State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 10/21)

Notice: Use this form to request **a written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This from should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf"

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Nelson	Denice		Tyco Fire Products LP		
Mailing Address			City	State	ZIP Code
2700 Industrial Parkway South			Marinette	WI	54143
Phone # (include area code)	Fax # (include area code)		Email		

The requester listed above: (select all that apply)

- [x] Is currently the owner
- [ ] Is considering selling the Property
- [ ] Is renting or leasing the Property
- [ ] Is considering acquiring the Property
- [ ] Is a lender with a mortgagee interest in the Property
- [ ] Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request)

☐ Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Henry	Erin		Arcadis		
Mailing Address			City	State	ZIP Code
790 North Milwaukee Street, Suite 100A			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(267) 685-1712			erin.henry@arcadis.com		

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Henry	Erin		Arcadis		
Mailing Address			City	State	ZIP Code
790 North Milwaukee Street, Suite 100A			Milwaukee	WI	53202
Phone # (include area code)	Fax # (include area code)		Email		
(267) 685-1712			erin.henry@arcadis.com		

Section 2. Property Information

Property Name			FID No. (if known)		
Tyco Fire Technology Center - PFCs			438005590		
BRRTS No. (if known)			Parcel Identification Number		
0238580694					
Street Address			City	State	ZIP Code
2700 Industrial Parkway South			Marinette	WI	54143
County	Municipality where the Property is located		Property is composed of:		Property Size Acres
Marinette	◉ City ○ Town ○ Village of		○ Single tax parcel ○ Multiple tax parcels		380

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

◉ No ○ Yes

Date requested by: _____

Reason:

_____

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

◉ No. **Include the fee that is required for your request in Section 3, 4 or 5.**

○ Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:
Section 3. Technical Assistance or Post-Closure Modifications;
Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [**Numbers in brackets are for WI DNR Use]**

- ☐ No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - Include a fee of $350. Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- ☐ Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of $700.**
- ☒ Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of $1050.**
- ☐ Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of $1050.**
- ☐ Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of $1050.**
- ☐ Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of $1050.**
- ☐ Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of $350**
- ☒ Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of $425.**
- ☐ Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of $425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- ☐ Schedule a Technical Assistance Meeting - **Include a fee of $700.**
- ☐ Hazardous Waste Determination - **Include a fee of $700.**
- ☐ Other Technical Assistance - **Include a fee of $700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- ☐ Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of $1050, and:**
  - ☐ Include a fee of $300 for sites with residual soil contamination; and
  - ☐ Include a fee of $350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

  Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Section 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. **[Numbers in brackets are for DNR Use]**

☐ "Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the real Property, and/or the personal Property and fixtures;

(2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;

(3) the date the environmental assessment was conducted by the lender;

(4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.

(5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.

(6) a copy of the Property deed with the correct legal description; and,

(7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).

(8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:

h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.

i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

☐ "Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of $700.**

Provide the following documentation:

(1) ownership status of the Property;

(2) the date of Property acquisition by the representative;

(3) the means by which the Property was acquired;

(4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;

(5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and

(6) a copy of the Property deed with the correct legal description.

☐ Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

☐ hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];

☐ Perceived environmental contamination - [649];

☐ hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or

☐ solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of $700, a summary of the environmental liability clarification being requested, and the following:**

(1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).

(2) current and proposed ownership status of the Property;

(3) date and means by which the Property was acquired by the LGU, where applicable;

(4) a map and the ¼, ¼ section location of the Property;

(5) summary of current uses of the Property;

(6) intended or potential use(s) of the Property;

(7) descriptions of other investigations that have taken place on the Property; and

(8) (for solid waste clarifications) a summary of the license history of the facility.

Section 4. Request for Liability Clarification (cont.)

☐ Lease liability clarification - s. 292.55, Wis. Stats. [646]

- ❖ **Include a fee of $700 for a single Property, or $1400 for multiple Properties and the information listed below:**

(1) a copy of the proposed lease;

(2) the name of the current owner of the Property and the person who will lease the Property;

(3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;

(4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;

(5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and

(6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

- ❖ **Include a fee of $700 and an adequate summary of relevant environmental work to date.**

☐ No Action Required (NAR) - NR 716.05, [682]

- ❖ **Include a fee of $700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

☐ Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

- ❖ **Include a fee of $700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

☐ Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,

(2) a copy of the Property deed with the correct legal description.

☐ Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

- ❖ **Include a fee of $700, and the information listed below:**

(1) Phase I and II Environmental Site Assessment Reports,

(2) a copy of the Property deed with the correct legal description.

☐ Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

- ❖ **Include a fee of $1400, and the information listed below:**

(1) a draft schedule for remediation; and,

(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

- ☐ Phase I Environmental Site Assessment Report - Date: _____
- ☐ Phase II Environmental Site Assessment Report - Date: _____
- ☐ Legal Description of Property (required for all liability requests and specialized agreements)
- ☐ Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

☐ Groundwater ☐ Soil ☐ Sediment ☐ Other medium - Describe: _____

Date of Collection: _____

- ☐ A copy of the closure letter and submittal materials
- ☐ Draft tax cancellation agreement
- ☐ Draft agreement for assignment of tax foreclosure judgment
- ☒ Other report(s) or information - Describe: 2025 Interim Long Term Monitoring Report #2

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

- ◯ Yes - Date (if known): _____
- ◯ No

Note: The Notification for Hazardous Substance Discharge Form - Non-Emergency Only (Form 4400-225) is accessible through the RR Program Submittal Portal application. Directions for using the form and the Submittal Portal application are available on the Submittal Portal web page.

Section 7. Certification by the Person who completed this form

- ☐ I am the person submitting this request (requester)
- ☒ I prepared this request for: Denice Nelson
  Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Signature Date Signed 3/31/2025

Senior Environmental Specialist
Title

(312) 575-3732
Telephone Number (include area code)

Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a DNR regional brownfields specialist with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf.

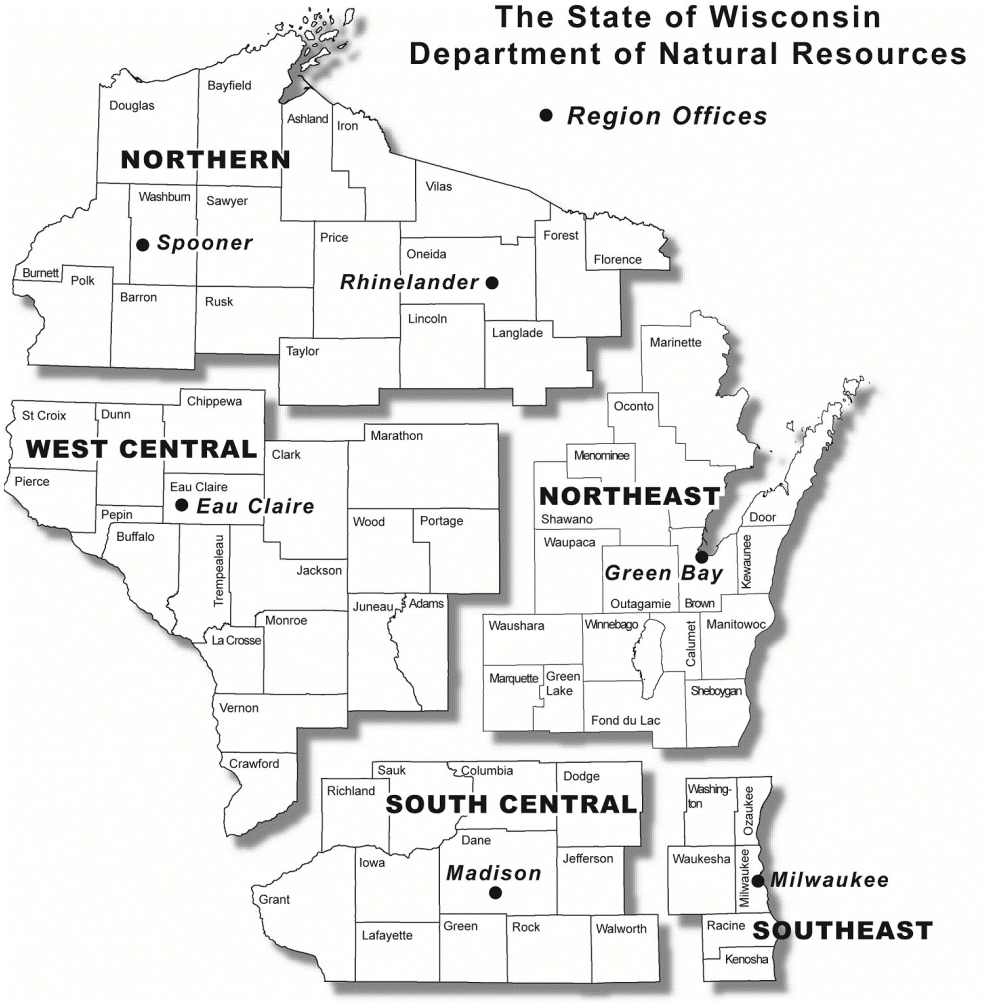
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION
Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION
Attn: RR Program Assistant
Milwaukee DNR Office
1027 West St. Paul Ave
Milwaukee WI 53233

DNR WEST CENTRAL REGION
Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer	Comments		
Fee Enclosed? ◯ Yes ◯ No	Fee Amount $	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Tyco Fire Products LP

2025 Interim Long Term Monitoring Report #2

Tyco Fire Technology Center
Marinette, Wisconsin

BRRTS No. 02-38-580694

March 2025

2025 Interim Long Term Monitoring Report #2

Tyco Fire Technology Center
Marinette, Wisconsin
BRRTS No. 02-38-580694

March 2025

Prepared By:
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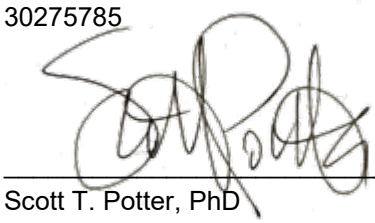
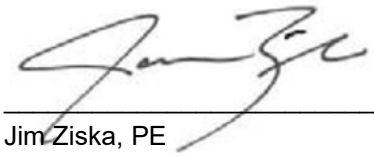
Prepared For:
Tyco Fire Products LP
2700 Industrial Parkway South
Marinette
Wisconsin 54143

Our Ref:
30275785



Scott T. Potter, PhD
Project Lead/Technical Expert

Tim Molitor, PG
Project Geologist



Jim Ziska, PE
Principal Environmental Engineer

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Acronyms and Abbreviations

AFFF	aqueous film-forming foam
Arcadis	Arcadis U.S., Inc.
bgs	below ground surface
BRRTS	Bureau for Remediation and Redevelopment Tracking System
CSM	conceptual site model
ESIA	Extended Site Investigation Area
f_{oc}	fraction of organic carbon content
FTC	Fire Technology Center
FTS	fluorotelomer sulfonate
GAC	granular-activated carbon
GETS	groundwater extraction and treatment system
gpm	gallon per minute
LTM	long-term monitoring
ng/L	nanogram per liter
NR	Natural Resources
OTA	Outdoor Testing/Training Area
PFAS	per- and polyfluorinated alkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
POET	point-of-entry treatment
PVC	polyvinyl chloride
PWSA	Potable Well Sampling Area
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
R&D	research and development
RADR	Remedial Action Design Report
SI	site investigation
Site	Tyco Fire Technology Center located at 2700 Industrial Parkway South in Marinette, Wisconsin
Tyco	Tyco Fire Products LP

USEPA	United States Environmental Protection Agency
VAP	vertical aquifer profile
VOC	volatile organic compound
WDNR	Wisconsin Department of Natural Resources
Wis. Adm. Code	Wisconsin Administrative Code
WPDES	Wisconsin Pollutant Discharge Elimination System

Executive Summary

This Interim Long-Term Monitoring (LTM) Report #2 presents the results of groundwater and surface water monitoring activities for the Tyco Fire Products LP (Tyco) Fire Technology Center (FTC; the Site), in Marinette, Wisconsin from October 2024 through March 2025. This is the second LTM report documenting the interim LTM program, initiated in June 2024 to monitor concentrations of site-related per- and polyfluoroalkyl substances (PFAS) in groundwater and surface water.

Additionally, this report documents the installation of monitoring wells and new data collected from the five locations ("o", "p", "r", "s", and "t") proposed in the June 2024 (letter) Response to April 17, 2024 Comments – Response to *Interim Long Term Monitoring Plan for Groundwater and Surface Water* (June 2024 RTCs; Arcadis 2024d). Monitoring wells were installed in all locations except "p", near the corner of Industrial Parkway South and Cleveland Avenue where installation is planned for later in 2025. Vertical aquifer profiling (VAP) groundwater samples were collected from this location in January 2025; however, at the City of Marinette's request, monitoring wells will not be installed in this location until after the City's planned road improvement work is complete, in approximately Q2 2025.

Since submitting the 2024 Site Investigation Status and Interim LTM Report (Arcadis 2024e), over one hundred groundwater and surface water samples were collected across the LTM programs (i.e., Interim LTM and Groundwater Extraction and Treatment System [GETS] LTM). The data collected as part of the LTM programs, in combination with historical data, has been incorporated into the existing conceptual site model (CSM) to confirm the horizontal and vertical extent of PFAS in groundwater associated with the Site. Additionally, recent groundwater data reported in the April 2025 Site Investigation Status Report (Arcadis 2025a) for the Stanton Street Facility (BRTTS Nos. 02-38-581955 and 02-38-583852) have been incorporated, as appropriate.

Background and Conceptual Site Model

The FTC is a fire suppressant training, testing, and research and development facility, which has been in operation since the early 1960s. More than five years of prior investigations (Arcadis 2018a; 2018b; 2019a; 2019c; 2020a; 2024e) show that PFAS were historically released to the environment within the central operations area of the FTC, primarily the Outdoor Testing and Training Area (OTA). Outdoor testing of PFAS containing fire suppressants ceased in 2017 and as of July 2024, Tyco no longer manufactures, tests or sells AFFF. From the OTA, historical PFAS entered soil, groundwater, and surface water. The resulting groundwater plume has been mapped within a shallow, primarily-sand aquifer distributed into several lobes, with the majority of the PFAS mass historically migrating offsite to the east, with a lesser amount to the northeast and southeast. Any ongoing migration of PFAS towards the east of the Site is currently being captured by the GETS. Overall, the PFAS plume is delineated. Trend plots for monitoring wells along the exterior of the plume and upgradient of Green Bay support that the PFAS plume is not expanding and that concentrations have decreased over time at several locations. Following the implementation of the GETS expansion, concentrations within the northern and southern lobes of the PFAS plume are expected to decline, causing the overall extent of the impacts to shrink. The Site CSM is as follows:

- **East**: The east-trending groundwater lobe carries the highest PFAS concentrations and the majority of the plume mass; previously, most of this mass was intercepted by Ditch B, a historically engineered drainage channel. A water treatment system on Ditch B has been in operation since 2019, capturing and removing PFAS from the water in the stream. As described in the 2024 Site Investigation Status and Interim LTM Report (Arcadis 2024e), this lobe of the plume is captured by the GETS, which began

operations in November 2022 to intercept groundwater containing PFAS before discharging to Ditch B. The GETS effluent has consistently tested at non-detect for PFAS and is discharged to Ditch B near Pierce Avenue. Samples collected from Ditch B as part of the GETS monitoring program have shown a significant decrease in PFAS levels since the GETS began full 24-hour operation at the beginning of January 2023 (Arcadis 2023c). Optimization efforts related to GETS performance within this portion of the plume, including the installation of additional extraction wells to further enhance plume capture, continued throughout 2024 and into 2025 (Arcadis 2024f).

