attendance: Shannon Klonowski**,** Dr. Joshua Meyerson, Kevin Hartley, Melissa Hahn, Janenne Pung, Jen Vollmer, Tim Hella, Jeremy Fruk, Olivia Van Elslander, Nate Damer, Jaimen Waha, and Melanie Bosman.

PLEDGE OF ALLEGIANCE

INVOCATION

APPROVAL OF THE AGENDA
MOTION: Commissioner Chamberlain made a motion to approve the agenda as presented. Supported by Commissioner Mapes. Roll Call. All ayes. Motion carried.

APPROVAL OF THE MARCH 3, 2026, BOARD OF HEALTH MEETING MINUTES:
MOTION: Commissioner VanAlstine made a motion to approve the March 3, 2026, meeting minutes as presented. Supported by Commissioner Chamberlain. Roll Call. All ayes. Motion carried.

PUBLIC COMMENT: None.

FINANCIAL AUDIT REPORT
Krin Perreault with DG&N presented the financial audit report.

STAFF REPORTS
Shannon Klonowski, Health Officer – Oral and written reports were shared, including Emergency Response protocol and the Health Department of Northwest Michigan's role during emergent events.

Written reports:
- Joshua Meyerson, MD, MPH, Medical Director – Submitted a report on Bovine Tuberculosis.
- Melissa Hahn, MPH, BA, RN, Director of Family Health - Submitted a report on Communicable Disease Surveillance.
- Jen Vollmer, MA LPC, Director of School Health – Submitted a report on Together We Rise.
- Janenne Irene Pung, Director of Community Health – Submitted a report on Community Connections Collaboration.

Oral report:
- Jeremy Fruk, MSA., REHS, Director of Environmental Health and Jaimen Waha, MPH, REHS, Environmental Health Sanitarian - Submitted an oral report on the new Environmental Health Fetch Program.

PERSONNEL & FINANCE COMMITTEE

ACCOUNTS PAYABLE:
MOTION: Commissioner Hankins made a motion that the finance committee met to review the bills and employee expenses and would like for the full board to approve February 2026 bills in the amount of $590,020.58. Supported by Commissioner VanAlstine. Roll call. All ayes. Motion carried.

MOTION: Commissioner Hankins made a motion that the finance committee met to review the bills and employee expenses and would like for the full board to approve February 2026 employee expenses in the amount of $17,132.02. Supported by Commissioner Chamberlain. Roll call. All ayes. Motion carried.

PROGRAM & EVALUATION COMMITTEE:
None.

UNFINISHED BUSINESS:
None.

NEW BUSINESS:
None.

PUBLIC COMMENT: None.

COMMISSIONER COMMENT: None.

ADJOURNMENT
Commissioner Chamberlain made a motion to adjourn the meeting. Supported by Commissioner Mapes. Voice vote. All ayes. Motion carried. Meeting adjourned at 10:45 a.m. Tuesday, April 7, 2026. The fixed date and time for the next regular meeting of the Board of Health will be May 5, 2026, at 10:00 a.m. and this meeting will be held at the Otsego County Library.

Respectfully submitted,

Shannon Klonowski, Health Officer
May 5, 2026

Scott Hankins, Chairperson

Spring 2026

PROVIDER UPDATE

News from your local Health Department

In This Issue

Bovine TB

Cervical Cancer Screening Recommendations

Alpha Gal Syndrome

Study Links Fluoridated Water to Better Cognitive Performance

Measles

5 years CD Report

Joshua Meyerson, MD

220 W. Garfield Ave.
Charlevoix, MI 49720

j.meyerson@nwhealth.org
231-547-7679

Bovine TB

Bovine tuberculosis (bTB) is one of the oldest diseases known to man. It is caused by the bacteria Mycobacterium bovis, closely related to Mycobacterium tuberculosis. Bovine TB was frequently found in dairy and beef cattle in the US until eradication efforts including pasteurization led to a dramatic reduction in the mid-20th century. In 1994 Bovine Tb was first identified in deer in Michigan and is now considered endemic in deer in the "Deer Management Unit 452" which includes portions of Alpena, Alcona, Montmorency, and Oscoda Counties. This has led to spillover and infection in cattle herds in surrounding areas. Mycobacterium bovis can infect cattle, deer, and humans as well as other cervids and mammals.

Human infections with M bovis in Michigan remain rare but have occurred among individuals with close contact to infected deer. Human M. bovis infection is clinically similar to M. tuberculosis and is acquired through close contact with infected animals or their tissues, or via unpasteurized dairy products. There have been 8 cases identified since 2002 linked to deer exposure in Northeast Michigan. Six cases involved disease in the lungs (pneumonia) and 2 were skin infections.

In 2025 a beef herd in Presque Isle and another in Alcona County were identified, the first herds detected since January 2022. In February 2026 a dairy herd in Charlevoix County was confirmed to have bTB infected cattle, notable because of its location outside the region where the disease has been found. And recently two additional herds in NE Michigan have also been confirmed to have bTB infected cattle.

The risk to the public in Northern Michigan is low, but those that may have been exposed to infected deer or cattle should consider getting tested for infection. Unpasteurized milk from infected cattle is highly infectious and should not be consumed. Early identification and preventive treatment after exposure/infection can substantially reduce the risk of developing active TB disease.

The presence of endemic bovine TB in deer and recent infections in northern Michigan cattle herds creates an ongoing, though targeted, human health risk. The local health department's central responsibility is to work with state partners to rapidly identify exposed individuals, offer appropriate TB testing, and, when indicated, provide or arrange treatment to prevent progression to active disease.

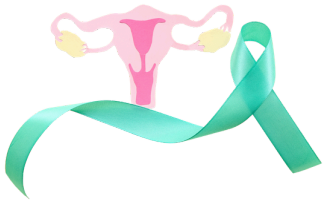
Cervical Cancer Screening Recommendations

The HPV vaccine and the use of testing for high risk HPV is transforming cervical cancer screening by enabling less frequent screenings, starting at older ages, and ability to use self-collection samples that will reduce barriers to getting screened.

A new study by researchers at the American Cancer Society (ACS) shows cervical cancer incidence rates in women ages 20-31 declined by 27% in the United States between 2016-2021, when the human papillomavirus (HPV) vaccine was available, compared to 2000-2005, before the implementation of the vaccine. Michigan is among the top states (including Hawaii, Rhode Island, and Washington, D.C.) where cervical cancer incidence rates decreased by over 50% among women aged 20–31 between 2000-2005 and 2016-2021.

During 2008–2022, cervical precancer incidence decreased 79% and higher-grade precancer incidence decreased 80% among screened women aged 20–24 years, the age group most likely to have been vaccinated.

Understanding and Applying the Latest Cervical Cancer Screening Guidelines, an MSMS on demand Webinar
https://www.pathlms.com/msms/courses/123387



The American Cancer Society (ACS), in its December 2025 guideline update, endorses self-collected vaginal specimens for primary HPV screening in average-risk individuals starting at age 25 through 65 years. Clinician-collected cervical specimens remain preferred, but self-collection is acceptable. A key distinction: when self-collected specimens are used and the result is negative, repeat testing is recommended in 3 years (rather than the 5-year interval for clinician-collected specimens), providing a margin of safety while longitudinal US data accrue.

The HRSA Women's Preventive Services Initiative (updated 2025, effective January 1, 2027) designates hrHPV testing—either patient- or clinician-collected—as the preferred screening modality for women aged 30 to 65 years at average risk. Insurance issuers will be required to cover self-collected hrHPV testing and any additional follow-up testing (cytology, colposcopy, biopsy, dual stain) without beneficiary cost sharing.

The USPSTF DRAFT recommends screening for cervical cancer every 3 years with cervical cytology alone in women ages 21 to 29 years and then every 5 years with clinician- or patient-collected high-risk human papillomavirus (HPV) primary screening in women ages 30 to 65 years.

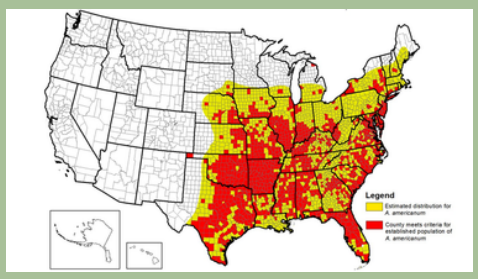
As an alternative to HPV primary screening for women ages 30 to 65 years, the USPSTF recommends continued screening every 3 years with cervical cytology alone or screening every 5 years with high-risk HPV testing in combination with cytology (cotesting).

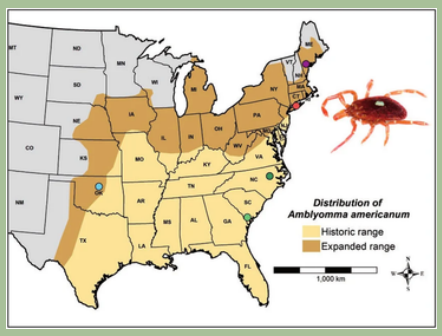
Alpha Gal Syndrome

Alpha Gal Syndrome (AGS) is an emerging IgE mediated food allergy to red meats (beef, pork, lamb) with reactions occurring 1 to several hours after ingestion. The syndrome can manifest with anaphylaxis, urticaria, or a gastrointestinal symptoms like abdominal pain, diarrhea, nausea, and vomiting.

The syndrome is caused by sensitization to the oligosaccharide galactose-alpha-1,3-galactose through bites from the Lone Star tick (Amblyomma americanum), whose range is expanding northward due to climate change and ecological factors. AGS is more commonly diagnosed in the Southeastern U.S. where the tick is much more prevalent, but lone star ticks have been found in MI in the last several years.

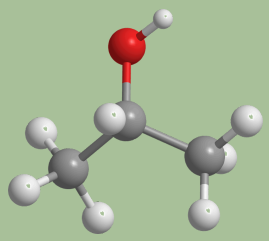
AGS is not currently a reportable disease but is an established cause of food allergy that is likely to be seen more in Michigan over time or in persons who may reside at least part of the year in the Southeast. If suspected serum alpha-gal IgE testing can be done through some reference labs with clinical correlation based on symptomatology.





Study Links Fluoridated Water to Better Cognitive Performance

A new study from researchers at the University of Minnesota challenges recent concerns from some officials regarding the safety of water fluoridation, finding that at recommended levels the mineral is associated with better cognitive performance in adolescents, not worse. Published in Science Advances, the research is the first U.S.-based investigation to examine the effects of fluoride at levels naturally occurring and recommended by the Centers for Disease Control and Prevention (CDC).

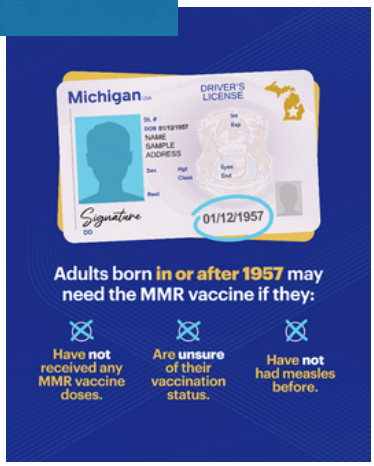


Whereas most prior research has estimated effects of exposure to extremely high levels of fluoride, this study found that children exposed to recommended levels of fluoride in drinking water exhibit modestly better cognition in secondary school, an advantage that is smaller and no longer statistically significant at age 60.

Measles

Measles returned to Michigan in 2026 with an outbreak that began in an unvaccinated individual from Washtenaw County, with likely exposure acquired in Florida. In light of further cases in other counties in SE Michigan and spring break travel, I encourage healthcare providers to maintain a high index of suspicion for measles in nonimmune patients presenting with febrile rash, particularly those with recent travel to areas of active transmission.