- **Northeast**: The northeast lobe of the plume has formed from a relatively small component of the eastern lobe that historically flowed under Ditch B and under the City of Marinette, which is served by a non-groundwater source of municipal water. This lobe of the plume is also being captured by the GETS. Optimization efforts related to GETS performance within this portion of the plume continued throughout 2024 and into 2025 (Arcadis 2024f).
- **Southeast:** The southeast lobe of the plume is located within the potable well sampling area (PWSA). This lobe consists of PFAS transported via two pathways. Historically, the primary pathway was groundwater and surface water interaction along Ditch A conveying the plume from the FTC to the southeast in the PWSA. In 2019, the Ditch A treatment system was installed to intercept and remove any PFAS in the ditch. The Ditch A treatment system remains in operation today and continues to mitigate PFAS migration into the PWSA from the FTC. The 4 wells in the center of the southeast lobe of the plume (MW-101-72, PZ-33-33, PZ-72-73, and PZ-74-32) have decreased concentrations of PFOA plus PFOS over the past 6 months (see Figure 4-15). In 2017, Tyco began providing bottled water and point-of-entry treatment (POET) units for residential wells within the PWSA that might have been affected by PFAS related to Tyco's historic operations at the FTC. At this time, every property in the PWSA either (a) is non detect for PFAS (including those that have a new deep private well), or (b) is receiving bottled water and/or has a POET that Tyco installed and maintains. As noted, Tyco is currently in the process of delivering long-term drinking water solutions to this area and has already installed over 100 deep private wells as requested by property owners. Following operation of the Ditch A treatment system over the past several years, a secondary pathway became apparent where a small portion of the PFAS plume was moving in groundwater to the southeast into the PWSA. Currently, the GETS system is undergoing expansion to include additional extraction wells within this portion of the plume to prevent further migration to the southeast (2024f).
- **Bedrock:** PFAS are also present in groundwater within a narrow horizon of weathered bedrock. This horizon occurs immediately beneath the overburden, which consists of a sand aquifer that is typically underlain by glacial till. Groundwater within the weathered bedrock flows northeast toward the Menominee River. The weathered bedrock zone is a pathway for PFAS to migrate to the northeast under the City of Marinette, below the northeast lobe of the shallow PFAS plume in the sand aquifer as previously described. The GETS optimization also includes extraction of the weathered bedrock plume (Arcadis 2024f).

Interim LTM Activities – Q3 2024 through Q1 2025

Since the submission of the first semi-annual Interim LTM report (i.e., 2024 Site Investigation Status and Interim LTM Report; Arcadis 2024e), the following activities associated with the interim LTM of groundwater and surface water have been completed:

- Completion of three quarterly groundwater monitoring events (Q3 2024; Q4 2024; and, Q1 2025) in accordance with the Interim LTM Plan and June 2024 RTCs;
- Completion of one semi-annual groundwater monitoring event across all monitoring groups (FTC [Non-GETS]; Northern Plume; Southern Plume; and Boundary Zone) in Q4 2024 in accordance with the Interim LTM Plan and June 2024 RTCs;
- Completion of one semi-annual surface water monitoring event across Ditches A, C, D, and E in Q4 2024 in accordance with the Interim LTM Plan and June 2024 RTCs;
- Installation of one VAP boring and collection of discrete groundwater samples from three intervals in January 2025 to support well installation at location "p" in accordance with the June 2024 RTCs; and,
- Installation of six new NR 141-compliant monitoring wells across four locations ("o", "r", "s", "t") in December 2024 and January 2025 and collection of groundwater samples in February 2025 in accordance with the June 2024 RTCs.

Interim LTM Results: Groundwater

The Interim LTM data, including data collected from the six recently installed monitoring wells, support the existing CSM and establish clear bounds on the extent of PFAS in groundwater associated with the FTC. Across all Interim LTM groups (FTC[Non-GETS], Northern Plume, Southern Plume, and Boundary Zone), the PFAS plume is delineated.

- **To the west and southwest** of the FTC, data from existing monitoring wells and newly installed monitoring wells (PZ-87 pair in location "r") provide delineation to a "clean boundary" in groundwater. Groundwater elevation data from the expanded network of monitoring wells confirm that groundwater from the Site does not flow to the west and southwest of the FTC. Historical data show that no current or historical pathways exist to the west and southwest: no surface water drainage ditches ever flowed from the FTC in those directions; no utilities exist that might create transport pathways (Arcadis 2023a, 2024e).
- **To the southeast, within the PWSA,** data from existing monitoring wells and a newly installed monitoring well on Green Gable Road (PZ-89-40 in location "t") continue to confirm that the southern plume limit is within the current PWSA boundary. Historical data support that Ditch A is not, and has never been, a pathway to impact groundwater downstream of Madsen Road and outside of the PWSA (Arcadis 2023a, 2024e). Recent monitoring in the Boundary Zone confirms the presence of a previously identified potential sources of PFAS in the vicinity of County Road B and Madsen Road (Arcadis 2023a) and other unidentified sources to the west.
- **To the north** of the FTC, samples from existing monitoring wells and a newly installed monitoring well (PZ-90-20 in location "o") bound the northwestern edge of the overburden plume within the City of Marinette.
- **To the east**, data from existing monitoring wells, including GETS LTM data, continue to confirm that the core of the plume migrates towards Ditch B where the majority of PFAS are captured by the GETS prior to upwelling. The secondary lobes of the plume are at much lower concentrations toward peripheral discharges, leaving only dilute concentrations detectable near West Bay Shore Street.

Interim LTM Results: Surface Water

Surface water samples were collected from Ditches A, C, and D during the semi-annual sampling event in October 2024. Ditch E was dry; therefore, no sample was collected. Ditch B is monitored as part of the GETS LTM, and recent data continue to support that operation of the GETS is reducing upwelling of groundwater, and therefore, reducing concentrations of PFAS in the ditch (Arcadis 2024f). Upwelling of groundwater into the ditch is expected to be further reduced following the implementation of optimization efforts (i.e., increasing pumping capacity).

- **Ditch A:** Concentrations of PFOA and PFOS in Ditch A downgradient of Madsen Road, outside of the PWSA (i.e., SW-10), remain below the surface water standards of 95 ng/L PFOA and 8 ng/L PFOS.
- **Ditch B:** In Q4 2024, concentrations of PFOA at downgradient location SW-L03 were below the surface water standard; PFOS concentrations were below or just above the standard. Additional work to optimize the GETS will further reduce PFAS concentrations in Ditch B.
- **Ditch C:** Concentrations of PFOA and PFOS in Ditch C at West Bay Shore Street (SW-30) remain below standards.
- **Ditch D:** PFAS concentrations in Ditch D at Shore Drive (SW-33) have decreased compared to previous sampling events. Concentrations of PFOA and PFOS were below the surface water standards during the October 2024 sampling event. Upgradient concentrations of PFOA and PFOS in Ditch D (SW-36) remain below standards.
- No PFAS concentrations in surface water outside of the delineated plume boundaries are above WDNR standards.

Update to Recommended Enforcement Standards – Cycle 12

In February 2025, Wisconsin Department of Health Services (WDHS) recommended individual groundwater standards of 4 nanograms per liter (ng/L) for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), 10 ng/L for perfluorohexanesulfonic acid (PFHxS), perfluorononanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (HFPO-DA), and 2,000 ng/L for perfluorobutanesulfonic acid (PFBS). Following the February 2025 WDHS recommendation, the Wisconsin Department of Natural Resources (WDNR) Secretary and the Governor signed the WDNR scope statement. WDNR is in the early stages of rule development for these groundwater standards.

In accordance with the Interim LTM Plan (Arcadis 2024a), previously recommended enforcement standards for PFAS compounds (i.e., Cycle 10 and Cycle 11) were proposed to be used in evaluations of potential reductions in sampling frequencies at monitoring wells; however, these previously recommended enforcement standards are no longer relevant. Therefore, the current recommended enforcement standards (i.e., Cycle 12) have been used to make recommendations on sampling reductions.

Proposed Year 2 Interim LTM Groundwater Monitoring Plan

In accordance with the Interim LTM Plan (Arcadis 2024a), the sampling frequency for a monitoring well inside the plume may be reduced to biennial (i.e., every two years) if:

- PFAS concentrations are less than criteria (i.e., Cycle 12 recommended enforcement standards) for two consecutive events, or

- the well is determined to be redundant within a well cluster (i.e., the monitoring well is screened within the same hydrostratigraphic unit and has similar PFAS concentrations) after two consecutive events.

Based on the groundwater data collected in the first year of interim LTM, the sampling frequency is proposed to be reduced to biennial for five monitoring wells (PZ-68-66, MW129M-45, PZ-35-37, PZ-70-55, and PZ-70-83) that have had consistent groundwater results below the current criteria and one monitoring well (MW013M-R) that is redundant within the well cluster. These six monitoring wells are proposed to be sampled next in the fourth quarter of 2026.

With the exception of the above-mentioned monitoring wells, monitoring wells in the FTC [Non-GETS] group will be sampled semi-annually (i.e., Q2 and Q4 2025) and monitoring wells in all other groups (Northern Plume, Southern Plume, and Boundary Zone) will be sampled annually (i.e., Q4 2025) during the second year of interim LTM. Additionally, a subset of monitoring wells (i.e., eight monitoring wells identified in the June 2024 RTCs) will continue to be sampled on a quarterly basis.

Surface water monitoring at six locations (Ditches A, C, D, and E) will continue to be conducted on a semi-annual basis.

Conclusions

The data continue to confirm that the PFAS plume is delineated. The interior portions of the plume reflect the influence of the GETS, showing decreasing concentrations of PFAS. Data will continue to be collected to document the stability and attenuation of PFAS in groundwater.

No PFAS concentrations in surface water outside of the delineated plume boundaries are above WDNR standards. Surface water concentrations in Ditch B are significantly reduced compared to historic highs as a result of GETS operations. GETS optimization activities are engineered to further reduce the concentrations of PFAS in both Ditch B and Ditch A. The latest GETS optimizations will be fully operational by summer 2025.

1 Introduction

This Interim Long-Term Monitoring (LTM) Report #2 presents the results of groundwater and surface water monitoring activities for the Tyco Fire Products LP (Tyco) Fire Technology Center (FTC; the Site), in Marinette, Wisconsin (**Figure 1-1**) from October 2024 through March 2025. This is the second LTM report documenting the interim LTM program, initiated in June 2024 to monitor concentrations of site-related per- and polyfluoroalkyl substances (PFAS) in groundwater and surface water. Monitoring activities were completed in accordance with the Interim LTM Plan for Groundwater and Surface Water (Interim LTM Plan; Arcadis 2024a).

Additionally, this report documents the installation of monitoring wells and new data collected from the five locations ("o", "p", "r", "s", and "t") proposed in the June 2024 (letter) Response to April 17, 2024 Comments – Response to *Interim Long Term Monitoring Plan for Groundwater and Surface Water* (June 2024 RTCs; Arcadis 2024d). Monitoring wells were installed in all locations except "p", near the corner of Industrial Parkway South and Cleveland Avenue, where installation is planned for later in 2025.

Project records have been tracked since January 2018 under the Bureau for Remediation and Redevelopment Tracking System (BRRTS) No. 02-38-580694. Earlier phases of site investigations were completed under BRRTS No. 03-38-001345. Since submitting the 2024 Site Investigation Status and Interim LTM Report (i.e., the first interim LTM report; Arcadis 2024e), over one hundred groundwater and surface water samples were collected across the LTM programs (i.e., Interim LTM and Groundwater Extraction and Treatment System [GETS] LTM). The data collected as part of the LTM programs, in combination with historical data, have been incorporated into the existing conceptual site model (CSM) to confirm the horizontal and vertical extent of PFAS in groundwater associated with the Site. Additionally, recent groundwater data reported in the March 2025 Site Investigation Status Report (Arcadis 2025a) for the Stanton Street Facility (BRTTS Nos. 02-38-581955 and 02-38-583852) have been incorporated, as appropriate.

Since the submission of the first interim LTM report (Arcadis 2024e), the following activities associated with the interim LTM of groundwater and surface water have been completed:

- Completion of three quarterly groundwater monitoring events (Q3 2024; Q4 2024; and, Q1 2025) in accordance with the Interim LTM Plan and June 2024 RTCs;
- Completion of one semi-annual groundwater monitoring event across all monitoring groups (FTC [Non-GETS]; Northern Plume; Southern Plume; and Boundary Zone) in Q4 2024 in accordance with the Interim LTM Plan and June 2024 RTCs;
- Completion of one semi-annual surface water monitoring event across Ditches A, C, D, and E in Q4 2024 in accordance with the Interim LTM Plan and June 2024 RTCs;
- Installation of one vertical aquifer profiling (VAP) boring and collection of discrete groundwater samples from three intervals in January 2025 to support well installation at location "p" in accordance with the June 2024 RTCs; and,
- Installation of six new NR 141-compliant monitoring wells across four locations ("o", "r", "s", "t") in December 2024 and January 2025 and collection of groundwater samples in February 2025 in accordance with the June 2024 RTCs.

The details of these monitoring activities are provided in **Section 3** and results are described in **Section 4**. Conclusions and recommendations based on the monitoring results, including proposed changes in groundwater sampling frequencies, are provided in **Section 5**.