Measles Vaccine – Every child needs two doses of MMR to stay protected. Consider giving the second dose before 4 years of age to complete the series early. Infants 6 months through 11 months of age should receive a dose if they are residents of counties with active transmission or if they expect to travel to those areas. For specific locations see MDHHS Measles Updates page. This dose is additional to the routine doses given at 12 months of age and older.



Report suspect Measles cases immediately to health department. Case definition, laboratory testing and control measures can be found in the MDHHS Measles Investigation Guidelines. More information is also available at Measles FAQ for Providers. If IG is indicated for PEP of infants, pregnant women, or severely immunocompromised individuals, contact the LHD if needed as doses may be available for distribution.

Communicable Disease Report

2021-2025

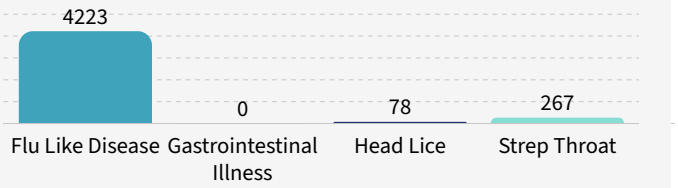
HEALTH DEPARTMENT of Northwest Michigan

Charlevoix, Emmet, Antrim, & Otsego counties

2025 Top Investigated Reportable Diseases

1. Chlamydia (Genital)
2. Camplobacter
3. Lyme Disease
4. Hepatitis C, Chronic

Aggregate Reports of Illness (School Reported)

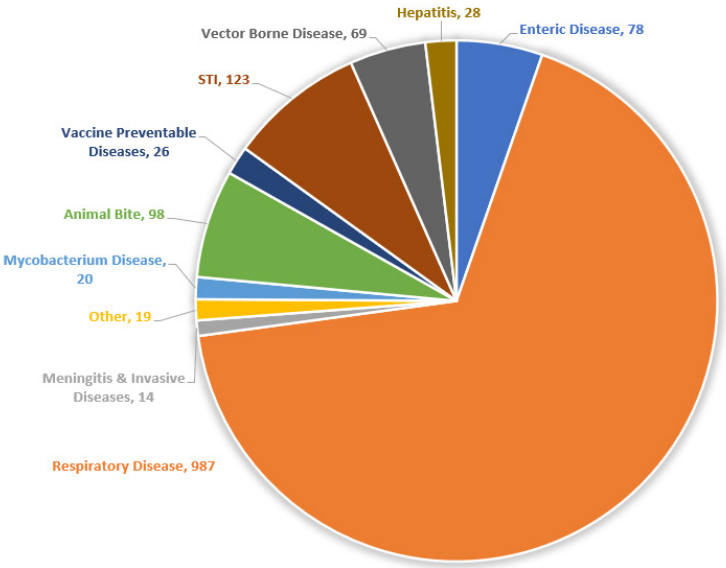


Animal Bites Investigated in 2025

98

Of those, 0 cases had rabies.

Disease Groups



- Enteric Disease (78)
- Respiratory Disease (987)
- Meningitis & Invasive Diseases (14)
- Other (19)
- Mycobacterium Disease (20)
- Animal Bite (98)
- Vaccine Preventable Diseases (26)
- STI (123)
- Vector Borne Disease (69)
- Hepatitis (28)

Additional Resources

[MDHHS Communicable Diseases Information]

[Health Care Professionals Guide to Disease Reporting in Michigan]

[Michigan Emerging Diseases]

HDNW Communicable Disease Information

Health Department of Northwest Michigan
Communicable Disease Report, 2021 - 2025

Enteric Disease	2021	2022	2023	2024	2025
Campylobacter	16	17	27	27	30
Cryptosporidiosis	8	5	4	10	0
Giardiasis	13	6	3	16	2
Listeriosis	0	0	1	0	0
Norovirus	18	24	6	1	18
Salmonellosis	8	10	17	12	19
Shiga toxin-producing Escherichia coli --(STEC)	4	4	6	4	4
Shigellosis	2	0	2	4	0
Yersinia enteritis	1	6	0	8	5
Respiratory Disease	2021	2022	2023	2024	2025
Influenza	12	307	201	310	303
Influenza, Novel	0	0	1	0	0
COVID-19	12,091	10,535	2,413	1,748	684
Meningitis & Invasive Diseases	2021	2022	2023	2024	2025
Meningitis - Aseptic	0	1	2	3	3
Meningitis - Bacterial Other	0	2	1	2	1
Meningococcal Disease	0	0	1	0	0
Streptococcus pneumoniae, Inv	7	10	7	7	10
Other	2021	2022	2023	2024	2025
Blastomycosis	0	2	1	1	0
Botulism - Infant	0	0	0	0	2
Brucellosis	0	1	0	0	0
CPO	0	1	2	4	2
Candida auris	0	0	1	0	1
Coccidioidomycosis	2	3	4	1	0
Creutzfeldt-Jakob Disease	0	0	1	0	2
Cyclosporiasis	1	2	2	0	1
Encephalitis, Post Other	1	0	1	0	0
Encephalitis, Primary	2	0	0	0	0
Guillain-Barre Syndrome	0	0	1	1	0
Histoplasmosis	3	2	1	3	1
HIV/AIDS, Adult	1	1	5	0	1
Kawasaki	1	0	0	0	0
Legionellosis	1	0	3	2	2
Q Fever Acute	0	0	2	0	0

Health Department of Northwest Michigan
Communicable Disease Report, 2021 - 2025

Other (Continued)	2021	2022	2023	2024	2025
Streptococcal Dis, Inv, Grp A	3	3	12	6	5
Streptococcus pneumoniae, Drug Resistant	0	1	0	0	0
Trachoma	0	0	1	0	0
Unusual Outbreak or Occurrence	0	4	45	14	1
VISA	0	0	0	0	1
Vibriosis - Non Cholera	1	0	0	0	0
Animal Bite	**2021**	**2022**	**2023**	**2024**	**2025**
Rabies Positive Animals	0	1	1	0	0
Rabies: Potential Exposure & PEP	47	97	70	83	98
STI	**2021**	**2022**	**2023**	**2024**	**2025**
Chlamydia (Genital)	209	213	184	137	105
Gonorrhea	32	17	16	10	10
Syphilis - Early Latent	3	1	3	2	2
Syphilis - Primary	1	2	2	0	0
Syphilis - Secondary	1	0	2	1	1
Syphilis - Unknown Duration or Late	1	2	2	7	5
Mycobacterium Disease	**2021**	**2022**	**2023**	**2024**	**2025**
Latent Tuberculosis Infection	6	10	5	9	14
Nontuberculous Mycobacterium	8	3	1	3	6
Tuberculosis	2	0	1	1	0
Vaccine Preventable Diseases	**2021**	**2022**	**2023**	**2024**	**2025**
Chickenpox (Varicella)	0	2	12	2	3
H. influenzae Disease - Inv.	1	4	3	2	5
Pertussis	0	1	0	17	11
Shingles	8	2	2	1	3
VZ Infection, Unspecified	9	3	7	2	4
Vector Borne Disease	**2021**	**2022**	**2023**	**2024**	**2025**
Anaplasmosis	0	0	1	1	4
Babesiosis	1	0	0	0	0
Ehrlichiosis, Anaplasma phagocytophilum (2009-2019)*	0	0	0	0	0
Ehrlichiosis, all types	0	0	1	0	0
Lyme Disease	2	4	32	34	63
Malaria	1	0	0	0	0
West Nile Virus	0	0	0	0	2
Hepatitis	**2021**	**2022**	**2023**	**2024**	**2025**
Hepatitis A	0	1	0	0	2
Hepatitis B, Acute	1	2	0	2	0
Hepatitis B, Chronic	4	5	5	2	6
Hepatitis C, Acute	2	1	1	1	0
Hepatitis C, Chronic	36	28	24	20	20
Hepatitis E	0	0	0	1	0
Aggregate Reports of Illness (School Reported)	**2021**	**2022**	**2023**	**2024**	**2025**
Flu Like Disease	3,913	8,119	6,518	5,651	4,223
Gastrointestinal Illness	37	10	133	48	0
Head Lice	123	101	129	130	78
Strep Throat	115	231	941	639	267

HEALTH DEPARTMENT of Northwest Michigan

MEMORANDUM

Date: **May 5, 2026**

To: **Board of Health**

From: **Shannon Klonowski, Health Officer**

Re: **ADA Compliance**

On April 24, 2024, the Federal Register published the Department of Justice's final rule, updating its regulations for Title II of the Americans with Disabilities Act (ADA). The final rule has specific requirements about how to ensure digital content and mobile applications (apps) are accessible to people with disabilities.

The Department of Justice set specific requirements for digital and mobile app accessibility due to State and local governments providing many of their services, programs, and activities through websites and mobile apps. When these websites, documents, and mobile apps are not accessible, they can create barriers for people with disabilities. Inaccessible websites, documents, and apps can make it difficult or impossible for people with disabilities to access government services, like ordering mail-in ballots, getting tax information, joining or fully participating in civic or other community events like town meetings or programs at their child's school.

State and local governments have a deadline to comply based upon the population size they serve. 50,000 or more persons have a deadline of April 24, 2027, while special district governments or organizations with less than 50,000 persons have until April 26, 2028.

The Web Content Accessibility Guidelines (WCAG) Version 2.1, Level AA is the technical standard for state and local governments' web content and mobile apps. The Health Department of Northwest Michigan (HDNW) is participating in ADA training from the State to help us better understand the requirements.

When HDNW's website was redone a couple of years ago, the company we hired to do the work was very conscious about ADA compliance, and therefore, our website complies. The pieces that we are working to update include online applications and forms that are in PDF format, available on our website. In addition, PowerPoint slides will need to be made ADA compliant, using approved fonts and avoiding certain colors combinations that may be difficult for color blind individuals to see.

HDNW is committed to ensuring that our materials meet the newest ADA requirements, and our team is already hard at work making sure this happens by the deadline.

MEMORANDUM

Date: **May 5, 2026**

To: **Board of Health**

From: **Melissa Hahn, MPH, RN Director of Family Health**

Re: **Healthy Futures Newborn Home Visits**

Healthy Futures Newborn Home Visits
Every child deserves a healthy future.

Healthy Futures is a collaboration of Munson Healthcare, health departments throughout northern Michigan, and health care providers across the region. Together, we serve ALL households who live in participating counties, no matter their insurance status, income level, or any other circumstance. The overall goals of the program are to increase access to care, immunization rates, and breastfeeding duration rates. All new families need support. Healthy futures connects families to trustworthy information and local resources.

All pregnant women in our jurisdiction can voluntarily sign up for healthy futures during their prenatal visits with an OB/GYN, or during a WIC appointment at the Health Department. The Healthy Futures program links moms to a local health department nurse. During her pregnancy, the nurse connects with mom via phone to check in and answer any questions she may have. The nurse offers support, education, and ensures that mom is established with a doctor. Additionally, the program mails or texts personalized newsletters to families based on the expected due date or a child's age. This continues until the child is 5 years of age.

Once an infant is born, the Healthy Futures nurse can visit a new family at their home – at no cost to the family. The time spent in a hospital postpartum is minimal; new mothers are exhausted and overwhelmed; therefore, the education the hospital provides is hard for them to comprehend or remember. Health Department nurses reach out 3-5 days after delivery to support mom via phone and offer a home visit. During a typical home visit, the registered nurse will weigh the newborn, answer any questions the parents may have about feeding, sleep, and other common concerns; the nurse also offers basic Breastfeeding support, assesses the mother to monitor for high blood pressure or bleeding concerns, and assesses the family's overall needs, determining if there are other community resources that could benefit the family or child. This program reflects our community's commitment to children and is available to all families from all income levels and backgrounds.

In 2025 Health Department nurses did 84 newborn home visits for families that were not enrolled in any other traditional home visiting services, through the Health Futures Newborn Home Visits program.

HEALTH DEPARTMENT of Northwest Michigan

MEMORANDUM

Date: **May 5, 2026**

To: **Board Of Health**

From: **Jeremy Fruk, Environmental Health Director**

Re: **Wickes Manufacturing TCE Plume Site and Well First Policy Update**

The Wickes Manufacturing TCE Plume Site consists of a plume of TCE in the groundwater that extends from the release area in Mancelona and flows to the northwest, beyond Shanty Creek Road. TCE is a man-made, cancer-causing chemical that was used routinely in parts degreasers. TCE was released to the ground prior to the mid-1960s at this former auto part manufacturing facility. Investigations into groundwater contamination around the former Wickes Manufacturing site, located in Mancelona, began in the 1980s.

A multi-agency and community effort has been working to track the spread of pollution that has affected 13 trillion gallons of underground water, which is the primary source of drinking water in the area. Collaborating with the Michigan Department of Environment, Great Lakes, and Energy (EGLE), the health department has conducted routine sampling of wells potentially impacted by groundwater contamination and continues to identify homes with potential vulnerabilities. In 2025, HDNW currently conducted 30 samples in areas that are affected or potentially affected by the Wickes TCE plume.

The plume is observed to expand at a rate of approximately 300-400 feet per year and will continue to expand the plumes footprint over time. To help address the expanding footprint of the plume HDNW's Well First Policy was revised in 2017 and expanded the policy to Custer Township sections. The Well First Policy requires that before obtaining building permits to develop properties, the drinking water well must be installed and tested for TCE. If HDNW identifies that a site cannot support pollution-free drinking water well, the health department will not issue other permits that allow construction until municipal water is connected to the property. By understanding conditions before a property is developed for residential use, HDNW can prevent unsafe drinking water from unintentionally becoming accessible.

As EGLE has continued to update current data regarding the TCE plume, it is apparent that the plume will be expanding to Section 31 Kearny Township and Section 7 of Custer Township in the future. EGLE has requested HDNW update the Well First policy to address future concerns.

The health department, by working with regulatory agencies and area partners, has built strong relationships and a common mission to prevent risks to area residents. HDNW continues to work together to educate the public and to stay engaged in the many activities revolving around the TCE plume responses and remedies.

2024

WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

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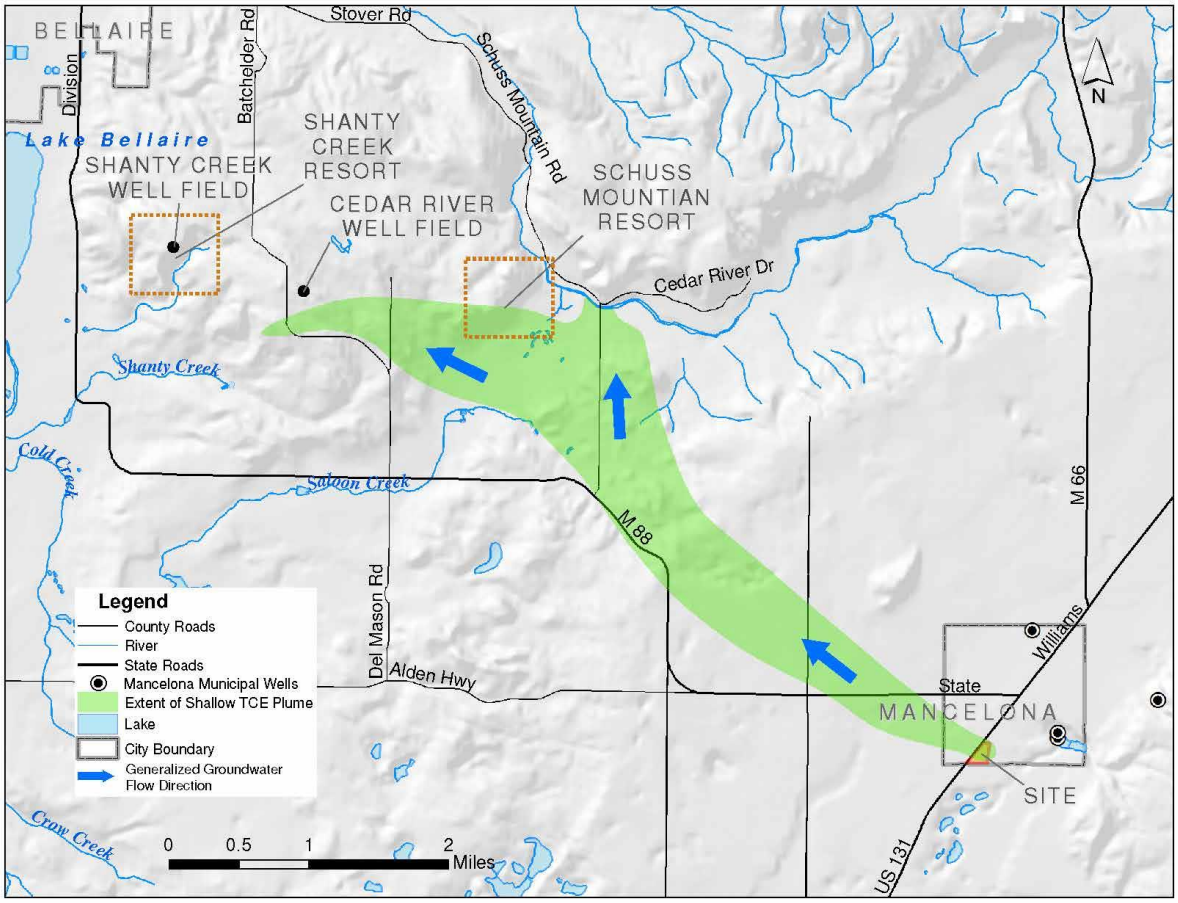

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FACT SHEET 2: TCE IN GROUNDWATER IN ANTRIM COUNTY

FACT SHEET 3: KNOWING THE EXTENT

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HEALTH DEPARTMENT of Northwest Michigan

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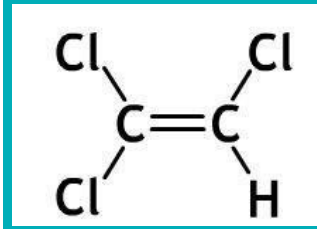
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 1 - TRICHLOROETHYLENE

WHAT IS TCE?

TCE is a manmade substance that was first produced in the U.S. in about 1925. TCE was once used as an anesthetic for surgery and was used as a dry-cleaning solvent until the 1950s. TCE was widely used as a metal parts degreaser and as an industrial cleaner.



TCE is composed of carbon (C), chloride (Cl) and hydrogen (H). It is a colorless liquid that evaporates quickly in the air and dissolves in groundwater. TCE quickly dissipates to the air when it reaches surface water such as a stream, wetland or lake.

If there is a release of TCE into the air, soil, or groundwater, the rate it dissipates varies. When TCE is released into the air, it breaks down quickly. When TCE is released into soil or groundwater, it breaks down slowly. Once TCE enters groundwater, it may remain for a long time, since it cannot readily evaporate. TCE does not build up or bio-accumulate significantly in plants or animals.

WHAT ARE THE HUMAN HEALTH RISKS OF TCE?

TCE is a known human cancer-causing agent. Long term exposure can adversely affect liver, kidney, immune system and/or central nervous system function. Effects of TCE can result from low-level exposure over long periods of time (many years) or over short time frames at high concentrations.

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HOW DOES EXPOSURE OCCUR?

Exposure to TCE occurs when:

- TCE contaminates drinking water supplies,
- TCE vents to surface water, and/or
- TCE vapors enter buildings.

These exposure routes are called pathways. When looking at exposure to humans and/or the environment, all pathways are investigated to determine which are complete. A complete pathway means TCE has contaminated the water and/or air and there is the potential for exposure to the TCE. A pathway is not complete if there is a physical or other barrier that prevents exposure.

WHAT LEVELS OF TCE ARE SAFE?

Toxicology studies have established levels of TCE that are protective to humans and the environment. These studies are based on levels measured in parts per billion (ppb). For instance, 1 ppb is equal to 1 gallon of TCE dissolved in 1 billion gallons of water. Based on these scientific studies, the following maximum safe, allowable levels have been established for groundwater:

- TCE in drinking water is safe below 5 ppb.
- TCE in groundwater below 200 ppb can safely flow into or vent to surface water, such as rivers, lakes or wetlands.
- TCE dissolved in groundwater at levels as low as 0.07 ppb to 6.1 ppb at the water table are used to assess whether additional investigation of the vapor exposure pathway is warranted.

The primary pathway of unacceptable exposure risks from the TCE release at the former Wickes Manufacturing Plant are drinking water and soil vapors. There are no known exposure risks related to TCE at the resorts in the area (e.g., snow making, irrigation water, etc.).

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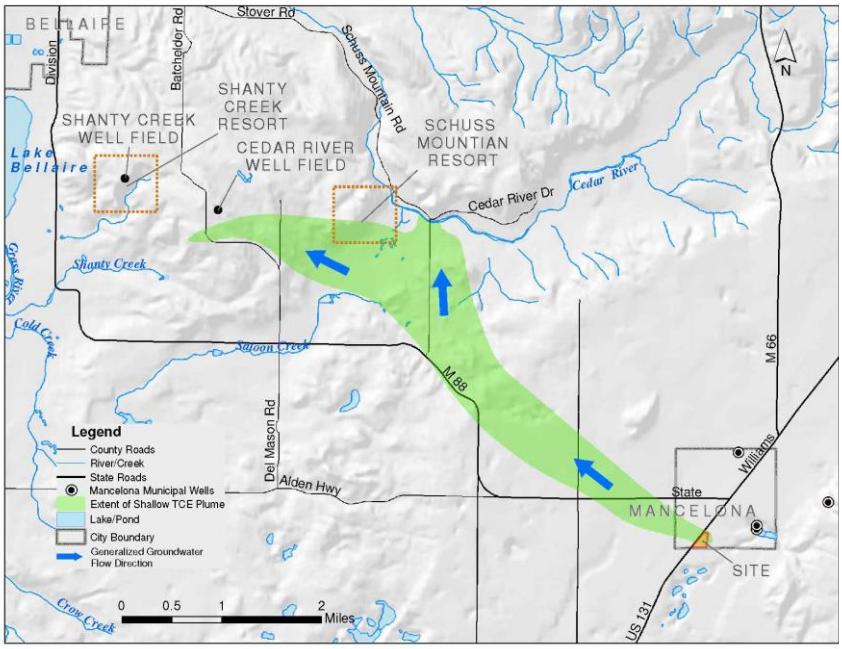
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 2 – TCE IN GROUNDWATER IN ANTRIM COUNTY

HISTORY

Mount Clemens Industries, Inc., later known as Wickes Manufacturing, used TCE in vapor degreasers as part of the manufacturing of auto parts in Mancelona from 1947 to 1967. Waste containing TCE was discarded on the ground and in lagoons, where it seeped through the soil and became dissolved into the groundwater. Both companies went out of business many years ago. As a result, EGLE funds have been allocated to address the TCE in groundwater.