2 Site Background

2.1 Site Description and History

The FTC is a fire suppressant training, testing, and research and development (R&D) facility, occupying approximately 380 acres in southern Marinette, Wisconsin. The Site lies approximately 1 mile west of the Green Bay shoreline and 1.6 miles south of the Menominee River, which is the border with Michigan. The developed area of the Site is contained within an approximately 60-acre central campus comprising 13 buildings and a 9-acre plot referred to as the Outdoor Testing/Training Area (OTA). **Figure 2-1** shows the site layout. The OTA includes the Firefighting School area (where firefighting scenarios are simulated) and the R&D area (where product testing occurs). The training area is an open gravel lot containing concrete and clay pads and steel pans, some with props where a contained fire is started and extinguished to test the performance of the fire suppression products. Two fire test houses are located on the southern edge of the OTA. Other site buildings support training, R&D, quality testing activities, warehousing, and manufacturing. The area of the Site outside the central campus comprises more than 300 acres of undeveloped forest and wetlands.

The FTC was constructed on previously undeveloped land in the early 1960s for training, demonstrations, and testing of a range of fire suppressants. Historical aerial photographs indicate that the Site was undeveloped and forested in 1954, but that the land had been cleared in the location of the OTA in 1958. The first significant building at the FTC was the Engineering Laboratory (Building 102), constructed in approximately 1962 on the western side of the OTA (**Figure 2-1**). Buildings were added to the campus over time. Much of the current campus was constructed by the mid-1970s, although additional renovations and new construction have continued to the present day.

Aqueous film-forming foam (AFFF) was historically used as part of outdoor R&D, quality testing, and firefighting training activities at the OTA, until outdoor AFFF use was discontinued in 2017, and as of July 2024, Tyco no longer blends, tests, or sells foam containing PFAS. Current outdoor R&D, quality testing, and firefighting training activities use dry chemical fire suppressants that do not contain PFAS. In 2020, Tyco constructed the Advanced Research and Testing Facility north of the OTA to provide an indoor area for the testing of firefighting foam products. As of July 2024, only testing of non-fluorinated foams occurs at the Site. Wastewater (typically 97 percent water and 3 percent non-fluorinated foam) is contained and conveyed to a wastewater treatment facility located within the building, where it is treated and disposed of in accordance with an industrial pretreatment discharge permit issued by the City of Marinette, and/or shipped to a licensed waste disposal site.

In addition to the FTC, Tyco operates a manufacturing facility in Marinette approximately 1.5 miles to the northeast of the Site on Stanton Street, adjacent to the Menominee River (Stanton Street Site; **Figure 1-1**). Investigations relating to PFAS at the Stanton Street Site are conducted as part of a separate program under BRRTS No. 02-38-581955; however, some monitoring wells and piezometers located between the two sites are used for both programs. Additionally, relevant information associated with the Stanton Street Site has been incorporated into the conceptual site model (CSM) for the FTC.

2.2 Geology and Physical Setting

The LTM monitoring network is located in the City of Marinette and the Town of Peshtigo, which are located along the Green Bay shoreline between the Menominee and Little Rivers, approximately 4 miles north to south (**Figure**

2-2). The land in this area is generally flat, composed of several former lakeshore terraces that descend gradually west to east toward Green Bay.

The geology in the Marinette and Peshtigo area consists of unconsolidated glacial deposits overlying Ordovician dolomite bedrock. The overburden thickness ranges from less than 15 feet in parts of Marinette north of the Site, to more than 100 feet at the Green Bay shoreline. The nature of the overburden deposits varies with depth and location across the area, but in most places is predominantly sand. The most permeable portions of the overburden are sands interpreted to have been deposited as glacial lake beach and dune deposits, typically well-sorted but ranging in size in different beds from fine sand to coarse sand, with occasional pebbles. Significant packages of fine silty sand are also present, interpreted to reflect nearshore deposits. The overburden also includes discontinuous beds of silt and clay, likely reflecting deeper lake bottom deposits. These glacial lake deposits generally overlie a layer of till that lies on top of the bedrock surface. The till is typically very dense and consists of a poorly sorted mixture of clay, silt, sand, gravel, and cobbles.

The dolomite bedrock strata underlying the glacial sediments are nearly flat, dipping gently to the southeast at approximately 30 feet vertically per 1 mile horizontally. As described by Oakes and Hamilton (1973), the bedrock is shaley dolomite of the Sinnipee Group (Galena or Platteville Formations). No faults are mapped in the region. Fractures and weathered zones with sufficient transmissivity to support monitoring wells have been identified in several investigation locations within approximately the upper 20 feet of bedrock. The underlying 200 feet of bedrock has been found to be effectively impermeable, forming an aquitard between the shallow aquifer system (including overburden and weathered bedrock zone) and all deep bedrock water-bearing zones (Arcadis 2022c). The next deeper bedrock water-bearing zone of consistent permeability occurs in the Prairie du Chien Group at a depth of 400 to 500 feet below ground surface (bgs).

The observed geology can be placed in a hydrostratigraphic framework as follows:

- **Sand Aquifer:** Comprising overburden sand deposits, ranging from fine to coarse grained. The aquifer is often highly permeable but heterogeneous and frequently interspersed with beds of low-permeability silt and clay that may reduce the unit's effective thickness of continuously uniform permeability or divide it into shallow and deeper sand zones. The interconnected sand beds of this aquifer are the primary transport pathways for groundwater and PFAS within the investigation area.
- **Overburden Aquitard:** Low-permeability materials comprising till and/or beds of silt and clay that separate the sand aquifer from weathered rock, where present. The overburden aquitard is present throughout most of the area, at thicknesses ranging from several feet to nearly 90 feet.
- **Weathered Rock:** A fractured and/or weathered zone typically present in the upper 10 to 20 feet of bedrock. The permeability of this zone is variable. At some locations, highly permeable fractures are present. At others, no measurable water producing zone could be found.
- **Bedrock Aquitard:** The approximately 200 feet of bedrock underlying the weathered rock, which is effectively impermeable. This zone forms an aquitard between the shallow aquifer system (including overburden and weathered bedrock zone) and all deep bedrock water-bearing zones.

2.3 Drainage Features

The Site and surrounding areas (i.e., City of Marinette and Town of Peshtigo) contain numerous wetlands and relatively few natural streams other than the Menominee and Little Rivers. Most of the drainage within the area is conveyed by historically engineered ditches that flow to Green Bay. These ditches are not formally named but are referred to in this interim LTM report by letter (A, B, C, D, and E), as identified on **Figure 2-3**.

- **Ditch A:** The current configuration of Ditch A comprises three branches engineered to drain approximately 3 square miles. The three branches are identified as the north, south, and west branches of Ditch A. Only one ditch passes through the Site: the north branch of Ditch A, which is fairly consistently under losing conditions (i.e., surface water infiltrates to groundwater), flows north to south, passing west of the OTA. Since January 2019, the flow in the north branch of Ditch A on the Site has been intercepted and treated to remove PFAS before traveling offsite. From approximately the confluence of the north branch and west branch of Ditch A to the Little River, Ditch A exhibits gaining conditions (i.e., groundwater from outside of the Tyco PFAS plume seeps into the ditch).
- **Ditch B:** Ditch B is a constructed drainage feature. The current configuration of Ditch B drains an area of approximately 3 square miles northwest, north, and east of the Site. Within the footprint of the Tyco PFAS plume, Ditch B is naturally gaining (i.e., groundwater seeps into the ditch); however, the GETS is reducing upwelling of groundwater, by design, and therefore, reducing concentrations of PFAS in the ditch. Additionally, the Ditch B treatment system continues to remove PFAS in surface water.

  Ditch B is perennial and originates from two branches: a northern branch that begins just south of Highway 41 that drains wetlands north of Highway 41, and a southern branch that begins on Roosevelt Road just north of Gallagher Road that drains several shopping centers west of the FTC. The southeast flowing segment of the ditch existed at least as early as 1939. At that time, it was fed by a small tributary draining the northeast corner of the future FTC. In the 1960s, Ditch B was straightened and extended westward with a new channel south of Cleveland Avenue. As described above, this segment connected to the north branch of Ditch A and captured flow in an area northwest of the FTC that was formerly drained by Ditch A. The potential connection to Ditch A was removed in the 1980s.
- **Ditch C:** Ditch C comprises multiple channels draining a wetland area adjacent to Green Bay. Its drainage area is approximately 0.5 square miles. Ditch C appears to be perennial, although it had been observed with negligible flow under dry conditions. At higher lakes levels (e.g., as observed in 2019), Ditch C and its wetland complex may act as an estuary.
- **Ditch D:** Ditch D is perennial, draining an area of approximately 0.6 square miles. Ditch D first appeared on historical maps in the 1960s, starting south of University Drive and discharging into Green Bay. As the years progressed, the ditch was extended farther north, past University Drive to Edwin Street. The segment between University Drive and Edwin Street has a flow divide approximately midway of this segment. The northern end of Ditch D drains via a roadside swale along Edwin Street to Ditch B while the southern portion drains southward under University Drive to Green Bay.
- **Ditch E:** Ditch E is a small intermittent creek, draining an area of approximately 0.3 square miles. It first appeared on historical maps in the 1960s and has remained in the same configuration to the present day.

2.4 Groundwater Flow

The water table throughout the monitored area is shallow, generally less than 5 feet deep, and closely tied to the surface water drainage system. Shallow groundwater flow radiates from the FTC toward the northeast, east, and southeast, trending generally toward the Menominee River and Green Bay, while being intercepted in places by the ditches that act as partial discharge boundaries.

Within the saturated overburden, groundwater flow patterns are partly governed by the geometry of the sand aquifer, which varies in thickness from less than 10 feet to approximately 100 feet and contains areas of low-permeability sediments (silt or clay) that restrict groundwater flow. Flow paths are biased by this heterogeneity, trending toward and following the thickest and most-transmissive portions of the sand aquifer. The thicker and more transmissive zones that occur east, northeast, and southeast of the FTC form the preferred routes of flow and transport. The sand unit thins, and the lower-permeability materials thicken from west to east, inhibiting flow directly to Green Bay, causing groundwater to discharge inland at ditches, wetlands, or northward to the Menominee River. The overall thickness of the sand unit south and southwest of the Site is variable with more sand present where bedrock surface elevations are lower.

Potentiometric surfaces of the weathered bedrock zone exhibit a gradient from the Site northeast toward the Menominee River and east toward Green Bay. Although the gradient suggests flow should mostly trend east toward Green Bay, the distribution of PFAS in the zone (**Section 4.1**) shows that the northeast pathway is dominant. This is in part due to the anisotropy of the rock, which is expected to favor flow parallel to bedrock strike (which trends southwest to northeast).

The most recent comprehensive water level gauging event was completed in October 2024. The results of this gauging event are discussed in **Section 3.1**.

2.5 Historical Investigations Related to PFAS

Historical PFAS investigations associated with the FTC have been reported in the following documents:

- 2016 Investigation Report (Arcadis 2016)
- Revised Site Investigation Work Plan (Arcadis 2018a)
- Site Investigation Report (Arcadis 2018b)
- Data Summary Report (Arcadis 2019a)
- Data Summary Report – Supplemental Investigation (Arcadis 2019c)
- Data Summary Report – Heath Lane Area Investigation (Arcadis 2020a)
- Southern Area Groundwater Evaluation Report (Arcadis 2020c)
- Interim Site Investigation Report (Arcadis 2020d)
- Conceptual Site Model (Arcadis 2020e)
- Aerial Deposition Evaluation Report (Arcadis 2020f)
- Fish Tissue Sample Results Notification (Arcadis 2020g)
- Groundwater Flow and Solute Transport Model Report (Arcadis 2020h)
- 2021 GETS Interim Remedial Action Design Report (RADR) (Arcadis 2021b)
- Soil Interim RADR (Arcadis 2021c)
- Air Pathway Site Investigation Report (Arcadis 2022a)
- Site Investigation Status Report for Stanton Street (Arcadis 2022d)

- GETS Pre-Startup Monitoring Data Package (Arcadis 2022e)
- Site Investigation Status Report (Arcadis 2023a)
- Fish Tissue and Surface Water Sampling Update (Arcadis 2023d)
- Site Investigation Status and Interim Long Term Monitoring Report (Arcadis 2024e)

The major elements of these reports are summarized in **Appendix A**. Historical investigation locations are shown on **Figure 2-4**. Well construction information for existing monitoring wells and piezometers is provided in **Table 2-1**.

2.6 Interim Remedial Actions

Tyco has undertaken a series of interim remedial actions to mitigate PFAS impacts associated with the FTC. As summarized in the tables below, these actions address residential drinking water, groundwater, soil, surface water and sanitary sewer discharges.