EARLY RESPONSE

In order to prevent exposure to TCE in residential wells in the Mancelona area, EGLE worked with the community to found and fund the Mancelona Area Water and Sewer Authority (MAWSA). MAWSA operates the public water system that now provides safe drinking water to residences affected by TCE.

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WHAT WE KNOW

There is residual TCE left in the soil, soil vapors and groundwater at the former Wickes Manufacturing Plant.

TCE moves from the former Wickes Manufacturing Plant in Mancelona through two townships, under Schuss Mountain Resort, and is now moving toward Shanty Creek Resort and Lake Bellaire. Some TCE also enters the Cedar River.

TCE in groundwater extends approximately 6.5 miles and is up to 1.5 miles wide. TCE has been detected in groundwater in some locations as deep as 500 feet below the ground. The exact depth of TCE in groundwater at any given location depends on the local ground topography (hills and valleys).

TCE in groundwater has affected over 500 shallow residential drinking water wells and some former shallow community drinking water supply wells that served Schuss Mountain Resort.

The drinking water wells used by MAWSA today are regularly tested and provide safe drinking water to area residents that is free of TCE.

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 3 - KNOWING THE EXTENT

GROUNDWATER MONITORING

A total of 142 permanent monitoring wells have been installed between the former Wickes Manufacturing Plant in Mancelona and now into Shanty Creek Resort. Monitoring wells are used to determine the rate and direction of groundwater flow, where TCE occurs (Shallow, Intermediate, and Deep Zones), and how TCE levels in groundwater change over time. The data gathered from the monitoring wells are then used to assess the current extent of TCE in groundwater, where TCE may be found in the future, and identify where additional investigation may be needed.

Monitoring well data collected over the last 25 years show that the natural flow of groundwater below the former Wickes Manufacturing Plant is to the west, away from the public supply wells.

ONGOING RISK EVALUATION

- Each year, during the spring and fall, EGLE collects groundwater samples from select monitoring wells and sends them for laboratory analysis. Since 2004, 1,920 monitoring well samples have been collected and analyzed. Monitoring well sampling of the groundwater is critical to providing "early warning" of TCE movement in groundwater.
- EGLE contracts the Health Department of Northwest Michigan to collect water from residential drinking water wells. On average, 45 residential drinking water wells are sampled each year. This residential drinking water well sampling helps us ensure no one is exposed to TCE.
- Each year, during spring or fall, water from the Cedar River, Saloon and Shanty Creek, and surrounding wetlands is collected and analyzed in a laboratory. This water sampling ensures that TCE levels in groundwater entering the river, creeks and wetlands are below levels determined to be safe to the environment.

HOW HAVE WE INVESTIGATED GROUNDWATER?

The occurrence of TCE in groundwater has been defined by numerous subsurface investigations. In addition to recurring monitoring well and residential well sampling activities that are performed each year, additional investigations performed include:

- Soil samples are used to define soil characteristics, soil layers, and the vertical position of the water bearing zones.
- Groundwater samples collected at relatively close spaced intervals from temporary bore holes have been used to define the occurrence of TCE in Shallow, Intermediate, and Deep Zones. This technique is called vertical aquifer sampling (VAS). Since 2004, a total of 383 VAS groundwater samples have been collected to investigate the extent of TCE in groundwater.
- Geophysical investigations assess soil layering "indirectly". Seismic surveys, which measure the soil response to ground vibration, have helped to establish the thickness and continuity of soil layers. Nearly 40,000 linear feet of seismic surveying has been completed.
- Pumping tests, which monitor the effect of pumping at existing supply wells like the Cedar River Well Field on surrounding monitoring wells, are used to determine how or if water moves vertically between the Shallow, Intermediate, and Deep Zones. Test results have been used in 3-D models to identify ways to minimize risk of exposure to TCE in groundwater.

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 4 - HOW DOES TCE MOVE IN GROUNDWATER?

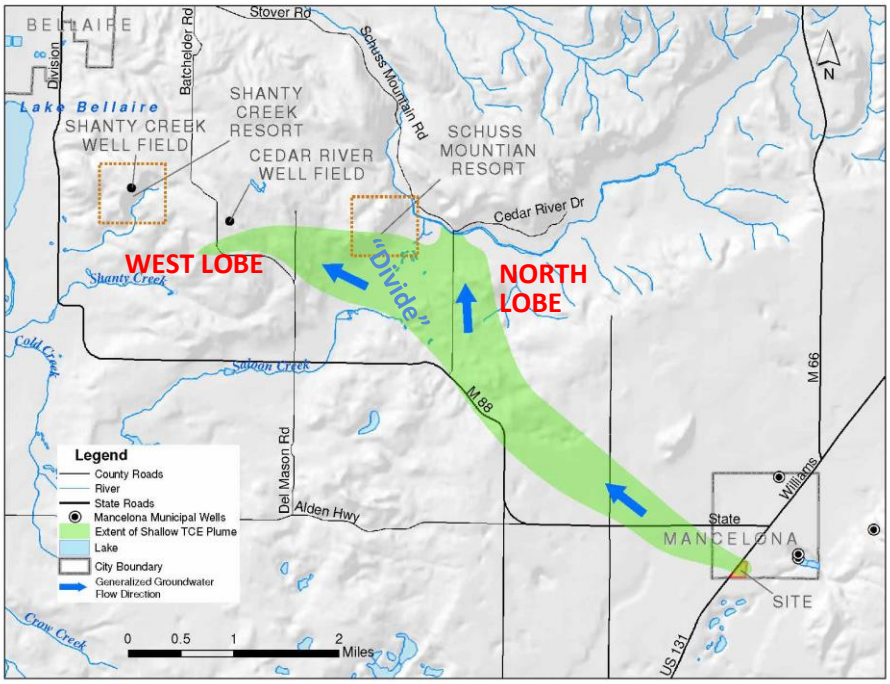
TCE MOVEMENT

TCE is dissolved in groundwater at the former Wickes Manufacturing Plant. Because it is dissolved, it moves or flows with groundwater. Groundwater flows "downhill" from areas of high groundwater in Mancelona, to areas of low groundwater to the west-northwest (towards the Cedar River and Lake Bellaire).

HOW DOES TCE MOVEMENT AFFECT TCE LEVELS?

Groundwater conditions sometimes promote the breakdown of TCE into less harmful chemicals. Under certain conditions, the amount of TCE in groundwater then decreases over time.

TCE breakdown does not occur significantly in the groundwater under this portion of Antrim County; however. The levels of TCE in groundwater decrease only as the TCE moves and spreads out over time, or when TCE gets temporarily stuck or adsorbed onto silt or clay in the soil.



WHERE IS THE TCE GOING?

Much like hills that separate one river from another, groundwater that flows over a broad area in soil sometimes separates at a groundwater divide - beyond this point, some groundwater flows to one low spot or another.

West Lobe is a term used to describe the TCE in groundwater moving below Schuss Mountain Resort toward Shanty Creek and Lake Bellaire. TCE moving in this direction is heavily influenced by the headwaters of Shanty Creek, which is located to the south of Shanty Creek Resort. The TCE in groundwater is not likely to reach Lake Bellaire for many years and is not expected to flow beyond Lake Bellaire. The TCE in groundwater that may enter Lake Bellaire or Shanty Creek in the future is predicted to be at concentrations below levels determined to be safe for the environment.

North Lobe is a term used to describe the TCE in groundwater that flows into or vents to the Cedar River. TCE has been detected in the Cedar River but it quickly evaporates from the river. It has not been detected in the river downstream of the venting area, nor has it been detected in groundwater north of the river.

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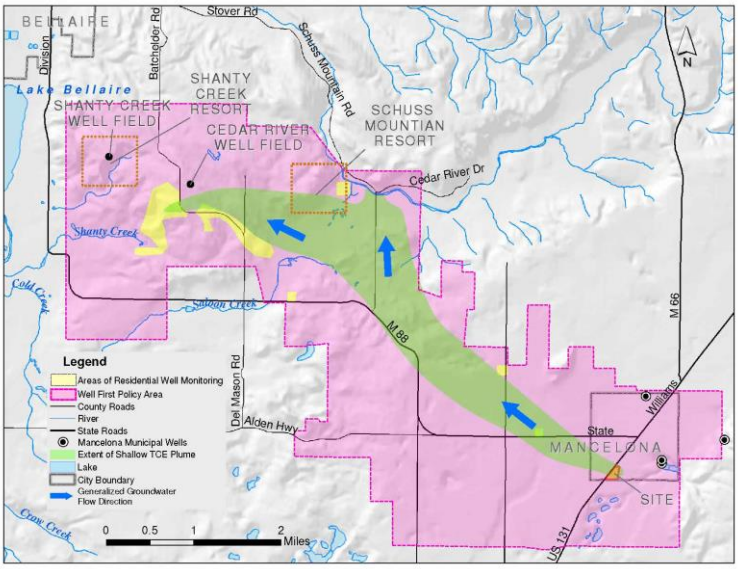
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 5 - WHAT IS BEING DONE?

CURRENT ACTIONS

EGLE monitors TCE levels in groundwater to understand where and when potential exposures might occur. At-risk residential wells are sampled regularly by the Health Department of Northwest Michigan (HDNW). If TCE is detected in a residential well. The residence is placed on bottled water, that well is abandoned, and the home is hooked up to the public water supply. The HDNW implements the Well First Policy to ensure new wells are not exposed to TCE (See Fact Sheet 8, Well First Policy).



DID YOU KNOW?

EGLE has invested approximately $15 million in the community to fund the Mancelona Water and Sewer Authority (MAWSA).

EGLE has also invested nearly $12 million to:

- **Extend water mains to new areas,**
- **Hook up homes to new/existing water mains if TCE is detected in the residential well,**
- **Provide funding to the HDNW to sample residential wells near the edges of TCE impacted groundwater,**
- **Provide bottled water to residents until they are hooked up to the public water system when TCE is identified in their well water at a detectable level (even if less than 5 parts per billion),**
- **Expand the current monitoring well network and collect groundwater samples twice a year to monitor the location of TCE in groundwater,**
- **Monitor the effect of pumping on the groundwater system to identify engineering alternatives,**
- **Sample groundwater and surface water at the Cedar River where TCE in groundwater vents to it,**
- **Sample soil vapor near the former manufacturing site and areas where TCE is detected in shallow groundwater to monitor and, if necessary, mitigate potential exposure,**
- **Annually update technical reports.**

For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

CLEANUP OPTIONS

Options for cleaning up the estimated 13 trillion gallons of groundwater contaminated with TCE were studied in 2008 (EGLE), in 2014 (University of Detroit Mercy), and in 2015 (Michigan Technological University). Options included pumping and treating the groundwater, methods to destroy TCE (such as injecting or recirculating chemicals or adding biologic treatments to the groundwater) or extending public water to ensure safe drinking water.

The cost for active remediation ranged from $22 million to $99 million, with none of the technologies guaranteeing complete cleanup of the TCE and all required a minimum of 20+ years of operation and maintenance costs.

All studies to date show the safest, most viable and cost-effective means to assure no unacceptable exposure to TCE is to provide public water.

EGLE remains committed to considering new and emerging technologies.

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 6 - WHAT'S NEXT?

ONGOING ACTIVITIES

EGLE continues to work with the Mancelona Area Water and Sewer Authority, its consultant, and area stakeholders. Recent steps include:

- Collaborative efforts to fund and construct additional storage at the Cedar River Well Field (CRWF) to allow use of these existing wells, piping, and pumps to continue.
- Connection of a high-pressure water main from the Mancelona supply wells to the CRWF.
- Expanded public water supply along Shanty Creek, Deskin Road and Windy Hill Drive.
- Ongoing EGLE funded monitoring of existing residential wells by the Health Department of Northwest Michigan (HDNW).
- Ongoing EGLE monitoring to track the movement of TCE in groundwater.
- Ongoing EGLE sampling to evaluate vapor intrusion risk.
- Installation of monitoring wells to ensure that an adequate "early warning" detection system is in place as the TCE in groundwater moves west.
- The HDNW implements the Well First Policy to ensure new wells are not installed where TCE is present (See Fact Sheet 8, the Well First Policy.)
- Performance of additional investigations such as the Shanty Creek headwaters hydrologic study to quantify volume of groundwater discharging to the Creek.
- Continued evaluation of soil vapor intrusion pathway in Mancelona and Schuss Mountain Area.

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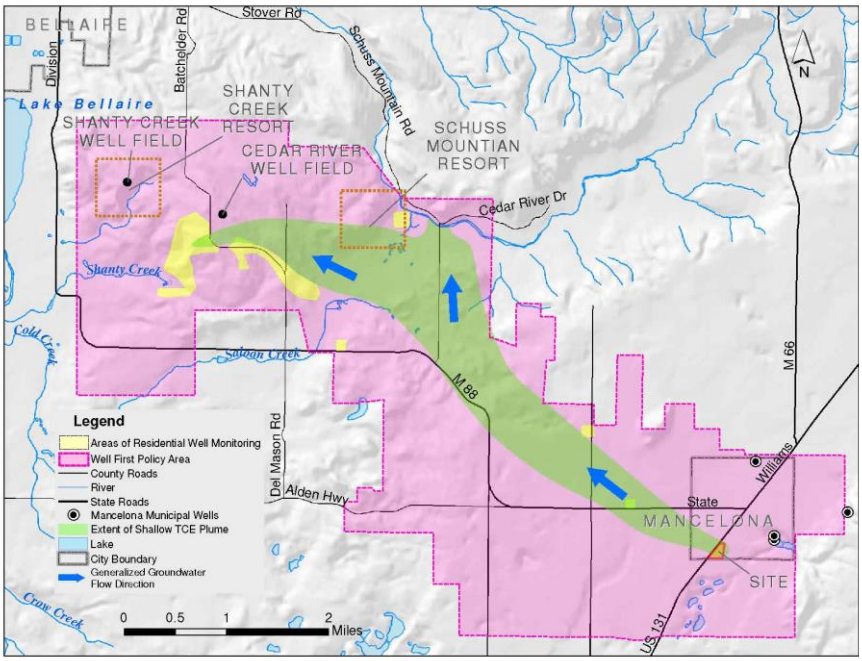

WHAT WELLS ARE AT RISK?

TCE in the groundwater is moving toward the location of the CRWF and residential wells near Deskin Road and Windy Hill Drive.

- **CRWF wells withdraw public supply water from <u>below</u> the Shallow and Intermediate Zones of groundwater that contain TCE. Silts and clays, which help to limit vertical movement of groundwater, are present near these wells and may keep the TCE in the Shallow and Intermediate Zones from entering the public supply.**
- **The Shanty Creek Well Field wells supply community drinking water to the resort. Some of the Shanty Creek well screens withdraw water from the same depth interval where TCE is found in the Shallow Zone. However, much more groundwater flows into Shanty Creek, located to the south of the resort, than is withdrawn from this well field. TCE in groundwater appears to be migrating toward the creek, not toward this well field.**
- **Residential Wells typically draw water from similar depths where Shallow Zone TCE is known to occur in groundwater. Depending on the well depth, residential wells may be vulnerable to impact as TCE moves in groundwater toward them. Wells west of Shanty Creek Road near the area of Deskin Road will continue to be monitored into the future.**

For additional information please see the Mancelona Township Library, Bellaire Public Library, or the Antrim County Building in Bellaire.

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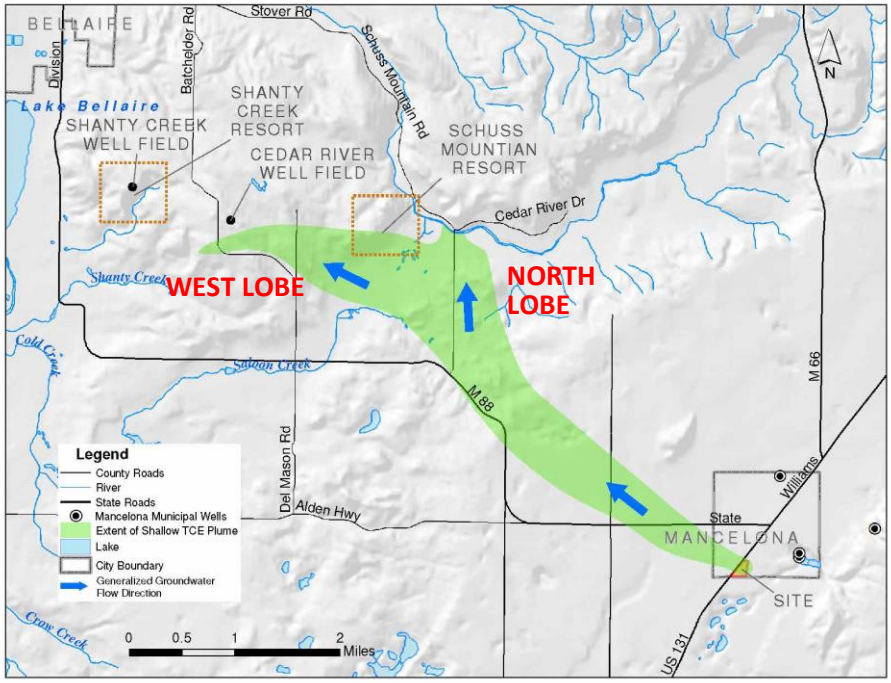
FORMER WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 7 - HOW FAST IS TCE MOVING TO THE WEST?

TCE IN THE WEST LOBE

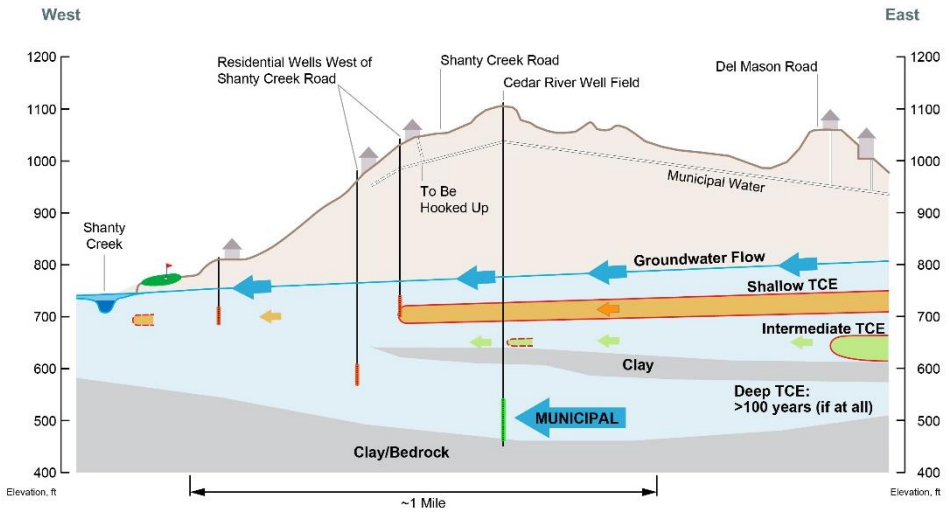
TCE extends vertically within the groundwater in three different zones; the Shallow, Intermediate, and Deep Zones.

Groundwater generally moves to the northwest in all three zones toward Lake Bellaire, but it locally flows into the Cedar River and Shanty Creek. In the North Lobe area TCE will continue to move with groundwater toward and vent to the Cedar River. In the West Lobe TCE in groundwater will continue to move toward Shanty Creek in the Shallow and Intermediate Zones, and it will pass near, but above, the location of the Cedar River Well Field.



EGLE continues to work with the community to expand the public water system to ensure safe drinking water is available as the West Lobe turns and moves toward Shanty Creek.

RATE OF MOVEMENT



Groundwater (and thus, TCE) moves at different rates at different depths:

- **Shallow Zone:** TCE moves at a rate of 330 to 525 feet per year.
- **Intermediate Zone:** TCE moves at a rate of approximately 100 feet per year.
- **Deep Zone:** TCE levels have been declining and TCE has not been found to spread from one well to another in the Deep Zone. Based on groundwater flow rates, TCE likely moves at a rate of less than 50 feet per year.

The assumptions we use to determine TCE groundwater flow rates and timelines are based on the extensive investigations and long-term monitoring that have been performed to date.

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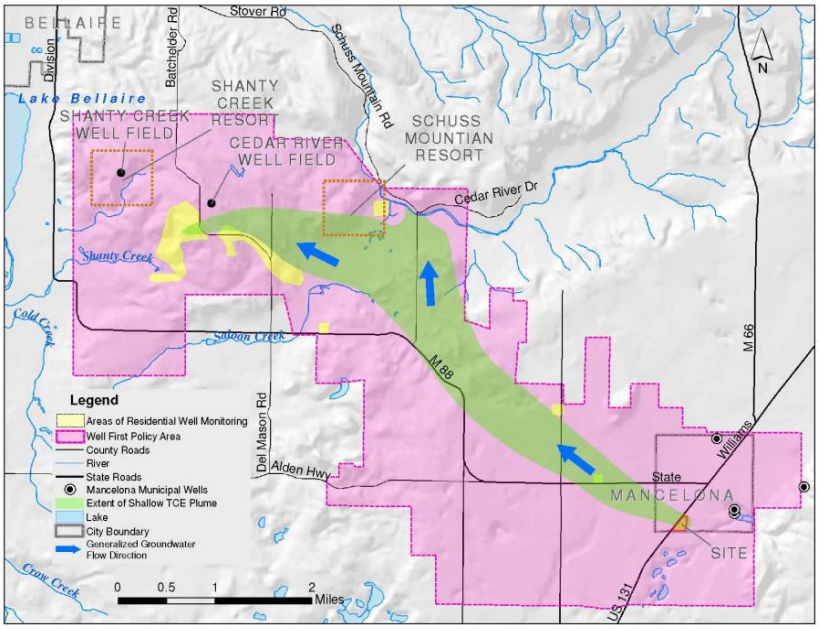
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 8 - WHAT IS THE WELL FIRST POLICY?



HOW WELL FIRST POLICY WORKS

The Well First Policy prevents the installation of new wells where public water is available. Connection to public water is required when it becomes available. Where public water is not available, the policy outlines well construction and sampling requirements, including:

- **Targeted Well Depth – working with EGLE and well drillers to target screen depths accounting for regional and site-specific geology and using the most current information available regarding known groundwater quality.**
- **Drilling Technique – mud rotary drilling methods must be used, and the well must be grouted (or sealed) along the entire length of the well casing. The well is developed by pumping and surging (prohibiting well development by air).**
- **Water Quality Sampling – groundwater is collected and analyzed at a laboratory for volatile organic compounds (which includes TCE) before use.**
- **Final Inspection – HDNW final inspection prior to use.**
- **Connection to Public Water – property must connect if public water becomes available.**
- **Well Abandonment – all existing approved or unapproved wells must be properly abandoned once connected to public water.**

WELL FIRST POLICY

The Health Department of Northwest Michigan (HDNW) implemented the Well First Policy in 2005 to assure that any water supply well installed outside the public water system service area was safe for use in accordance with Part 127 of Act 369, P.A. 1978 and Act 399, P.A. 1976, to protect the public health and prevent the unintended consumption of contaminated drinking water.