Drinking Water Interim Remedial Actions

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
Bottled Water	2017 - Present	• Potable well sampling started in December 2017 at approximately 140. • Bottled water offered to residents and all community members within the potable well sampling area (PWSA). • To date, Tyco has tested 173 private drinking water wells.	Revised Long-Term Potable Well Sampling Plan v10 (Arcadis 2024g)
Point-of-Entry Treatment Systems (POETS)	2018 - Present	• The first POET system was installed in February 2018. • POET offers were originally extended if results exceeded the 2016 United States Environmental Protection Agency's (USEPA) Lifetime Health Advisory Level (HAL) of 70 nanograms per liter (ng/L) for perfluorooctanoic acid (PFOA) or perfluorooctanesulfonic acid (PFOS) but in July 2018, the program was expanded to include property locations where detected PFOA and PFOS concentrations were above the laboratory RL for at least two samples. To date, Tyco has installed 47 POET systems within the PWSA; however, 35 POET systems have been removed or taken offline following installation or planned installation of private deep aquifer bedrock replacement wells (see below), one was removed previously because it was not in use, and one other system is currently not in use due to house renovations.	Revised Long-Term Potable Well Sampling Plan v10 (Arcadis 2024g)
Deep Aquifer Bedrock Drinking Water Well Installations	2022 - Present	• One hundred new private deep bedrock wells have been installed to date, with at least 30 installations scheduled for the remainder of 2025. • Each property receiving a new well is supplied with a treatment system consisting of a high-efficiency water softener, a sediment filter, and a reverse osmosis treatment system. • To date, every property within the PWSA either has a drinking water well that is non-detect for PFAS, is receiving bottled water, and/or has a POET.	Deep Aquifer Bedrock Well Design and Long-Term Monitoring Update – Quarterly Deep Private Well Update (October-December 2024) (Arcadis 2025b)

Surface Water Interim Remedial Actions

Remedial Actions	Years	Descriptions of Remedial Actions	Most Recent Document
Ditch A Treatment System	2019 - Present	• System was implemented in January 2019 to treat PFAS-impacted water in the north branch of Ditch A (onsite). • The system includes a check dam to control flow. Pumps convey water from the upstream side of the dam to a treatment system to remove PFAS via granular-activated carbon (GAC) treatment trains. • The system runs continuously when water is present in the ditch. • Operates under WPDES General Permit No. WI-0046566-07-0, requiring daily flow recording and weekly analytical sampling for PFOA, PFOS, and other water quality parameters. Monthly discharge monitoring reports (DMRs) are submitted to WDNR. Additionally, semi-annual operation, maintenance, and optimization progress reports are submitted to WDNR to address pertinent details from WDNR Form 4400-194.	Semi-Annual Operation, Maintenance and Optimization Progress Report #12 (Arcadis 2025c)
Ditch B Treatment System	20219 - Present	• System was implemented in November 2019 to treat PFAS-impacted water in Ditch B. • Ditch B is a Federal Emergency Management Agency-regulated floodway; therefore, the intake structure was installed such that no flow obstructions exist above the original channel invert elevation. A rock cross vane and scour pool were installed around the intake structure to allow for more efficient capture of surface water within the stream and to mitigate siltation at the intake screen. Additionally, this intake configuration allows aquatic wildlife to pass through the stream unimpeded. • The Ditch B treatment system operates at up to 700 gpm using a GAC treatment train with a gravity sedimentation and filtration system to remove total suspended solids. • Operates under WPDES General Permit No. WI-0046566-07-0, requiring daily flow recording and weekly analytical sampling for PFOA, PFOS, and other water quality parameters. Monthly DMRs are submitted to WDNR. Additionally, semi-annual operation, maintenance, and optimization progress reports are submitted to WDNR to address pertinent details from WDNR Form 4400-194.	Semi-Annual Operation, Maintenance and Optimization Progress Report #11 (Arcadis 2025d)

Groundwater Interim Remedial Action

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
Groundwater Extraction and Treatment System (GETS)	2022 - Present	• Operation of the GETS began in November 2022 to reduce PFAS discharges from groundwater to Ditch B, remove PFAS mass existing in the recovered groundwater, and significantly reduce PFAS mass flux throughout the groundwater plume. • More than 256 million gallons of water have been treated as of March 2025. Currently 8 extraction wells operate consistently; an additional 5	GETS Short-Term Monitoring Report #4 (Arcadis 2024f)

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
		wells will be in operation later this year (2025) following the completion of GETS optimization activities to further enhance plume capture. • Samples collected from Ditch B as part of the GETS monitoring program show a significant decrease in PFAS concentrations in the ditch since the GETS began full 24-hour operation on January 11, 2023. • Optimization efforts related to GETS performance, including the installation of 5 additional extraction wells to further enhance plume capture, continued throughout 2024 and into 2025 (Arcadis 2024f).	

Sanitary Sewer Rehabilitation Interim Remedial Action

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
Sewer Rehabilitation	2019 –2021	• In 2019, Tyco assessed and repaired sections of sanitary sewer located at the FTC that connected to the City of Marinette's municipal sewer system. • The objectives of the rehabilitation included: cleaning and inspecting sanitary sewer lines and manholes at the FTC using closed-circuit television; dye testing to verify discharge locations of select buildings and to identify unused laterals; rehabilitating manholes with noted infiltration via ground injection or repair; rehabilitating sewer pipes with noted infiltration via installation of cured-in-place lining systems in concrete sewers and sealing target areas, such as joints in polyvinyl chloride (PVC) sewers. • Based on confirmation sampling results, PFAS inputs to the sanitary sewer have been mitigated. • Tyco constructed the Advanced Research and Testing Facility, which includes a wastewater treatment facility where industrial wastewater is treated before being discharged to the City of Marinette in accordance with an industrial pretreatment discharge permit. Because Tyco no longer blends, tests or sells PFAS-containing foam as of July 2024, only nonfluorinated foams are present at the Site and are treated in industrial wastewater.	Sanitary Sewer Rehabilitation Completion Report (Arcadis 2021f)

Soil Interim Remedial Action

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
Soil Removal	2021 – 2023	• Focused soil removal based on soil sampling completed in and around the OTA from 2013 to 2020. • Several limited areas of the OTA, where accumulated concentrations of PFOA and PFOS were present in soil, were excavated. • Materials excavated during construction of the Advanced Research and Testing Facility (i.e., soil, concrete, and debris) and stockpiled soil at the Site were also included in the interim remedial action. • Excavation of accumulated areas was completed in July 2022.	Soil Interim Remedial Action and Removal Report (Endpoint 2023)

Remedial Actions	Dates	Descriptions of Remedial Actions	Most Recent Document
		• All materials were disposed of at an out-of-state permitted facility.	

3 Interim Long Term Monitoring Objectives and Completed Scope

This section provides a summary of the Interim LTM objectives and completed scope through March 2025, which marks the end of the first year of the interim LTM program. The objectives of the interim LTM program are to continue collecting data that will be used to document the stability and attenuation of the site-related PFAS in groundwater and to verify that concentrations of site-related PFAS in surface water in Ditches A, C, and D are decreasing over time. Interim LTM groundwater monitoring events were completed in September 2024, October/November 2024 and February 2025; one interim LTM surface water monitoring event was completed in October 2024. During the October/November 2024 sampling events, GETS groundwater and surface water monitoring was conducted concurrently. The sampling and analysis associated with the Interim LTM Plan is conducted in accordance with NR 724.17 and specifically the environmental standards established in Wisconsin and regulated by the WDNR. The laboratory analytical methods, method detection limits, and reporting limits are outlined in the QAPP (Arcadis 2024b).

The following tables and figures provide the interim LTM planned activities, completed events, and results: Groundwater and surface water sampling plans (**Tables 3-1** and **3-2**), VAP sampling results (**Table 3-3**), groundwater data (**Tables 3-6A** to **3-6F**), and surface water data (**Table 3-5** and **3-7**). Sampling logs, applicable WDNR forms (e.g., soil boring logs), analytical laboratory reports, and data validation reports associated with the interim LTM are provided as **Appendix B** through **E.**

3.1 Monitoring Well Installation

Additional monitoring wells were installed in accordance with the June 2024 RTCs (Arcadis 2024d) using methods describe in previously submitted site investigation work plans (Arcadis 2023b) and the QAPP (Arcadis 2024b). A summary of the well installations is provided in the following table. Monitoring well locations are presented on **Figure 2-2** and a summary of the construction details is provided on **Table 2-1**. Well construction and soil boring logs for these monitoring wells are provided in **Appendix C**.

Location	Well ID	Screen Interval (ft bgs)	Justification
“o”	PZ-90-20	10-20	Monitor northwestern plume boundary in the location of VAP-32.
“p”	VAP-PZ-88*	-	Monitor northwestern plume boundary in the location of VAP-13.
“r”	PZ-87-16 PZ-87-47	6-16 42-47	Monitor western plume boundary.
“s”	PZ-86-17 PZ-86-38	7-17 33-38	Monitor PFAS concentrations and plume stability at the FTC property boundary.
“t”	PZ-89-40	35-40	Monitor southeastern plume boundary at VAP-21/TW-02.

*The VAP location is provided. Monitoring wells will be installed in this location later in 2025.

Monitoring wells were installed in all locations except “p” (i.e., VAP-PZ-88), near the corner of Industrial Parkway South and Cleveland Avenue where installation is planned for later in 2025. At location “p”, VAP borings were completed to assess the geology and PFAS concentrations in groundwater, and to determine intervals in which to screen future monitoring wells. VAP groundwater samples were collected from three intervals (7 to 9 ft bgs; 19 to 21 ft bgs; 28 to 30 ft bgs), and based on these results, monitoring wells are expected to be screened from 6 to 16 ft bgs and 25 to 30 ft bgs at this location. At the City of Marinette’s request, monitoring wells will not be installed in this location until after the City’s planned road improvement work is complete this year.

3.2 Groundwater Monitoring

Groundwater monitoring was completed in September 2024, October/November 2024 and February 2025 in accordance with the Interim LTM Plan (Arcadis 2024a) and June 2024 RTCs (Arcadis 2024d). During the September 2024 quarterly sampling event, 10 monitoring wells were sampled in accordance with the original sampling plan proposed in the Interim LTM Plan (Arcadis 2024a). Since then, all quarterly sampling events have followed the revised plan (i.e., quarterly sampling at eight monitoring wells) presented in the June 2024 RTCs (Arcadis 2024d). During the October/November 2024 (semi-annual) sampling event, 100 existing monitoring wells were sampled, and a round of water levels were collected to evaluate groundwater flow. GETS LTM groundwater monitoring was completed concurrently with this interim LTM event.

The objectives and scope of the groundwater monitoring are as follows:

Event	Activities Completed to Meet Objective
Potentiometric Surface Monitoring	A comprehensive groundwater gauging event was completed in October 2024 with the objective of monitoring the potentiometric surface in the shallow overburden, deep overburden, and shallow bedrock. Data collected during the event (**Table 3-4**) were used to generate updated potentiometric surface maps (**Figures 3-1** to **3-2**) to document groundwater flow patterns and assess long-term water level trends. Generally, groundwater flow patterns remain consistent with previous interpretations (**Section 2.4**) and the GETS is influencing water levels in the areas surrounding extraction wells.
Groundwater Sampling	Groundwater sampling was completed in September 2024, October/November 2024 and February 2025 (**Table 3-1**). All newly installed monitoring wells (**Section 3.1**) were sampled in February 2025. Data collected during these events (**Tables 3-6A** to **3-6F**) were used to confirm the PFAS plume extent and to monitor conditions and concentrations within the identified plume boundary. Further detail on the results of these groundwater monitoring events are included in **Section 4.1**.

Monitoring wells within the Interim LTM Plan are grouped into four zones as indicated in **Table 3-1** and shown on **Figure 2-2**. All monitoring wells that were installed and sampled as part of the June 2024 RTCs have been incorporated into the Interim LTM Plan as indicated in **Table 3-1**.

The monitoring zones and sampling frequencies associated with the Interim LTM Plan are defined as follows:

- **FTC (Non-GETS)**: This zone encompasses the Site, excluding monitoring wells that are already included in the GETS LTM Plan. Monitoring wells in this zone will be sampled semi-annually for one more year and then annually thereafter. The sampling frequency of monitoring wells may be reduced to biennial if concentrations of PFAS are below Cycle 12 recommended enforcement standards for two consecutive sampling events or are redundant within a well cluster.
- **Northern Plume**: This zone of the plume is northeast of the Site and GETS monitoring network. Monitoring wells in this zone were sampled semi-annually for one year and will be sampled annually moving forward. The sampling frequency of monitoring wells may be reduced to biennial if concentrations of PFAS are below Cycle 12 recommended enforcement standards for two consecutive sampling events or are redundant within a well cluster.
- **Southern Plume**: This zone of the plume is southeast of the Site, within the PWSA north of Rader Road. Monitoring wells in this zone were sampled semi-annually for one year and will be sampled annually moving forward. The sampling frequency of monitoring wells may be reduced to biennial if concentrations of PFAS are below Cycle 12 recommended enforcement standards for two consecutive sampling events or are redundant within a well cluster.
- **Boundary Zone**: This zone forms a perimeter around all other zones and extends as far south as Rader Road. Monitoring wells in this zone were sampled semi-annually during the first year and will be sampled annually for the next two years.

In addition, quarterly groundwater monitoring at eight monitoring wells (**Table 3-1**) will continue through the second year of interim LTM. More information on the specific interim LTM well groups, sampling frequency, and the adaptive nature of the program is provided in the Interim LTM Plan (Arcadis 2024a). Details on the proposed changes to the monitoring program for Year 2 are described in **Section 5**.

3.3 Surface Water Monitoring

Surface water monitoring activities were conducted in accordance with the Interim LTM Plan (Arcadis 2024a) and June 2024 RTCs (Arcadis 2024d).

The objectives and scope of the surface water monitoring are as follows:

Event	Activities Completed to Meet Objective
Surface Water Gauging (2024 Interim LTM and GETS LTM)	A surface water gauging event was completed at eight locations associated with the interim LTM and nine locations associated with GETS LTM in October 2024, concurrent with the groundwater gauging event. Data collected during the events (**Table 3-5**) are illustrated on the shallow potentiometric surface map (**Figure 3-3**).
Surface Water Sampling (2024 Interim LTM)	One semi-annual surface water sampling event was planned for six interim LTM locations. Sampling was completed at four interim LTM locations in the ditches (**Table 3-2**) to confirm that the groundwater plume is not expanding and that surface water

concentrations are decreasing. Two of the six locations were dry and unable to be sampled. Further detail on the results of the LTM sampling are included in **Section 4.2**.

Additionally, data associated with the Ditch A and treatment system monitoring events have been included in this report for reference purposes.

4 PFAS in Groundwater and Surface Water

4.1 PFAS Distribution in Groundwater

Interim LTM data confirm the horizontal (**Figures 4-1** to **4-6**) and vertical (**Figures 4-7** to **4-12**) extents of PFOA and PFOS-impacted groundwater. These data support the existing CSM and establish clear bounds on the extent of PFAS in groundwater associated with the FTC. The interim plume monitoring has been separated into five sampling groups, The GETS LTM monitoring, FTC monitoring not included in the GETS LTM monitoring (FTC [Non-GETS]), Northeastern portion of the plume between the FTC and Stanton Street, the Southeastern portion of the plume, and monitoring within the Plume Boundary Zone. The GETS LTM monitoring is performed and reported under a separate workplan and submittal. Collectively, these data support the PFAS plume is delineated or contracting. This empirical observation will be confirmed in future deliverables using statistics once sufficient data are collected.