This policy is designed to be an institutional control to prevent exposure to TCE in groundwater. The area affected by the Well First Policy is regularly reviewed and modified as TCE in groundwater moves and information about the location and nature of the TCE in groundwater is updated.

EGLE and HDNW work together to monitor existing residential wells and share information with the community to allow the Well First Policy area to be expanded based on TCE in groundwater data.

The latest expansion of the Well First Policy was approved by the HDNW in February 19, 2018.

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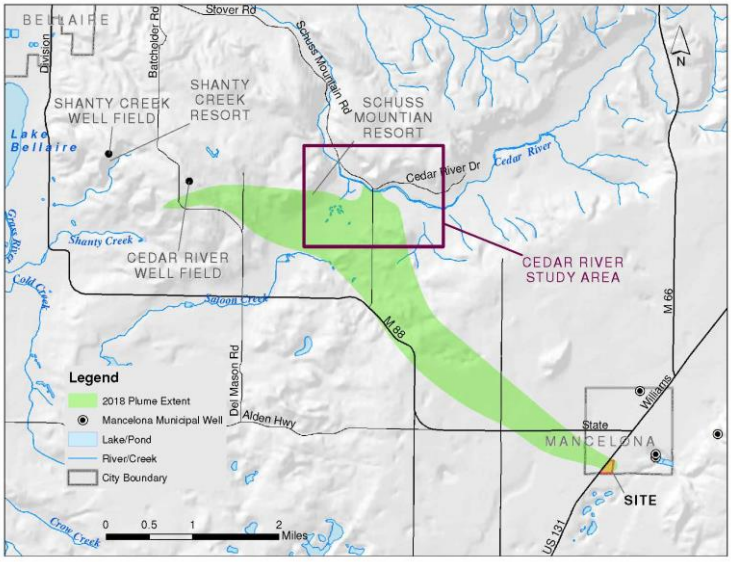
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 9 - TCE AND THE CEDAR RIVER

TCE IN SURFACE WATER

Water Quality Standards have established levels of TCE that are protective to surface water and the organisms that live in them. Based upon these scientific studies:

- The maximum allowable level of TCE in groundwater that can safely enter surface water, such as rivers or wetlands, is 200 parts per billion (ppb).
- The maximum allowable level of TCE in surface water like the Cedar River and nearby springs in its floodplain for aquatic life is 1,800 ppb. For human health it is 370 ppb, when not used as a drinking water source.



WHAT HAPPENS TO TCE?

Two things happen as TCE in groundwater moves toward and enters the river:

- Some TCE begins to break down in groundwater near the river. This decreases TCE levels entering the river.
- Once in the river, TCE readily evaporates into the air. There is no evidence based on annual sampling that TCE remains in the waters of the Cedar River for a significant time.

ARE TCE LEVELS UNSAFE?

- **TCE levels in groundwater collected annually near the south bank of the Cedar River are less than 100 ppb; well below maximum allowable level (200 ppb).**
- **TCE levels detected in the Cedar River have not been above 30 ppb – also well below the maximum allowable levels.**
- **TCE is detected in the river where groundwater vents to it but has not been detected further downstream because TCE evaporates readily once it enters the river.**

Studies of aquatic life conducted where TCE vents to the Cedar River in 1991 and 2013 scored the aquatic health of the river as "good" to "excellent." No adverse effects related to TCE have been detected in the river to date.

DOES TCE ENTER THE RIVER?

The North Lobe of TCE in groundwater does flow into, or vents, to the Cedar River. Here's how we know this:

- Measurements show that groundwater enters the river from both the north and south sides of the river. TCE would have to move against the flow of groundwater to move past and north of the river.
- Measured gradients show that the vertical flow of groundwater is directed upward near (and into) the river. This occurs with a measurable increase in the volume of water in the Cedar River in this area. These data indicate that groundwater flows into the river.
- The Cedar River and groundwater entering it are sampled every year to monitor TCE levels. TCE has been detected in the Cedar River where TCE is present in the groundwater to the south, but TCE has not been detected in groundwater north of the river.

Michigan Department of Environment, Great Lakes, and Energy
Contact: Janice Adams at 989-619-4211
Email: adamsj1@michigan.gov

Health Department of Northwest Michigan
Contact: Casey Clement at 231-533-8670
Email: WickesTCE@nwhealth.org

For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

EGLE

HEALTH DEPARTMENT of Northwest Michigan

December 2024

2024

WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 10 – WEST LOBE SURFACE WATER

WHICH SURFACE WATER FEATURES?

Groundwater and surface water in the area of the West Lobe ultimately drain west toward Lake Bellaire and the Grass River. Groundwater movement is significantly influenced by:

- Shanty Creek, whose headwaters are located to the south of Shanty Creek Resort.
- Saloon Creek, with its headwaters located to the south of Schuss Mountain.

The movement of groundwater to these creeks influences the movement of TCE in the West Lobe, just as the Cedar River influences the movement TCE in the North Lobe.

HOW MUCH INFLUENCE CAN THESE CREEKS HAVE?

By measuring the width and depth of a creek and how fast water flows through its profile, the amount of water that is moving through the stream over time (discharge) can be determined. By comparing seasonal discharge at multiple profile locations, EGLE has assessed the rate that groundwater moves into Shanty Creek.

Near the source of Shanty Creek, the amount of water increases quickly due to a nearly 3,200 gallon per minute (gpm) continuous influx of groundwater. For comparison - large-scale pumping wells in the area will typically operate at up to 1,000 gpm but only for short periods (1 to 2-hour cycles).

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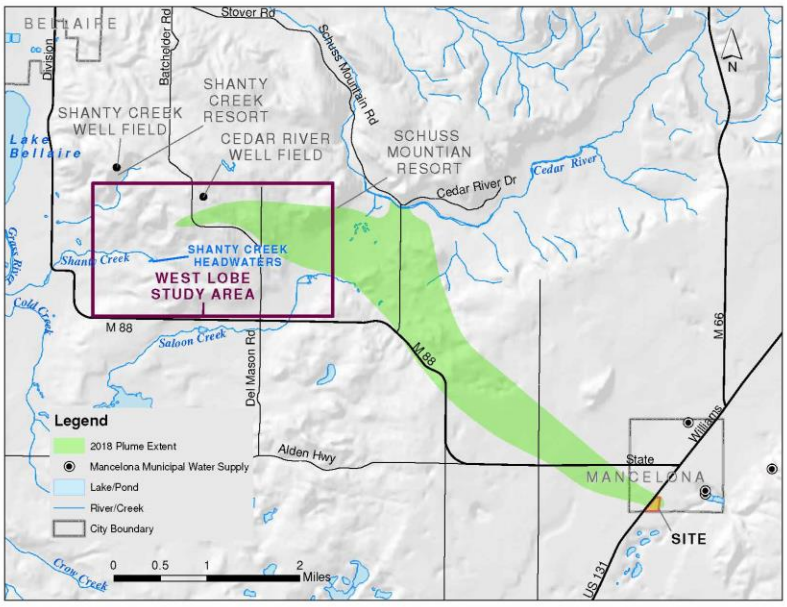

DOES TCE ENTER THE CREEKS?

TCE has not been detected in surface water samples collected from Saloon Creek.

- No TCE has been detected in samples collected from surface water and shallow groundwater near the headwaters. Samples are now collected annually to monitor water quality emanating from its headwaters.
- In this area, TCE has been detected typically at depths of 50 to 200 feet below the water table and continues to move past Saloon Creek in the West Lobe.
- The movement of groundwater toward Saloon Creek's headwaters exerts enough influence to help divert some groundwater (and TCE) away from the Cedar River to form the West Lobe.

Shanty Creek exerts a significant influence on the movement of TCE in groundwater.

- Near Del Mason Road, the West Lobe begins to bend away from a northwest-directed trajectory (i.e., toward the Cedar River Well Field and the Shanty Creek Resort's well field). The West Lobe begins to move to the west and even to the west-southwest.
- TCE has not yet been detected in sentinel monitoring wells between the West Lobe and Shanty Creek.

For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

EGLE

HEALTH DEPARTMENT of Northwest Michigan

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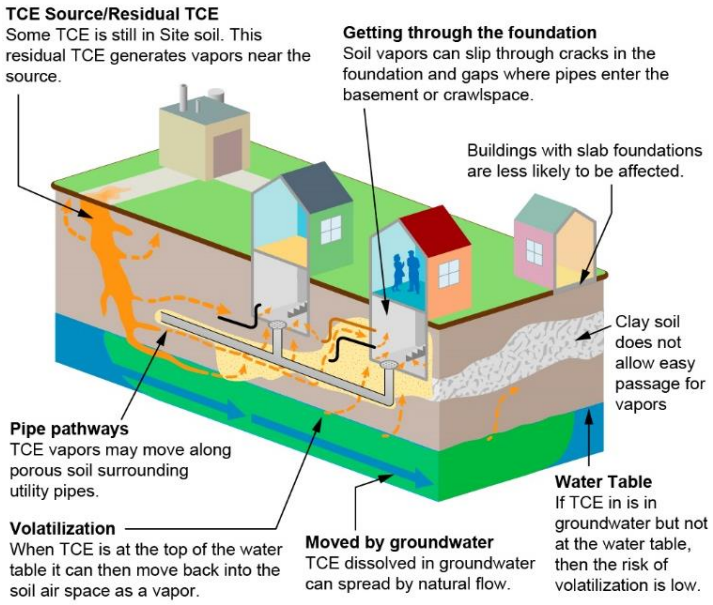
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 11 – VAPOR INTRUSION

WHAT IS VOLATILIZATION?

TCE is a volatile organic compound, meaning that it readily changes from a liquid to a vapor. This characteristic causes TCE to move from surface water bodies, like the Cedar River, to the air. This same property works underground; TCE dissolved in groundwater, or TCE that is "stuck" on to the soil, can become a vapor and move into the air space between soil grains.

TCE in soil below the former manufacturing area has low levels of TCE in it. This "residual" TCE moves slowly into the air space below the former manufacturing building. When TCE is dissolved in the groundwater at the water table, it can also move back into the soil air space as a vapor. Soil vapors that contain TCE are referred to as the "vapor cloud".



WHAT IS VAPOR INTRUSION?

Vapor intrusion occurs when vapors move from the soil air space into structures. TCE vapors mix with the atmosphere if they migrate through the soil to the open air. However, if TCE vapors migrate into a building, they can then accumulate in the building to levels that can be harmful.

Vapors, including those that contain TCE, move from areas of higher pressure to areas of lower pressure. Seasonal pressure and temperature changes cause the below ground TCE vapor cloud to expand (summer) or contract (winter).

Soil that has a lot of connected air space, like sand and gravel, allow vapors to move more freely in response to pressure differences in the ground. Sand backfill around underground pipes and near basements may allow vapors to move more readily into and through the backfill material.

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Email: adamsj1@michigan.gov

Health Department of Northwest Michigan
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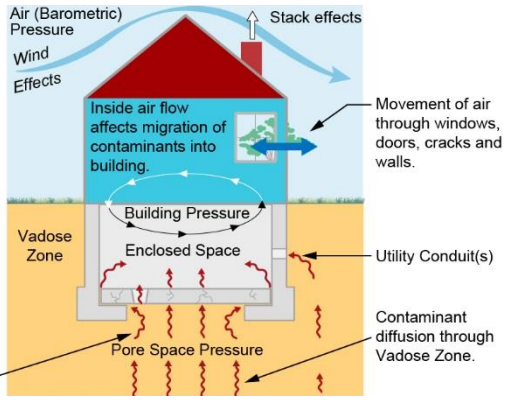
WILL TCE ENTER MY BUILDING?

When the air pressure in a building is lower than the air pressure in the soil pore space, vapors may then move into the building.



A sealed concrete slab does not allow vapors to move readily through it. Cracks or sumps in floors, unfinished crawl spaces or basements, and utility conduits may allow vapors to enter a building.

- Air conditioners increase a building's air pressure to help prevent soil vapors from moving into the building from the subsurface.
- Heated indoor air rises and moves out of a building. The warm air lost is replaced by outside air or vapors from soil below the building.
- Wind blowing over a building changes pressure differences between soil, the atmosphere and a building and, thus, influences vapor movement.

For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

December 2024

WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 12 – HOW DO WE ASSESS VAPOR INTRUSION?

IS VAPOR INTRUSION A CONCERN?

Long-term inhalation of TCE is a human health concern. When TCE vapors move from the ground into the air, the TCE vapors mix with the air and/or are broken down and this is not a risk to public health at this Site. But if TCE vapors enter a structure, less mixing occurs and levels of TCE in the indoor air can accumulate to levels that can be harmful.

HOW HAVE WE INVESTIGATED VAPOR INTRUSION?

The occurrence of TCE in soil and groundwater has been defined by numerous subsurface investigations. Additional monitoring wells were installed in from 2020 to 2024 to allow samples to be collected from the top of the water table. Since 2017 soil vapor monitoring probes have been installed in the Mancelona area and near Schuss Mountain Resort residential areas, including probes installed through floors, to directly collect and analyze soil vapor samples for TCE. Soil vapor and groundwater sample results are then compared to vapor intrusion screening levels.

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WHO DETERMINES WHAT LEVELS ARE SAFE?

The Michigan Department of Health and Human Services (MDHHS) establishes safe guidelines for indoor air levels for TCE. The indoor air screening level for TCE varies from 2 to 12 micrograms per cubic meter (µg/m^3), depending on a building's use.

In 2020, generic TCE vapor intrusion screening levels were established for soil, soil vapor and groundwater to be protective of the MDHHS-established indoor air screening levels:

Media	Residential	Nonresidential
Soil (µg/kg)	100	100
Groundwater (µg/L)	10	10
Soil Vapor (µg/m^3)	67	67

These screening levels assume some leaking into buildings occurs to ensure they are protective of human health. If TCE is detected above an appropriate screening level, it does not necessarily mean that unsafe vapor intrusion is occurring:

When TCE levels measured in groundwater collected from the water table are above screening levels, the next step is to assess TCE levels in soil vapor. Unless groundwater is directly in contact with a building, TCE must first move from the groundwater into the soil vapor space before it can move into a building.

If TCE is detected in soil vapor above an appropriate screening level, it must still be able to get into the building. The next step, then, is to collect samples of indoor air to assess whether TCE accumulates at levels that are harmful. Indoor air sample collection has only been necessary at five buildings located near the old manufacturing building.

EGLE HEALTH DEPARTMENT of Northwest Michigan

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 13 – SOURCE AREA VAPORS

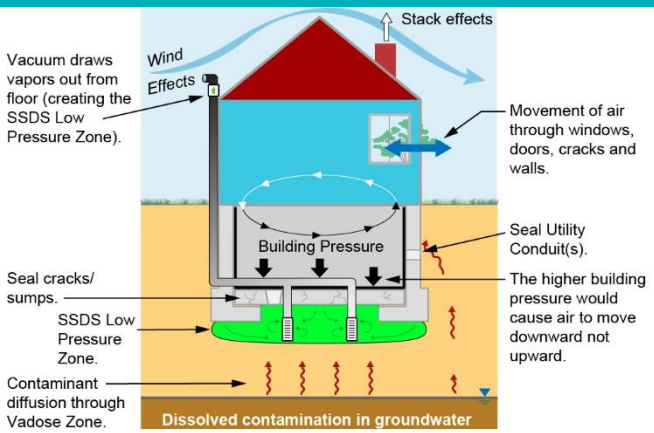
WHAT HAVE WE DONE?

A source area vapor investigation was conducted at the former manufacturing plant in 2017 and 2018 that included:

- A geophysical survey over the demolished plant. *No new sources were identified*.
- Collection of 40 soil samples from 28 locations. TCE was not detected above the safe direct contact level but *TCE was detected above vapor intrusion screening levels in 14 samples*.
- Monitoring well data tells us that the groundwater table has risen by nearly 8 feet since 2013. *TCE levels at the water table at the former plant have increased and are above vapor intrusion screening levels.*
- Over 132 soil vapor samples were collected from 54 permanent and 16 temporary monitoring points. *TCE vapors are highest below the former plant building and TCE levels typically increase near the water table*.

WHAT DO WE KNOW?

- **TCE levels in shallow soil vapor below the former plant exceed vapor intrusion screening levels year-round.**
- **TCE levels in shallow soil vapor seasonally exceed vapor intrusion screening levels on properties to the west of the former plant.**



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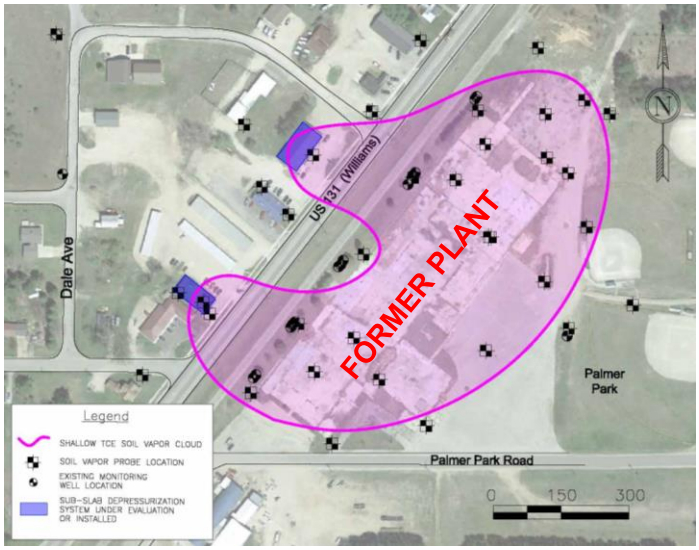

WHAT IS BEING DONE?

TCE levels are continuing to be measured seasonally in soil vapor to assess the vapor intrusion risk at occupied buildings.

When TCE in soil vapor exceeds vapor intrusion screening levels near a building:

- A specially designed, non-leaking, vapor monitoring point is installed through the floor of the building to assess TCE levels in “sub-slab” soil vapor.
- Seasonal sub-slab soil vapor and indoor air samples are collected to assess TCE levels in and below the structure.
- A sub-slab depressurization (SSD) system can be installed below floors to prevent soil vapors from moving into a building. Cracks in floors, foundations, and utility conduits are typically sealed when SSD systems are installed.
- SSD systems can use a vacuum to maintain a low-pressure zone below the floor that prevents soil vapors from moving into the building.
- SSD systems, vapor barriers and other engineering controls will be needed for future development of the former plant property.

Health Department of Northwest Michigan
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For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Bellaire.

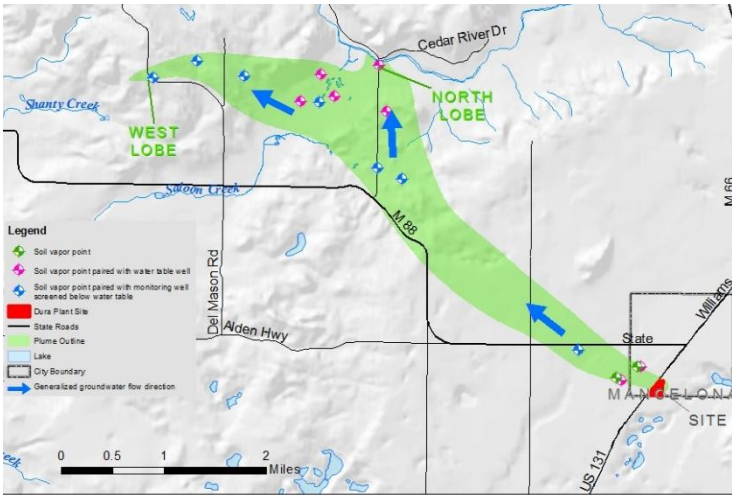
December 2024

2024

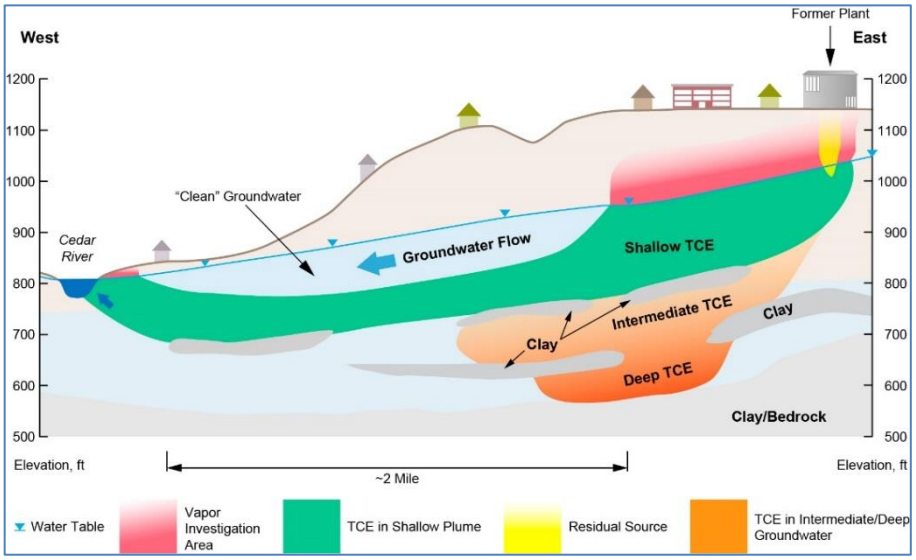
WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 14 – DOWNGRADIENT VAPORS

IS TCE IN THE GROUNDWATER A CONCERN FOR HOMES?



Unlike water, which moves from high areas to low areas (i.e., "downhill"), air in the ground tends moves up and down in response to above ground seasonal changes in pressure and temperature. Because TCE is a volatile organic compound, it readily changes from a liquid to a vapor. Underground, TCE dissolved in groundwater can become a vapor and move into the soil air space. When TCE is present at the water table it can move into the soil air space and, under the right conditions, may move into a home. Long term inhalation of TCE is a human health concern.



WHEN IS THIS A CONCERN?

If TCE exceeds the groundwater vapor intrusion screening levels, it does not necessarily mean that TCE vapors are moving into homes.

The groundwater table is typically 50 feet to as much as 250 feet below the ground surface where the Wickes-related TCE occurs in groundwater.

In most areas, for TCE to move from groundwater into a home as a vapor, it must first move from the water table into the overlying soil air space.

Over most of the area where TCE occurs in shallow groundwater, TCE is not detected until 20 or more feet *below* the water table. Testing has shown that TCE is not likely to be present in soil vapor above clean groundwater lens.

When TCE levels in groundwater exceed the vapor intrusion screening levels, it does not mean that vapor intrusion is happening but additional investigations to measure TCE in soil vapor may be warranted. TCE in soil vapor continues to be monitored where TCE is detected in groundwater at the water table and in areas of very shallow groundwater near the base of Schuss Mountain.