- **The Boundary Zone west and southwest** of the FTC, data from existing monitoring wells and newly installed monitoring wells (PZ-87 pair in location “r”) provide delineation to a “clean boundary” in groundwater. Groundwater elevation data from the expanded network of monitoring wells confirm that groundwater from the Site does not flow to the west and southwest of the FTC. Historical data show that no current or historical pathways exist to the west and southwest: no surface water drainage ditches ever flowed from the FTC in those directions; no utilities exist that might create transport pathways (Arcadis 2023a, 2024e).
- **The Southeast Plume within the PWSA,** data from existing monitoring wells and a newly installed monitoring well on Green Gable Road (PZ-89-40 in location “t”) continue to confirm that the southern plume limit is within the current PWSA boundary. Historical data support that Ditch A is not, and has never been, a pathway to impact groundwater downstream of Madsen Road and outside of the PWSA (Arcadis 2023a, 2024e). Recent monitoring in the Boundary Zone confirms the presence of a previously identified potential source of PFAS in the vicinity of County Road B and Madsen Road (Arcadis 2023a).
- **Northeast** of the FTC, samples from existing monitoring wells confirm the movement of PFAS toward the Stanton Street facility and a newly installed monitoring well (PZ-90-20 in location “o”) confirms the limit of the northwestern edge of the overburden plume within the City of Marinette.
- **East of the FTC**, data from existing monitoring wells, including GETS LTM data, continue to confirm that the core of the PFAS plume migrates toward Ditch B with the GETS extraction wells capturing most of this mass before it can discharge into Ditch B. Secondary lobes of the plume are moving at much lower concentrations toward peripheral discharges, leaving only dilute concentrations detectable near West Bay Shore Street. These lobes are attenuating due to the upgradient PFAS removal by the GETS. The extent of eastern lobes are monitored at well clusters PZ-61, PZ-81 and PZ-32, where maximum concentrations

of PFOA plus PFOS are 5.9 ng/L, 1.8 ng/L and 10.1 ng/L, respectively. Concentrations at PZ-61-11, the most eastern well have declined for 4 consecutive sampling events.

The extents of PFAS-impacted groundwater associated with the FTC and changes in the plume extents with time are discussed in more detail in the following sections.

4.1.1 Plume Extents

A semi-annual interim LTM event was completed at 100 monitoring wells in October/November 2024 across all monitoring groups (FTC [Non-GETS], Northern Plume, Southern Plume, and Boundary Zone). The sampling event was completed concurrently with the 2024 GETS groundwater monitoring event (an additional 26 monitoring wells), and data collected from both events were the primary data sets used to revise the existing plume maps and further confirm the spatial extent. Additional data incorporated into the interpretation of the PFOA and PFOS plume extents were collected in February 2025 as follows: 1) eight monitoring wells were sampled during the most recent quarterly interim LTM sampling event; 2) six newly installed monitoring wells associated with the interim LTM plan (PZ-86-17, PZ-86-38, PZ-87-16, PZ-87-47, PZ-89-40, and PZ-90-20) were sampled; and, 3) three newly installed monitoring wells associated with the Stanton Street SI (MW130S, MW131S, and MW131M) were sampled. Analytical results from the interim LTM sampling events are presented in **Table 3-6A-D**; results from the GETS monitoring are provided in **Table 3-6E**; and Stanton Street SI are provided in **Appendix F**.

The PFAS plume associated with the FTC is a mature plume. **Figures 4-1** through **4-6** depict the PFOA and PFOS plumes, which continue to support that the plumes are mature and delineated. In previous depictions of plume delineation (Arcadis 2024e), the recommended enforcement standard of 20 ng/L and preventative action level of 2 ng/L for PFOA plus PFOS were used. The figures in this report are presented based on the current (WDHS Cycle 12) recommended enforcement standard for both PFOA and PFOS of 4 ng/L.

4.1.1.1 Isoconcentration Maps

The current depiction of the extents of PFOA and PFOS in the shallow overburden, deep overburden, and shallow/weathered bedrock are provided on **Figures 4-1**through **4-6**. The figures use interim LTM data, supplemented by GETS LTM data, collected through February 2025. **Table 3-1** provides information on which wells were included with interim LTM events and PFAS data are provided in **Table 3-6A-E** and **Appendix F**.

PFOA and PFOS preferentially migrate through coarser-grained soils and weathered bedrock (higher hydraulic conductivity), and around the silts and clays (lower hydraulic conductivity). Based on current and historical data, including data from the newly installed PZ-87 well pair, there is no evidence of any PFAS compounds migrating west of the FTC or in competent bedrock beneath the weathered rock. Consistent with previous reporting, the highest PFOA and PFOS concentrations from FTC-related sources are found in overburden groundwater less than 50 feet below land surface between the OTA and Ditch B (**Figures 4-3** and **4-4**). In general, concentrations are decreasing as constituents migrate in groundwater with distance.

4.1.1.1.1 Overburden

The confirmed lateral extents of the PFAS plume in overburden have been affected by seasonal variations in precipitation, groundwater elevations, and groundwater discharge to local streams (ditches). The groundwater to surface-water interactions are significantly less due to the GETS pumping, especially between the PFAS plume

and Ditch B, that have also limited the movement of the PFAS plume to the east, northeast and southeast. The highest groundwater concentrations of PFOA and PFOS are beneath and east of the OTA where peak concentrations of PFOA plus PFOS were historically detected at concentrations greater than 100,000 ng/L.

On the eastern boundary of the plume (onsite) and as the plume moves toward Pierce Avenue, there is a contrast in groundwater concentrations between shallow groundwater near the water table and deeper groundwater above a silt/clay layer (overburden aquitard) approximately 50 feet below land surface (**Figures 4-1** to **4-4**). There is a distinct contrast in PFAS concentrations below the FTC once groundwater flows eastward from the OTA. At the water table, the first encountered groundwater typically has concentrations of PFOA and PFOS less than 20 ng/L due to accretion from precipitation recharge while deeper groundwater in the center of the plume has PFOA concentrations above 10,000 ng/L and PFOS concentrations above 1,000 ng/L. The highest concentrations of PFAS are being captured and treated by the GETS.

As the PFAS plume nears Ditch B, groundwater flow directions are upward with shallow and deeper groundwater blending before groundwater discharges into Ditch B. Historically the average PFOA plus PFOS concentration in surface water was approximately 2,100 ng/L. However, PFAS concentrations in Ditch B have been declining since the GETS began continuous operations on January 11, 2023 reducing the amount of upwelling into Ditch B. During the most recent weekly surface water sampling event (March 10, 2025), the maximum concentrations of PFOA and PFOS in Ditch B, upgradient of the treatment system, were 170 ng/L and 23 ng/L, respectively (Arcadis 2024f). In addition to the GETS, the Ditch B treatment system continues to remove PFAS in surface water as evidenced by the results from post-treatment surface water sample location SW-L03 (see **Section 4.2.2**).

To the east and northeast of Ditch B, FTC-related PFAS concentrations in shallow overburden groundwater decline significantly as the majority of the plume has historically discharged to Ditch B (now primarily intercepted by the GETS). The shallow overburden groundwater concentrations of PFOA east and northeast of Ditch B are between 4 and 100 ng/L (**Figure 4-1**), while PFOS concentrations are between non-detect and 20 ng/L (**Figure 4-2**). At the eastern boundary of the plume, a portion of the dilute PFOA plume interacts with Ditch C and the surrounding wetlands (PZ-61-11 and SW-30). Concentrations in groundwater are 5.9 ng/L and not-detected for PFOA and PFOS, respectively, while concentrations in surface water are 15.0 ng/L and 2.4 ng/L for PFOA and PFOS, respectively which are below surface criteria (**Figures 4-1** and **3-3**).

In deep overburden upgradient of the GETS, the highest concentrations of PFOA are greater than 10,000 ng/L. This area is also where the highest concentrations of PFOS in the overburden are located with maximum levels above 10,000 ng/L. This portion of the PFAS plume is captured by the GETS. Following continued operation of the GETS and implementation of the GETS optimization, PFAS impacts upgradient of the GETS extraction wells, and to the east and northeast of Ditch B are expected to continue to decline.

To the southeast of the FTC, the PFAS plume is a result of runoff from the OTA into Ditch A, interaction between groundwater and surface-water along the north branch of Ditch A, and groundwater flow. South of University Drive, the north branch of Ditch A is consistently losing, and prior to construction of the Ditch A treatment system to remove PFAS from surface water, this losing condition enabled runoff containing PFAS from the OTA to flow into Ditch A and recharge groundwater from surface water. The infiltrating PFAS migrated with groundwater east toward Green Bay, forming the southeast portion of the PFAS plume, which extends into the northern portion of the PWSA. Within the PWSA, concentrations of PFOA in shallow groundwater are less than 20 ng/L (**Figure 4-1**), and there are no concentrations of PFOS above 4 ng/L (**Figure 4-2**). In deep overburden groundwater, impacts above 20 ng/L are limited to the northern portion of the PWSA, with sporadic detections of PFOA above 4 ng/L in

other portions of the PWSA (**Figure 4-3**). Data from newly installed monitoring well PZ-89-40 on Green Gable Road further support the plume boundaries (**Figures 4-3** and **4-4**).

Following the installation of the Ditch A treatment system in 2019, PFAS-containing runoff has been captured and treated onsite. Downgradient of the treatment system, a small section of the ditch occasionally experiences gaining conditions when groundwater elevations are higher than usual (i.e., during periods of heavy precipitation). When this happens, elevated PFAS concentrations in this section of the ditch (i.e., SW-26A) have been observed; however, this area typically has little to no flow and contributes little (if any) PFAS mass to Ditch A downstream (see **Section 4.2.1**). As discussed previously, the GETS system is undergoing expansion to include additional extraction wells within the southern portion of the FTC to capture groundwater flowing eastward toward the GETS extraction wells, discharging to Ditch A during periods of higher groundwater elevations, and which may be periodically migrating to the southeast. The new extraction wells are expected to be operational spring 2025.

Downstream of the north branch of Ditch A within the PWSA, the groundwater and surface water interaction reverses, and the ditch transitions from losing (i.e., surface water seeping into groundwater) to consistently gaining (i.e., groundwater is seeping into Ditch A). Concentrations of PFAS in the downstream section of Ditch A (i.e., in the gaining section flowing south toward the Little River), are below the WDNR surface water standards and significantly lower than those in the north branch. Results of groundwater samples from historical VAP borings (Arcadis 2018b, 2024e) and shallow monitoring well PZ-82-16 (**Table 3-D**), adjacent to Ditch A illustrate the absence of a surface water to groundwater pathway downstream of the north branch of Ditch A. The sporadic presence of low concentrations of PFAS in groundwater in these locations, illustrated on **Figures 4-1** to **4-4**, differs in both mixture and magnitude from PFAS detections in surface water; however, these low detections of PFAS are consistent with ambient and residential PFAS sources known to affect shallow groundwater outside of the Tyco plume boundary.

4.1.1.1.2 Weathered Bedrock

The weathered rock zone comprises a narrow horizon (typically less than 20 feet) formed on the immediate bedrock surface in which fractures and weathered bedrock have sufficient permeability to transmit water. In most places, the weathered bedrock is confined by the overburden aquitard. In all places, the zone is isolated below by the bedrock aquitard, which prevents downward migration of PFAS. The permeability in the weathered bedrock is primarily in bedding plane fractures and stress-relief joints, and therefore, is highly heterogenous and anisotropic.

PFAS beneath the OTA migrated into weathered bedrock via the abandoned production well, and the plume is migrating in bedding plane fractures oriented with the bedrock strike. PFOA concentrations in weathered bedrock are highest at the FTC (i.e., greater than 10,000 ng/L) and decrease by one or more orders of magnitude in the downgradient portion of the plume. PFOS concentrations above 4 ng/L are limited to the FTC.

PFAS impacts in the weathered bedrock plume will be addressed as part of the GETS expansion (Arcadis 2024f).

4.1.1.2 Cross-Sections of the Plume

A series of three cross-sections (**Figures 4-7** through **4-12**) were prepared to illustrate the vertical extents of PFOA and PFOS and the groundwater transport pathways. The three cross-sections prepared are as follows:

- **Cross-Section A-A'** (**Figure 4-7 and 4-8**) is oriented southwest to northeast along the strike of the bedrock surface, from upgradient of the plume to the Menominee River. Groundwater on this cross-section flows from left to right, and the highest PFAS concentrations are in overburden groundwater

beneath the FTC, between Ditch A and Ditch B. Peak concentrations of PFOA and PFOS are greater than 10,000 ng/L and 1,000 ng/L, respectively, in the overburden between Ditch A on the FTC and Ditch B, prior to extraction by the GETS, as illustrated on the cross-section. Between the western property boundary and Ditch A, the overburden plume boundaries were confirmed by PFOA and PFOS results from newly installed monitoring wells PZ-87-16 and PZ-87-47. Between Ditch B and the Stanton Street facility, overburden groundwater concentrations of PFOA in most monitoring wells are less than 100 ng/L as the majority of the plume has historically been intercepted by Ditch B and is now primarily intercepted by the GETS; FTC-related PFOS impacts are limited and do not extend past Ditch B. In weathered bedrock, peak concentrations of PFOA are more than 10,000 ng/L along the A-A' transect, and the highest concentrations are onsite; PFOS concentrations in weathered bedrock are significantly lower (less than 100 ng/L) and are limited to the FTC. The implementation of the GETS expansion, which includes extracting groundwater from weathered bedrock (EX-14), is expected to capture these concentrations. The shallow bedrock plume is the result of the pathway associated with the abandoned production well located on the FTC east of Ditch A. Hydraulic testing prior to abandonment (June 2019) indicated that groundwater at the well was sourced from the weathered bedrock, not the competent bedrock. When the production well was in use, the downward gradient from pumping the well pulled PFAS-affected groundwater from the overburden downward into weathered bedrock. The thick deposits of clay and till (i.e., the overburden aquitard) are minimally affected by the plume.

- **Cross-Section B-B'** (**Figures 4-9** and **4-10**) is oriented northwest to southeast along the slope of the bedrock surface, from upgradient of the plume toward Green Bay. Groundwater flow directions are variable along this cross-section; groundwater elevations generally decrease from B to B' while groundwater flow is primarily into the page. The peak concentrations of PFOA and PFOS are beneath the FTC, and data support that the PFOA plume above 4 ng/L does not extend south of Rader Road while the PFOS plume above 4 ng/L does not extend further than the north branch of Ditch A. PFOA and PFOS concentrations in weathered bedrock are inferred from shallow bedrock wells not shown on this cross-section (see **Figures 4-5** and **4-6**). PFAS impacts in the weathered bedrock do not extend further south than the PZ-46 well cluster.
- **Cross-Section C-C'** (**Figures 4-11** and **4-12**) is oriented west to east, from upgradient of the plume and the FTC toward Green Bay. Groundwater flow directions in overburden are primarily left to right along this cross-section with groundwater elevations generally decreasing from C to C'. The peak PFOA and PFOS concentrations in overburden are between Ditch A and Ditch B; FTC-related PFOS impacts are limited and do not extend past Ditch B. East of Ditch B, low PFOA concentrations (between 4 ng/L and 10 ng/L) interact with Ditch C, and the groundwater and Ditch C surface concentrations of PFAS are generally consistent. The ongoing GETS optimization activities are designed, in-part, to address the portion of the plume between Ditch B and Ditch C, preventing further migration of PFAS impacts beneath Ditch B.

4.1.2 Plume Changes with Time

The purposed of the interim LTM groundwater monitoring program, supplemented by the GETS LTM and other applicable programs, is to monitor the delineated extent and magnitude of the Site-related PFAS impacts in groundwater and confirm that the plumes are stable or decreasing. The plume extents, discussed in detail in **Section 4.1.1**, continue to support that the PFOA and PFOS plumes are mature and delineated. In general, the current depictions of the PFOA plume are similarly shaped to previous depictions of the PFOA plus PFOS plume (**Appendix G**; Arcadis 2024e) as PFOA comprises the majority of the PFOA plus PFOS concentrations used in

previous plume depictions. Additionally, the extent and magnitude of the PFOS plume are significantly less than the extent and magnitude of the PFOA plume in both the overburden and weathered bedrock.

Groundwater samples will continue to be collected at regular intervals across the interim LTM groups to monitor that the plumes are stable or decreasing. Additionally, a small group of monitoring wells (**Table 3-1**) will continue to be sampled at a higher frequency (i.e., quarterly) through the second year of interim LTM. Data from this small group of wells, along with three other key wells within the PWSA (MW-101-72, PZ-72-73, and PZ-33-33), have been plotted over time to track concentration trends and mixtures (**Figures 4-13** to **4-15**).

Overall, the PFAS plume is delineated. Trend plots for monitoring wells along the exterior of the plume and upgradient of Green Bay (i.e., PZ-26-36, MW-100-32, PZ-61-11, PZ-74-32, PZ-74-80 and TW-04) support that the PFAS plume is not expanding and that concentrations have decreased over time at several locations. At the northern boundary of the PWSA beneath the connection between Ditches A and D, the deep overburden well MW-101-72 has exhibited locally higher concentrations of PFOA and PFOS since its installation (2018). Recently, PFAS concentrations at this location have declined between spring and fall 2024 by 360 ng/L and are expected to continue this trend following the implementation of the GETS expansion. More generally, concentration trends within the northern and southern lobes of the PFAS plume are expected to decline further, causing the overall extent of the impacts to contract.

4.2 PFAS Distribution in Surface Water

Surface water samples were collected from four of the six monitoring locations on Ditches A, C, and D (SW-10, SW-30, SW-33, and SW-36) during the semi-annual interim LTM sampling event in October 2024. Sample locations SW-12 on Ditch A and SW-43 on Ditch E were dry; therefore, no samples were collected from those locations. Sample results have been compared to the applicable WDNR surface water standards (i.e., 8 ng/L for PFOS and 95 ng/L for PFOA) and are provided in **Table 3-7** and posted on **Figure 3-3**. The results associated with interim LTM surface water sampling event were all below the WDNR surface water standards.

Recent data from monitoring locations downgradient of the ditch treatment systems (i.e., SW-26A on Ditch A and SW-L03 on Ditch B) have also been included in **Table 3-7** and on **Figure 3-3** for reference purposes. The data associated with the ditch treatment system operations were most recently reported in the Semi-Annual Operation, Maintenance, and Optimization Reports (Report #12 for Ditch A and Report #11 for Ditch B; Arcadis 2025c, 2025d). Historical surface water data are summarized in **Appendices F**.

4.2.1 Ditch A

During the October 2024 sampling event, Ditch A was dry near the intersection of Madsen Road and County Road B (SW-12). Further downstream, in the gaining section of Ditch A, a surface water sample was collected where the ditch crosses Rader Road (SW-10). Based on the results from this sample, concentrations of PFOA (13 ng/L) and PFOS (4.6 ng/L) in Ditch A at the southern boundary of the PWSA remain below WDNR surface water standards.

Downstream of the Ditch A treatment system, surface water samples are collected at SW-26A (located on University Drive) on a monthly basis when flow is observed in the ditch. Based on recent sampling (completed in

December 2024[1]), concentrations of PFOA and PFOS were above the WDNR surface water standards in this location (**Table 3-7**; **Figure 3-5**). As discussed in **Section 4.1.2**, location SW-26A is in a small section of the ditch that occasionally experiences gaining conditions when groundwater elevations are higher than usual (i.e., during periods of heavy precipitation). When this happens, elevated PFAS concentrations in this section of the ditch have been observed; however, this area typically has little to no flow and contributes little (if any) PFAS mass to Ditch A downstream. The additions of extraction wells EX-10 and EX-11 as part of GETS optimization are expected to capture groundwater flowing eastward toward the GETS extraction wells or discharging to Ditch A during periods of higher groundwater elevations, which may periodically be migrating to the southeast. EX-10 and EX-11 are expected to be operational by spring 2025.

While the surface water in the north branch contained PFAS above standards, the branch typically has little to no flow and contributes little (if any) PFAS mass to Ditch A downstream. Concentrations of PFAS in the downstream section of Ditch A, running south towards the Little River, are below WDNR surface water standards and significantly lower than those in the north branch.

4.2.2 Ditch B

Ditch B is monitored as part of the GETS LTM, and recent data continue to support that operation of the GETS is reducing upwelling of groundwater, and therefore, reducing concentrations of PFAS in the ditch (Arcadis 2024f). Upwelling of groundwater into the ditch is expected to be further reduced following the implementation of current and ongoing optimization efforts (i.e., increasing pumping capacity).

Downstream of the Ditch B treatment system, the ditch is also monitored monthly as part of the sampling program specific to the operation of the treatment system. During recent sampling events in Q4 2024, concentrations of PFOA at downgradient location SW-L03 were below the surface water standard, ranging from 14 ng/L to 91 ng/L; PFOS concentrations were below or just above the standard, ranging from 2.5 ng/L to 12 ng/L. The highest concentration of PFOA and the exceedance of the standard for PFOS occurred in November 2024, when the Ditch B stream flow rate exceeded the maximum system operating flow rate (700 gpm). As previously discussed, additional work to optimize the GETS will further reduce PFAS concentrations in Ditch B.

4.2.3 Ditches C, D, and E

During the October 2024 sampling event, a surface water sample was collected from Ditch C where the ditch crosses West Bay Shore Street (SW-30), along the eastern boundary of the shallow plume extents. In this area, PFAS concentrations in surface water are consistent with concentrations in groundwater (at PZ-61-11). Based on the results from this sample, concentrations of PFOA (15 ng/L) and PFOS (2.4 ng/L) in Ditch C remain below WDNR surface water standards.

Two surface water samples were collected from Ditch D (SW-33 and SW-36) during the October 2024 sampling event. PFAS concentrations in Ditch D at Shore Drive (SW-33) have decreased compared to previous sampling events, and concentrations of PFOA (8.1 ng/L) and PFOS (2.9 ng/L) were below WDNR surface water standards during the October 2024 sampling event. Upgradient concentrations of PFOA (22 ng/L) and PFOS (3.5 ng/L estimated) in Ditch D (SW-36) remain below standards.

[1] The ditch was dry and/or not flowing at SW-26A during the monthly sampling events completed from August 2024 through November 2024.

Ditch E was dry during the October 2024 sampling event; therefore, no sample was collected from the ditch at Shore Drive (SW-43). When Ditch E has contained sufficient water to collect a sample in the past two years (i.e., May 2023 and June 2024; **Appendix F**), the concentrations of PFOA and PFOS were below the surface water standards.

5 Conclusions and Recommendations

The results of the groundwater and surface water monitoring described in this report, along with historical data collected during investigations completed over a period of more than 5 years, demonstrates that PFAS impacts in groundwater and surface water associated with the FTC have been delineated in accordance with WDNR requirements under NR 716.

The LTM findings support the existing CSM, summarized below.

- **East**: The east-trending groundwater lobe carries the highest PFAS concentrations and the majority of the plume mass; previously, most of this mass was intercepted by Ditch B, a historically engineered drainage channel. A water treatment system on Ditch B has been in operation since 2019, capturing and removing PFAS from the water within the stream. As described in the 2024 Site Investigation Status and Interim LTM Report (Arcadis 2024e), this lobe of the plume is captured by the GETS, which began operations in November 2022 to intercept groundwater containing PFAS before discharging to Ditch B. The GETS effluent has consistently tested at non-detect for PFAS and is discharged to Ditch B near Pierce Avenue. Samples collected from Ditch B as part of the GETS monitoring program have shown a significant decrease in PFAS levels since the GETS began full 24-hour operation at the beginning of January 2023 (Arcadis 2023c). Optimization efforts related to GETS performance within this portion of the plume, including the installation of additional extraction wells to further enhance plume capture, continued throughout 2024 and into 2025 (Arcadis 2024f).
- **Northeast**: The northeast lobe of the plume has formed from a relatively small component of the eastern lobe that historically flowed under Ditch B and under the City of Marinette, which is served by a non-groundwater source of municipal water. This lobe of the plume is also being captured by the GETS. Optimization efforts related to GETS performance within this portion of the plume continued throughout 2024 and into 2025 (Arcadis 2024f).
- **Southeast:** The southeast lobe of the plume is located within the potable well sampling area (PWSA). This lobe consists of PFAS transported in two ways, the first directly by groundwater moving into the PWSA from the OTA, and the second, which is historical in nature, was through infiltration from Ditch A surface water into the groundwater. Ditch A is a drainage channel that historically carried PFAS in runoff from within the FTC. In 2019, a treatment system was installed in Ditch A to intercept and treat any PFAS in the ditch, which flows offsite to the south. The Ditch A treatment system mitigates additional potential PFAS migration into the PWSA from onsite surface water. Data collected as part of historical investigations have confirmed that Ditch A is not, and has never been, a pathway to impact groundwater that is downstream of the confluence of the North and West Branch of Ditch A, just south of Madsen Road, and outside of the PWSA.

  Currently, the GETS system is undergoing expansion to include additional extraction wells to capture groundwater migration to the southeast (2024f).

  In 2017, Tyco began providing bottled water and point-of-entry treatment (POET) units for residential wells within the PWSA that might have been affected by PFAS related to Tyco's historic operations at the FTC. At

this time, every property in the PWSA either (a) is non detect for PFAS (including those that have a new private deep bedrock well), or (b) is receiving bottled water and/or has a POET that Tyco installed and maintains. As noted, Tyco is currently in the process of delivering long-term drinking water solutions to this area and has already installed 100 private deep bedrock wells as requested by property owners.

- **Bedrock:** PFAS are also present in groundwater within a narrow horizon of weathered bedrock. This horizon occurs immediately beneath the overburden, which consists of a sand aquifer that is typically underlain by glacial till. Groundwater within the weathered bedrock flows northeast toward the Menominee River. The weathered bedrock zone is a pathway for PFAS to migrate to the northeast under the City of Marinette, below the northeast lobe of the shallow PFAS plume in the sand aquifer as previously described. The GETS optimization also includes extraction of the weathered bedrock plume (Arcadis 2024f).

Interim LTM Results: Groundwater

The Interim LTM data, including data collected from the six recently installed monitoring wells, support the existing CSM and establish clear bounds on the extent of PFAS in groundwater associated with the FTC. Across all Interim LTM groups (FTC[Non-GETS], Northern Plume, Southern Plume, and Boundary Zone), the PFAS plume is stable.

- **To the west and southwest** of the FTC, data from existing monitoring wells and newly installed monitoring wells (PZ-87 pair in location “r”) provide delineation to a “clean boundary” in groundwater. Groundwater elevation data from the expanded network of monitoring wells confirm that groundwater from the Site does not flow to the west and southwest of the FTC. Historical data show that no current or historical pathways exist to the west and southwest: no surface water drainage ditches ever flowed from the FTC in those directions; no utilities exist that might create transport pathways (Arcadis 2023a, 2024e).
- **To the southeast, within the PWSA,** data from existing monitoring wells and a newly installed monitoring well on Green Gable Road (PZ-89-40 in location “t”) continue to confirm that the southern plume limit is within the current PWSA boundary. Historical data support that Ditch A is not, and has never been, a pathway to impact groundwater downstream of Madsen Road and outside of the PWSA (Arcadis 2023a, 2024e). Recent monitoring in the Boundary Zone confirms the presence of a previously identified potential sources of PFAS in the vicinity of County Road B and Madsen Road (Arcadis 2023a) and other unidentified sources to the west.
- **To the north** of the FTC, samples from existing monitoring wells and a newly installed monitoring well (PZ-90-20 in location “o”) bound the northwestern edge of the overburden plume within the City of Marinette.
- **To the east**, data from existing monitoring wells, including GETS LTM data, continue to confirm that the core of the plume migrates to Ditch B, and the secondary lobes of the plume are at much lower concentrations toward peripheral discharges, leaving only dilute concentrations detectable near West Bay Shore Street.

Interim LTM Results: Surface Water

Surface water samples were collected from Ditches A, C, and D during the semi-annual sampling event in October 2024. Ditch E was dry; therefore, no sample was collected.

- **Ditch A:** Concentrations of PFOA and PFOS in Ditch A downgradient of Madsen Road, outside of the PWSA (i.e., SW-10), remain below the surface water standards of 95 ng/L PFOA and 8 ng/L PFOS.

- **Ditch C:** Concentrations of PFOA and PFOS in Ditch C at West Bay Shore Street (SW-30) remain below standards.
- **Ditch D:** PFAS concentrations in Ditch D at Shore Drive (SW-33) have decreased compared to previous sampling events. Concentrations of PFOA and PFOS were below the surface water standards during the October 2024 sampling event. Upgradient concentrations of PFOA and PFOS in Ditch D (SW-36) remain below standards.
- No PFAS concentrations in surface water outside of the delineated plume boundaries are above WDNR standards.

Proposed Year 2 Interim LTM Groundwater Monitoring Plan

The proposed Year 2 interim LTM groundwater monitoring plan is provided in **Table 5-1**. In accordance with the Interim LTM Plan (Arcadis 2024a), the sampling frequency for a monitoring well inside the plume may be reduced to biennial (i.e., every two years) if:

- PFAS concentrations are less than criteria (i.e., Cycle 12 recommended enforcement standards) for two consecutive events, or
- the well is determined to be redundant within a well cluster (i.e., the monitoring well is screened within the same hydrostratigraphic unit and has similar PFAS concentrations) after two consecutive events.

Based on the groundwater data collected in the first year of interim LTM (**Tables 3-6A** to **3-6D**), the sampling frequency is proposed to be reduced to biennial for five monitoring wells (PZ-68-66, MW129M-45, PZ-35-37, PZ-70-55, and PZ-70-83) that have had consistent groundwater results below the current criteria and one monitoring well (MW013M-R) that is redundant within the well cluster. These six monitoring wells are proposed to be sampled next in the fourth quarter of 2026.