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December 2024

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 15 - WHO IS INVOLVED

ROLES AND RESPONSIBILITIES

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), conducts the investigation and management of the TCE in groundwater. EGLE:

- Collects groundwater and surface water samples for laboratory analysis to monitor for TCE,
- Funds the collection and laboratory analysis of water samples from residential wells by the Health Department of Northwest Michigan (HDNW),
- Publishes and makes available the results of laboratory analyses and other investigative activities,
- Arranges for bottled water if TCE is found in residential wells and public water is not yet available, and
- Funds Mancelona Area Water and Sewer Authority (MAWSA) to extend the public water supply in response to TCE movement.

WHO DO I CONTACT TO HAVE MY WELL SAMPLED?

Residential well sampling priorities are determined annually based on the location of a residential well to the known extent of and location of the TCE in groundwater. The HDNW should be called to discuss adding your well to this sampling program. EGLE's interactive website can help you understand the proximity of TCE in groundwater to your property and to view the historical extent of TCE in groundwater:

https://ifrastructure.amecfw.com/wickes/

If your well is not in a priority area where it is deemed to be threatened by TCE impacts, you can contract one of several area laboratories to have your water tested for TCE.

OTHER RESOURCES

Copies of all technical reports prepared by/for EGLE are available at the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

OTHER PARTNERS

Antrim County United Through Ecology (ACUTE): A community stakeholders group developed in response to the TCE in groundwater.

Antrim County, Custer Township, Kearney Township, Mancelona Township and all area residents: Active support throughout project implementation and participants in public meetings.

AMEC Engineering & Consulting of Michigan (AMEC): Environmental contractor working for EGLE since 2003 on the former Wickes Manufacturing Plant.

EGLE Drinking Water Laboratory: Provides drinking water analytical testing.

EGLE Environmental Laboratory: Provides soil and groundwater analytical services.

EGLE Drinking Water and Environmental Health Division: Provides funding and support for MAWSA infrastructure expansion.

HDNW: Conducts residential well sampling, implements the Well First Policy to prevent unintended exposure to TCE contaminated drinking water.

MAWSA: Maintains the public supply system in the area. MAWSA operates the Mancelona Supply Wells and the Cedar River Well Field.

Schuss Mountain and Shanty Creek Resorts, surrounding home owners' associations and local real estate agencies: Active support throughout project implementation and participants in public meetings.

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WICKES MANUFACTURING TRICHLOROETHYLENE (TCE) PLUME

FACT SHEET 16 – TCE AND PROPERTY

TCE IN GROUNDWATER BENEATH MY PROPERTY

The potential for exposure to TCE in groundwater can occur when a drinking water well tests positive for TCE. Drinking water wells that are in the path of TCE have water tested annually by the Health Department of Northwest Michigan (HDNW).

If ***ANY*** TCE is detected in a residential well, bottled water is supplied until the residence can be hooked up to the public water supply and the private drinking water well is properly abandoned to prevent exposure to the TCE in groundwater. The cost for hookup to the public water supply as well as the abandonment of private water wells is paid for by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). For areas where the public water supply is not available, the HDNW's Well First Policy outlines well construction and sampling requirements. Refer to Fact Sheet 8, What is the Well First Policy?

LAWS AND DISCLOSURE

The Sellers Disclosure Act, Act 92 of 1993, requires certain disclosures in connection with transfers of residential property. This requires sellers to disclose the condition of the property at the time of sale, including any environmental issues.

The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, regulates facilities of environmental contamination in Michigan. The TCE in the groundwater in Antrim County is covered under Part 201. Part 201 requires written disclosure of the general nature and extent of contamination when property transfers occur.

These laws do not prevent the transfer or use of property. Sellers can provide information to purchasers that safe drinking water is assured by EGLE and HDNW.

RESALE AND MARKETABILITY

Property values can be affected when property cannot be used safely. Property in Antrim County where there is TCE in groundwater is safe to use due to the HDNW's Well First Policy (See Fact Sheet 8 – What is the Well First Policy), which assures:

- **New wells are not installed in areas with TCE in groundwater, and**
- **Groundwater is safe to drink in areas where public water is not yet available.**

If groundwater becomes unsafe to use as the TCE in groundwater moves, funding is provided through EGLE to the Mancelona Area Water and Sewer Authority for extension of the public water supply to provide safe drinking water.

QUESTIONS ABOUT PROPERTY AND TCE

EGLE and HDNW are committed to working with owners and purchasers during property transfers. Please direct questions to:

Michigan Department of Environment, Great Lakes, and Energy
Contact: Janice Adams at 989-619-4211
Email: adamsj1@michigan.gov

Health Department of Northwest Michigan
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For additional information please see the Mancelona Township Library, the Bellaire Public Library, or the Antrim County Building in Bellaire.

MEMORANDUM

Date: **May 5, 2026**

To: **Board of Health**

From: **Janenne Irene Pung, Director of Community Health**

Re: **Emergency Response Partnerships**

With an unprecedented ice storm, a blizzard shutting down schools, businesses and county buildings, and flood impacting our jurisdiction over the last 13 months, partnerships in emergency preparedness are increasingly critical. In all three of the severe weather events, the Health Department of Northwest Michigan served a supporting role by:

- Attending emergency operation center meetings,
- Using our emergency text thread and BeAlert to communicate quickly and efficiently as a leadership team and with staff,
- Providing and supporting staff in assisting at shelters, delivering food, sharing social media posts, opening our offices as distribution centers for free flood recovery buckets in partnership with Disaster Relief at Work, and
- Informing the public on how the severe weather event could impact public health, such as the importance of assessing the safety of drinking water from a private well that has been flooded.

Each time one of these events occurs, we participate with community partners and then bring our reaction in-house for an After Action Report and hot wash assessment. Between these emergencies, we run our own emergency preparedness drills, all of which are led consistently by one person—Emergency Preparedness Coordinator Chloe Capaldi.

Next Up

HDNW will have a strong presence at the multi-county Northern Exposure drill, being held in Antrim, Cheboygan, Emmet, and Montmorency counties June 5-8. The drill is designed to confirm the readiness of Michigan National Guard while enhancing interagency/intergovernmental partnerships and providing support to civil authorities in a realistic, constructive, and simulated training environment. There will be three separate geographic areas involved, directly involving Antrim and Emmet counties and one occurring just outside Otsego County.

While details of the scenario are being kept at the planning level currently, HDNW has its own training objectives for the drill. They include:

1. Volunteer(s) coordination through Michigan Volunteer Registry,
2. Involvement if there is a public health threat (Bioterrorism, Radiation, Chemical),
3. Public information coordination, and
4. Operational Coordination.

We are prepared to share key outcomes from the drill at a future Board of Health meeting.

March 2026 Bills and Employee Expenses

Suggested Motion: The finance committee met to review the bills and employee expenses and would like to make a motion for the full board to approve the MARCH 2026 bills, in the amount of $601,399.88.

Suggested Motion: The finance committee met to review the bills and employee expenses and would like to make a motion for the full board to approve the MARCH 2026 employee expenses of $16,316.87.

Well First Proposed Revisions- Suggested Motion

Suggested Motion: I move that the Board of Health approve and adopt the proposed revisions to the *Well First Protocol for Installation of Residential Drinking Water Wells Within Areas Subject to Contaminated Groundwater, Near Mancelona and Bellaire, Michigan* document, with such revisions to take effect on June 1, 2026.

WELL FIRST PROTOCOL FOR INSTALLATION OF RESIDENTIAL DRINKING WATER WELLS WITHIN AREAS SUBJECT TO CONTAMINATED GROUDWATER, NEAR MANCELONA AND BELLAIRE, MICHIGAN

Effective Date: APRIL 2026

Basis for Protocol

Trichloroethylene (TCE), a suspected carcinogen, has been detected in groundwater near and to the northwest of Mancelona, Michigan. Investigative efforts by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and Health Department of Northwest Michigan (HDNW) continue to discover affected groundwater and verify migration of contaminants within and toward the Schuss Village and Shanty Creek areas. Specific restrictions on well installations in this area were deemed necessary, in accordance with Part 127 of Act 369, P.A. 1978 and Act 399, P.A. 1976, to protect the public health and prevent the unintended consumption of contaminated drinking water.

Mandatory Procedures

For new or replacement residential drinking water wells installed within the areas encompassed by the Mancelona Water and Sewer Authority service district and special assessment district, where public water is available, areas of the Schuss Village development, and Sections 3, 4, 5, 6, 7 and 8 of Custer Township and Sections 31, 32, 33, 34, and 35 of Kearney Township, the following procedures apply and are considered conditions of the well permit.

Well First Policy

Proposed residential drinking water wells will not be approved for use and will restrict the issuance of other health department permits (ie. sewage disposal) until the following construction and sampling requirements have been met:

Well Depth: The proposed drinking water well must be completed and screened at a depth least likely to be impacted by TCE contaminated water. Water well contractors should contact ~~EGLE or~~ HDNW prior to drilling and completion of the proposed drinking water well. With assistance from EGLE and Health Department personnel, a target depth for screen placement should be established based on regional geology and intervals of known groundwater impairment.

Well Drilling: The proposed drinking water well must be constructed using mud rotary drilling techniques and methodologies.

Grouting Requirement:
The proposed drinking water well must be grouted with neat cement or bentonite grout for the entire casing length of the well.

Well Development: The proposed water well must be developed by surging or pumping and is restricted from development by air. After development, the well must sit a minimum of 24 hours prior to sampling.

Well Sampling: The proposed drinking water well must be sampled for Volatile Organic Compounds (VOC), including TCE, prior to putting the well into service and results must be reported to the Health Department of Northwest Michigan, Environmental Health Division.

If analysis results in the water supply exceeding any EPA Maximum Contaminant Level (MCL) of 5 ppb, the following apply:

i. Water from an approved water source must be supplied for drinking water purposes.

ii. The water well must be immediately abandoned (see Plugging of abandoned wells).

Final Inspection: The Health Department of Northwest Michigan must be contacted to conduct a final inspection of the proposed drinking water well after completion.

Connection to Public Water Supply: When a public water supply system becomes available, the premises must connect to the public water supply system. Additionally, the existing water supply well is considered to be "abandoned" and will be required to be plugged.

Plugging of abandoned wells: Abandoned water wells must be properly plugged, in accordance with Part 127 of Act 368, P.A. 1978, when public water is made available and after connection to the premises.

Annual Sampling: In order to assure long-term safety of the drinking water supply, the Health Department of Northwest Michigan strongly recommends annual sampling for Volatile Organic Compounds (VOCs), including TCE.

Open loop geothermal wells: Permits for open loop geothermal wells will not be issued in the Well First/known contamination area per Rule 122 of the Michigan Water Well and Pump Installation Construction Code.

I hereby acknowledge that the water supply well permitted by the Health Department of Northwest Michigan may be subject to contamination and that I agree to the above restrictions as written.

Signature _____ Date _____

Health Department of Northwest Michigan use only:

Supplement to special conditions for Permit # _____

Sanitarian's Signature _____Date _____

MERS Amendments: Suggested Motion

Suggested Motion #1: *In order to comply with MERS' new requirements, I move to make the employees' 2% contribution to their MERS Defined Contribution account a mandatory contribution, and no longer an optional contribution.*

Suggested Motion #2: I move that while amending the Defined Contribution account, HDNW allows employees to take loans against their vested amount in their Defined Contribution accounts.

Health Department of Northwest Michigan
2026 Local Appropriations Request

County	Requested	Approved	Variance
Antrim	$ 257,754	$ 257,754	-
Charlevoix	286,609	286,609	-
Emmet	375,251	375,251	-
Otsego	276,015	250,000	26,015