With the exception of the above-mentioned monitoring wells, monitoring wells in the FTC [Non-GETS] group will be sampled semi-annually (i.e., Q2 and Q4 2025) and monitoring wells in all other groups (Northern Plume, Southern Plume, and Boundary Zone) will be sampled annually (i.e., Q4 2025) during the second year of interim LTM. Additionally, a subset of monitoring wells (i.e., eight monitoring wells identified in the June 2024 RTCs) will continue to be sampled on a quarterly basis.

Surface water monitoring at six locations (Ditches A, C, D, and E) will continue to be conducted on a semi-annual basis.

Conclusions

The data continue to confirm that the plume is delineated. The interior portions of the plume, within the area of influence of the GETS, show decreasing concentrations of PFAS. Data will continue to be collected to document the stability and attenuation of PFAS in groundwater.

No PFAS concentrations in surface water outside of the delineated plume boundaries are above WDNR standards. Surface water concentrations in Ditch B are significantly reduced compared to historic highs as a result of GETS operations. GETS optimization activities are engineered to further reduce the concentrations of PFAS in both Ditch B and Ditch A. The latest GETS optimizations will be fully operational by summer 2025.

6 References

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Tables

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Table 2-1

Construction of Monitoring Wells
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Year Installed	Zone	Northing	Easting	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Survey Date	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish
Interim LTM Plan: FTC (non-GETS) Plume Well Group											
FTC-2S	FTC	1993	S	462333.2	2577206.6	611.3	611.1	05/10/21	5	15	FM
FTC-2D	FTC	1993	D	462335.3	2577215.4	611.5	611.2	05/10/21	27	32	FM
FTC-31	FTC	1995	S	462049.3	2577284.7	NA	610.3	08/16/16	3	13	FM
FTC-34S	FTC	1996	S	462115.2	2577669.0	NA	608.5	08/16/16	3	13	FM
FTC-34D	FTC	1996	D	462117.0	2577666.1	NA	608.7	08/16/16	28	33	FM
FTC-44	FTC	2003	S	461808.4	2577590.8	NA	611.3	08/16/16	5	15	SU
HMW-2-3S[1]	FTC	-	S	461171.6	2576750.1	611.3	613.2	12/06/22	6	16	SU
HMW-2-3D[1]	FTC	-	D	461173.3	2576753.0	611.4	614.4	12/06/22	32	42	SU
PZ-1D	FTC	2010	BR	463765.5	2579848.6	NA	606.2	08/16/16	63.5	68.5	SU
PZ-4S[2]	FTC	2010	D	NA	NA	NA	607.9	NA	36	41	SU
PZ-4D	FTC	2010	BR	462514.6	2578515.2	605.8	607.9	01/07/21	68.5	73.5	SU
PZ-9	FTC	NA	D	463351.7	2578076.4	NA	611.2	08/16/16	38	43	SU
PZ-11	FTC	NA	D	461872.6	2578131.0	NA	611.4	04/29/16	41	46	SU
PZ-14S	FTC	NA	S	462736.7	2577956.9	NA	610.8	08/16/16	4	19	SU
PZ-14D	FTC	NA	D	462739.6	2577964.8	NA	611.2	08/16/16	25	35	SU
PZ-19	FTC	NA	D	463133.7	2580048.4	NA	608.7	04/29/16	27	37	SU
PZ-59-21	Offsite	2022	S	463843.5	2575547.5	613.6	613.1	08/31/22	11	21	FM
PZ-65-16	FTC	2022	S	463214.8	2577133.1	610.1	609.7	08/31/22	6	16	SU
PZ-65-33	FTC	2022	D	463220.8	2577133.1	609.9	610.1	08/31/22	28	33	SU
PZ-67-16	FTC	2022	S	462134.2	2576628.1	611.8	611.4	08/31/22	6	16	FM
PZ-67-40	FTC	2022	D	462145.5	2576625.0	611.7	611.4	08/31/22	35	40	FM
PZ-68-16	FTC	2022	S	462087.9	2575878.5	610.9	613.5	08/31/22	6	16	SU
PZ-68-26	FTC	2022	D	462079.6	2575878.1	611.0	613.9	08/31/22	21	26	SU
PZ-68-66	FTC	2022	BR	462099.6	2575885.2	610.9	613.5	12/06/22	61	66	SU
PZ-69-24	FTC	2022	S	462530.0	2579219.3	612.3	614.8	12/06/22	14	24	SU
PZ-69-43	FTC	2022	D	462533.4	2579214.7	614.5	612.2	12/06/22	38	43	SU
PZ-86-17	FTC	2024	S	461305.5	2577968.0	612.5	614.9	02/17/25	7	17	SU
PZ-86-38	FTC	2024	D	461305.7	2577962.7	612.3	615.0	02/17/25	33	38	SU
Interim LTM Plan: Northern Plume Well Group											
MW003D	Stanton	-	BR	470592.1	2584078.7	584.6	587.3	NA	45	50	SU
MW013S-R	Offsite	2022	S	469102.6	2583255.0	589.9	589.3	12/06/22	9	19	FM
MW013M-R	Offsite	2022	D	469092.9	2583271.2	589.9	589.3	12/06/22	30	35	FM
MW013D-R	Offsite	2022	BR	469097.9	2583262.6	589.9	589.6	12/06/22	41	46	FM
MW042D	Stanton	-	BR	469846.6	2584162.1	NA	587.2	06/11/24	50	55	SU
MW046D	Stanton	-	BR	469473.3	2585481.9	NA	585.0	06/11/24	53.5	58.5	SU
MW064D	Stanton	-	BR	469426.3	2584598.4	NA	588.8	06/11/24	51.7	56.7	SU
MW125S-20	Offsite	2020	S	468124.9	2582658.0	596.5	596.2	01/07/21	10	20	FM
MW125M-35	Offsite	2020	D	468123.8	2582646.8	596.6	596.3	01/07/21	30	35	FM
MW125D-60	Offsite	2020	BR	468123.1	2582652.0	596.4	596.0	01/07/21	50	60	FM
MW128S-17	Offsite	2022	S	468745.6	2584546.1	595.6	595.1	12/06/22	7	17	FM
MW128M-30	Offsite	2022	D	468739.6	2584544.3	595.7	595.2	12/06/22	25	30	FM
MW129S-21	Offsite	2022	S	468500.1	2585920.6	586.1	585.3	12/06/22	11	21	FM
MW129M-45	Offsite	2022	D	468494.0	2585918.9	586.0	585.6	12/06/22	40	45	FM
PZ-28-14	Offsite	2019	S	467125.0	2583162.7	594.7	594.4	09/09/21	9	14	FM
PZ-28-54	Offsite	2019	D	467123.2	2583168.6	594.8	594.5	09/09/21	49	54	FM
PZ-28-75	Offsite	2020	BR	467127.7	2583152.3	594.6	594.3	01/07/21	65	75	FM
PZ-63-44	Offsite	2024	D	466838.4	2582055.9	594.6	594.2	06/19/24	39	44	FM
PZ-63-60	Offsite	2022	BR	466843.7	2582055.9	594.7	594.1	12/06/22	55	60	FM
PZ-79-16	Offsite	2024	S	464267.4	2583779.6	592.3	591.9	06/19/24	6	16	FM
PZ-79-25	Offsite	2024	D	464263.1	2583779.7	592.2	591.8	06/19/24	20	25	FM
PZ-79-32	Offsite	2024	D	464256.4	2583779.9	592.2	591.7	06/19/24	27	32	FM
PZ-90-20	Offsite	2025	S	468042.5	2581236.7	596.0	595.5	02/17/25	5	20	FM

Table 2-1
Construction of Monitoring Wells
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Year Installed	Zone	Northing	Easting	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Survey Date	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish
Interim LTM Plan: Southern Plume Well Group											
MW-101-16	Offsite	2018	S	459912.1	2580497.8	603.4	603.2	09/06/18	6	16	FM
MW-101-72	Offsite	2018	D	459907.9	2580496.3	603.5	603.2	09/06/18	62	72	FM
PZ-33-12	Offsite	2019	S	460123.9	2582902.9	594.7	594.3	09/09/21	7	12	FM
PZ-33-33	Offsite	2019	D	460123.7	2582897.4	594.6	594.3	09/09/21	28	33	FM
PZ-33-67	Offsite	2019	D	460123.1	2582892.7	594.6	594.4	09/09/21	57	67	FM
PZ-33-105	Offsite	2022	BR	459912.9	2582765.6	594.4	594.2	12/06/22	100	105	FM
PZ-34-17	Offsite	2019	S	457159.4	2583554.2	591.1	590.8	09/09/21	7	17	FM
PZ-34-84	Offsite	2019	D	457164.3	2583555.2	591.3	590.9	09/09/21	74	84	FM
PZ-35-17	Offsite	2019	S	459506.0	2577175.7	608.7	608.2	09/09/21	7	17	FM
PZ-35-37	Offsite	2019	D	459501.9	2577178.8	608.7	608.2	09/09/21	32	37	FM
PZ-46-19	Offsite	2020	S	459758.8	2578839.8	604.3	603.9	01/07/21	9	19	FM
PZ-46-40	Offsite	2020	D	459758.1	2578828.6	604.4	604.0	01/07/21	30	40	FM
PZ-46-65	Offsite	2020	D	459757.7	2578819.8	604.2	603.8	01/07/21	60	65	FM
PZ-70-17	FTC	2022	S	460233.9	2577370.9	608.7	611.5	12/06/22	7	17	SU
PZ-70-33	FTC	2022	D	460231.0	2577365.8	608.6	611.1	12/06/22	28	33	SU
PZ-70-55	FTC	2022	D	460222.5	2577349.2	609.2	611.9	12/06/22	50	55	SU
PZ-70-83	FTC	2022	BR	460225.2	2577361.7	608.6	611.6	12/06/22	73	83	SU
PZ-71-111	Offsite	2022	BR	461300.0	2580741.4	605.8	605.2	12/06/22	101	111	FM
PZ-72-73	Offsite	2024	D	458272.9	2580834.7	598.6	598.2	06/19/24	68	73	FM
PZ-74-32	Offsite	2024	D	458877.4	2583695.6	593.8	593.4	06/19/24	22	32	FM
PZ-74-80	Offsite	2024	D	458877.1	2583690.1	593.3	593.4	06/19/24	75	80	FM
PZ-76-34	Offsite	2022	D	459789.7	2584628.1	592.8	592.3	12/06/22	29	34	FM
TW-03	Offsite	2018	S	458244.3	2580830.6	598.3	598.1	11/06/18	10	20	FM
Interim LTM Plan: Boundary Zone Well Group											
MW-100-32	Offsite	2018	D	457304.1	2578843.5	602.1	601.5	09/06/18	22	32	FM
MW-100-68	Offsite	2018	D	457304.3	2578849.0	602.1	601.8	09/06/18	58	68	FM
MW-100-88	Offsite	2024	BR	457304.1	2578855.9	602.1	601.9	06/19/24	83	88	FM
MW126S-20	Offsite	2020	S	469387.1	2581781.3	598.4	598.1	01/07/21	10	20	FM
MW126D-40	Offsite	2020	BR	469386.5	2581775.5	598.4	597.8	01/07/21	30	40	FM
PZ-26-11	Offsite	2019	S	466609.4	2579203.4	597.9	597.8	09/09/21	6	11	FM
PZ-26-36	Offsite	2022	BR	466619.3	2579206.6	597.0	596.1	12/06/22	31	36	FM
PZ-44-73	Offsite	2019	D	454734.7	2580183.8	595.2	594.6	09/09/21	63	73	FM
PZ-60-20	Offsite	2022	S	461877.2	2574148.8	612.9	612.5	08/31/22	10	20	FM
PZ-61-11	Offsite	2022	S	463970.7	2587161.1	585.4	585.0	08/31/22	6	11	FM
PZ-62-62	Offsite	2022	D	466239.8	2586295.7	585.0	584.6	12/06/22	57	62	FM
PZ-66-20	FTC	2022	S	460222.5	2575675.8	613.9	616.1	12/06/22	10	20	SU
PZ-66-57	FTC	2022	D	460538.8	2575677.4	614.6	617.3	12/06/22	52	57	SU
PZ-73-16	Offsite	2022	S	455740.3	2578713.6	601.7	601.2	12/06/22	6	16	FM
PZ-73-32	*Offsite*	*2024*	*D*	*455733.7*	*2578699.8*	*602.1*	*602.0*	*06/19/24*	*27*	*32*	*FM*
PZ-73-75	Offsite	2022	D	455736.0	2578704.5	601.9	601.4	12/06/22	70	75	FM
PZ-75-18	Offsite	2022	S	457336.4	2577001.7	605.5	605.1	12/06/22	8	18	FM
PZ-77-16	Offsite	2022	S	458682.5	2575530.9	606.9	609.8	12/06/22	5.7	15.7	SU
PZ-78-17	Offsite	2024	S	467277.5	2586583.8	586.2	585.8	06/19/24	7	17	FM
PZ-78-74	Offsite	2022	BR	467282.2	2586583.8	586.1	585.7	12/06/22	71.5	73.5	FM
PZ-80-37	Offsite	2024	D	455276.6	2583157.1	595.6	595.1	07/17/24	32	37	FM
PZ-81-25	Offsite	2024	S	464302.0	2584667.5	590.9	590.7	06/19/24	20	25	FM
PZ-81-92	Offsite	2024	BR	464307.1	2584667.2	590.8	590.4	06/19/24	82	92	FM
PZ-82-16	Offsite	2024	S	456563.8	2578344.9	599.9	599.4	06/19/24	6	16	FM
PZ-83-50	Offsite	2024	D	454686.0	2579229.0	597.5	597.1	07/17/24	45	50	FM
PZ-85-69	Offsite	2024	BR	457336.5	2575645.9	604.2	604.1	06/19/24	64	69	FM
PZ-87-16	FTC	2024	S	461195.3	2575836.6	613.1	615.0	02/17/25	6	16	SU
PZ-87-47	FTC	2024	D	461203.4	2575837.8	613.1	615.6	02/17/25	42	47	SU
PZ-89-40	Offsite	2025	D	456278.6	2580956.2	594.1	593.6	02/17/25	35	40	FM
TW-01	Offsite	2018	S	454749.4	2580449.1	594.7	594.5	11/06/18	9.5	19.5	FM
TW-02	Offsite	2018	S	456286.9	2580955.6	594.1	593.8	11/06/18	10	20	FM
TW-04	Offsite	2018	S	455223.9	2583148.3	593.9	593.6	11/06/18	10	20	FM
TW-05	Offsite	2018	S	454646.6	2578511.1	597.8	597.5	11/06/18	10	20	FM

Table 2-1
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Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Year Installed	Zone	Northing	Easting	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Survey Date	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish
GETS LTM Well Group[3]											
MW-EX-2	FTC	2021	D	463835.9	2579741.4	604.4	606.8	12/06/22	19.5	29.5	SU
MW-EX-3	Offsite	2021	D	464476.0	2580784.0	592.5	594.9	12/06/22	22.0	27	SU
MW-EX-4	Offsite	2021	D	464231.5	2581108.9	592.9	595.5	12/06/22	22.0	27	SU
MW-EX-5	Offsite	2021	D	463913.1	2581502.3	592.3	594.5	12/06/22	45.0	50	SU
PZ-3	FTC	2010	D	462780.0	2579903.6	NA	609.2	08/16/16	38.0	43	SU
PZ-15S	FTC	NA	S	463911.0	2579668.7	605.2	608.2	05/10/21	4.0	19	SU
PZ-15D	FTC	NA	D	463914.2	2579671.3	605.0	608.2	05/10/21	22.0	32	SU
PZ-16S	FTC	NA	S	463910.1	2579069.6	NA	609.3	04/29/16	4.0	19	SU
PZ-16D	FTC	NA	D	463913.8	2579072.1	NA	609.0	04/29/16	28.0	38	SU
PZ-18D	FTC	NA	D	462752.5	2579763.4	NA	609.6	08/16/16	37.0	47	SU
PZ-22S	FTC	NA	S	462770.3	2579826.4	NA	609.7	04/29/16	10.0	20	SU
PZ-22D	FTC	NA	D	462767.2	2579825.1	NA	609.6	04/29/16	31.0	41	SU
PZ-23	Offsite	2017	D	464564.7	2580218.1	597.9	597.6	05/24/22	35.0	40	FM
PZ-24-17	Offsite	2019	S	461565.5	2580738.8	605.2	604.8	09/09/21	7.0	17	FM
PZ-24-47	Offsite	2019	D	461570.2	2580738.9	605.6	604.7	09/09/21	37.0	47	FM
PZ-25-17	Offsite	2019	S	465263.6	2579969.3	598.6	598.3	09/09/21	7.0	17	FM
PZ-29-17	Offsite	2019	S	465386.4	2581734.1	593.9	593.6	09/09/21	7.0	17	FM
PZ-29-43	Offsite	2019	D	465386.3	2581729.5	593.8	593.5	09/09/21	38.0	43	FM
PZ-29-68	Offsite	2020	BR	465386.4	2581721.4	593.7	593.5	01/07/21	58.0	68	FM
PZ-30-12	Offsite	2019	S	464126.0	2582520.2	594.6	594.3	09/09/21	7.0	12	FM
PZ-30-45	Offsite	2019	D	464123.4	2582525.0	594.5	594.2	09/09/21	35.0	45	FM
PZ-30-59	Offsite	2019	D	464121.2	2582529.1	594.4	594.2	09/09/21	54.0	59	FM
PZ-31-17	Offsite	2019	S	462494.2	2582369.0	595.8	595.5	09/09/21	7.0	17	FM
PZ-31-40	Offsite	2019	D	462490.8	2582364.0	595.7	595.4	09/09/21	35.0	40	FM
PZ-31-53	Offsite	2019	D	462491.4	2582374.6	595.8	595.2	09/09/21	48.0	53	FM
PZ-32-18	Offsite	2019	S	461901.1	2583990.8	591.6	591.2	09/09/21	8.0	18	FM
PZ-32-72	Offsite	2019	D	461908.3	2583990.8	591.7	591.2	09/09/21	67.0	72	FM
PZ-45-31	Offsite	2020	D	463858.4	2579412.7	605.7	607.9	01/07/21	21.0	31	SU
PZ-47-40	FTC	2021	D	463488.1	2578741.0	608.2	611.0	09/09/21	35	40	SU
PZ-51-38	Offsite	2021	D	463344.4	2582027.2	594.9	594.4	09/09/21	33.0	38	FM
PZ-52-41R	Offsite	2024	D	462766.1	2582402.6	595.2	594.7	06/19/24	36.0	41	FM
PZ-53-40	Offsite	2021	D	461921.2	2582490.5	596.0	595.7	09/09/21	35	40	FM
PZ-54-47R	Offsite	2024	D	462704.5	2581359.4	598.9	598.4	06/19/24	42.0	47	FM
PZ-55-64	Offsite	2021	D	462662.5	2580658.8	616.5	616.3	09/09/21	59	64	FM
PZ-56-42	Offsite	2021	D	463289.6	2580664.2	605.9	605.4	09/09/21	37.2	42.2	FM
PZ-57-38	Offsite	2021	D	462908.7	2583829.9	594.3	594.0	09/09/21	33.0	38	FM
PZ-58-40	Offsite	2022	D	462256.6	2582444.3	596.6	596.4	08/31/22	35.0	40	FM
PZ-58-50	Offsite	2022	D	462249.5	2582444.4	596.8	596.4	12/06/22	45.0	50	FM

Table 2-1
Construction of Monitoring Wells
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Year Installed	Zone	Northing	Easting	Ground Elevation (ft NAVD88)	Top of Casing Elevation (ft NAVD88)	Survey Date	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish
Stanton Street Well Group											
MW003S	Stanton	1998	S	470584.2	2584070.5	NA	586.6	06/11/24	10	20	SU
MW003M	Stanton	1998	D	470588.5	2584074.1	NA	587.4	06/11/24	30	35	SU
MW021S-R	Stanton	-	S	469057.2	2585288.1	NA	586.4	06/11/24	6	16	SU
MW021M	Stanton	-	D	469057.2	2585288.1	NA	586.4	06/11/24	6	16	SU
MW022S	Stanton	-	S	468779.3	2585881.6	NA	584.6	06/11/24	10	20	SU
MW022M	Stanton	-	D	468780.3	2585875.3	NA	584.5	06/11/24	30	35	SU
MW040S	Stanton	-	S	470087.2	2583738.9	NA	582.6	06/11/24	5	15	FM
MW040M-R	Stanton	-	D	470097.6	2583744.5	NA	582.6	06/11/24	20	25	FM
MW100S	Stanton	-	S	469234.1	2585775.5	NA	584.5	06/11/24	8	18	SU
MW100M	Stanton	-	D	469235.2	2585781.2	NA	584.2	06/11/24	28	33	SU
MW100D	Stanton	2011	BR	469232.1	2585769.8	NA	584.1	06/11/24	52	57	SU
MW102S	Stanton	-	S	469386.0	2584523.0	NA	588.8	06/11/24	7.7	17.7	SU
MW102M	Stanton	-	D	469384.9	2584528.4	NA	588.5	06/11/24	27.7	32.7	SU
MW102D	Stanton	-	BR	469381.8	2584532.1	NA	588.6	06/11/24	49.8	54.8	SU
MW104S	Stanton	-	S	469663.2	2584030.2	NA	589.3	06/11/24	8	18	SU
MW104M	Stanton	-	D	469660.8	2584034.5	NA	589.4	06/11/24	28	33	SU
MW105D-R	Stanton	2023	BR	470085.1	2583775.1	583.3	582.9	06/11/24	37	42	FM
MW107D	Stanton	-	BR	470337.8	2584881.8	NA	582.7	06/11/24	46	51	FM
MW118D-R	Stanton	-	BR	470462.1	2584807.0	NA	585.6	06/11/24	47	52	FM
MW130S	Offsite	2024	S	469493.0	2583540.6	586.185	585.8	02/17/25	5	15	FM
MW131S	Offsite	2024	S	468918.4	2586132.9	585.029	584.6	02/17/25	10	20	FM
MW131M	Offsite	2024	D	468924.8	2586130.6	585.137	584.7	02/17/25	30	35	FM

Notes:

(1)Bottom of screen is measured total depth, but all were soft bottoms. HMW-2-3 series wells have slotted screens with threaded joints.

(2)The top of casing elevation for PZ-4S is not available.

(3) The GETS well network is inclusive of all monitoring wells that are sampled and/or gauged in accordance with the GETS LTM Plan (Arcadis 2021a); however select wells identified in other LTM well network groups (e.g. PZ-68-16 in the FTC Well Network) are gauged as part of the GETS LTM.

Vertical Datum: North American Vertical Datum (NAVD) 1988

Acronyms/Abbreviations:

bgs = below ground surface

ft = feet

FTC = Fire Technology Center

LTM = long term monitoring

GETS = groundwater extraction and treatment system

NA = not available

Zone screened abbreviations: S = shallow overburden < 25 feet deep; D = deep overburden > 25 feet deep; BR = bedrock

Surface finish abbreviations: FM = flush mount; SU = stick up

Table 3-1
Groundwater Sampling Plan
Interim LTM Plan
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 1 (Actual): **Semi-Annual Sampling** - All Wells in All Groups; **Quarterly Sampling** - Select Monitoring Wells			
					Q2 2024	Q3 2024	Q4 2024	Q1 2025
FTC (non-GETS) Well Group								
HMW-2-3S	FTC	S	6	16	X		X	
HMW-2-3D	FTC	D	32	42	X		X	
FTC-2S	FTC	S	5	15	X		X	
FTC-2D	FTC	D	27	32	X		X	
FTC-31	FTC	S	3	13	X		X	
FTC-34S	FTC	S	3	13	X		X	
FTC-34D	FTC	D	28	33	X		X	
FTC-44	FTC	S	5	15	X		X	
PZ-1D	FTC	BR	63.5	68.5	X		X	
PZ-4S	FTC	D	36	41	X		X	
PZ-4D	FTC	BR	68.5	73.5	X		X	
PZ-11	FTC	D	41	46	X		X	
PZ-14S	FTC	S	4	19	X		X	
PZ-14D	FTC	D	25	35	X		X	
PZ-67-16	FTC	S	6	16	X		X	
PZ-9	FTC	D	38	43	X		X	
PZ-19	FTC	D	27	37	X		X	
PZ-59-21	Offsite	S	11	21	X		X	
PZ-65-16	FTC	S	6	16	X		X	
PZ-65-33	FTC	D	28	33	X		X	
PZ-67-40	FTC	D	35	40	X		X	
PZ-68-16	FTC	S	6	16	X		X	
PZ-68-26	FTC	D	21	26	X		X	
PZ-68-66	FTC	BR	61	66	X		X	
PZ-69-24	FTC	S	14	24	X		X	
PZ-69-43	FTC	D	38	43	X		X	
PZ-86-17	FTC	S	7	17	NI		NI	X[1]
PZ-86-38	FTC	D	33	38	NI		NI	X[1]

Table 3-1
Groundwater Sampling Plan
Interim LTM Plan
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 1 (Actual): **Semi-Annual Sampling** - All Wells in All Groups; **Quarterly Sampling** - Select Monitoring Wells			
Northern Plume Well Group								
MW003D	Stanton	BR	45	50	X		X	
MW013S-R	Offsite	S	9	19	X		X	
MW013M-R	Offsite	D	30	35	X		X	
MW013D-R	Offsite	BR	41	46	X		X	
MW125S-20	Offsite	S	10	20	X		X	
MW125M-35	Offsite	D	30	35	X		X	
MW125D-60	Offsite	BR	50	60	X		X	
MW128S-17	Offsite	S	7	17	X		X	
MW128M-30	Offsite	D	25	30	X		X	
MW129S-21	Offsite	S	11	21	X		X	
MW129M-45	Offsite	D	40	45	X		X	
MW042D	Stanton	BR	50	55	X		X	
MW046D	Stanton	BR	53.5	58.51	X		X	
MW064D	Stanton	BR	51.7	56.69	X		X	
PZ-28-14	Offsite	S	9	14	X		X	
PZ-28-54	Offsite	D	49	54	X		X	
PZ-28-75	Offsite	BR	65	75	X		X	X
PZ-63-44	Offsite	S	39	44	X		X	
PZ-63-60	Offsite	BR	55	60	X		X	
PZ-79-16	Offsite	S	6	16	X		X	
PZ-79-25	Offsite	D	20	25	X		X	
PZ-79-32	Offsite	D	27	32	X		X	
PZ-90-20	Offsite	S	5	20	NI		NI	X[1]

Table 3-1
Groundwater Sampling Plan
Interim LTM Plan
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 1 (Actual): **Semi-Annual Sampling** - All Wells in All Groups; **Quarterly Sampling** - Select Monitoring Wells			
Southern Plume Well Group								
MW-101-16	Offsite	S	6	16	X		X	
MW-101-72	Offsite	D	62	72	X		X	
PZ-33-12	Offsite	S	7	12	X		X	
PZ-33-33	Offsite	D	28	33	X		X	
PZ-33-67	Offsite	D	57	67	X		X	
PZ-33-105	Offsite	BR	100	105	X		X	
PZ-34-17	Offsite	S	7	17	X		X	
PZ-34-84	Offsite	D	74	84	X		X	
PZ-35-17	Offsite	S	7	17	X		X	
PZ-35-37	Offsite	D	32	37	X		X	
PZ-46-19	Offsite	S	9	19	X		X	
PZ-46-40	Offsite	D	30	40	X		X	
PZ-46-65	Offsite	D	60	65	X		X	
PZ-70-17	FTC	S	7	17	X		X	
PZ-70-33	FTC	D	28	33	X		X	
PZ-70-55	FTC	D	50	55	X		X	
PZ-70-83	FTC	BR	73	83	X		X	
PZ-71-111	Offsite	BR	101	111	X		X	
PZ-72-73	Offsite	D	68	73	X		X	
PZ-74-32	Offsite	D	22	32	X		X	X
PZ-74-80	Offsite	D	75	80	X		X	X
PZ-76-34	Offsite	D	29	34	X		X	
TW-03	Offsite	S	10	20	X		X	

Table 3-1
Groundwater Sampling Plan
Interim LTM Plan
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 1 (Actual): **Semi-Annual Sampling** - All Wells in All Groups; **Quarterly Sampling** - Select Monitoring Wells			
Boundary Zone Well Group								
MW-100-32	Offsite	D	22	32	X	X	X	X
MW-100-68	Offsite	D	58	68	X		X	
MW-100-88	Offsite	BR	83	88	X		X	
MW126S-20	Offsite	S	10	20	X		X	
MW126D-40	Offsite	BR	30	40	X		X	
PZ-26-11	Offsite	S	6	11	X		X	
PZ-26-36	Offsite	BR	31	36	X	X	X	X
PZ-44-73	Offsite	D	63	73	X		X	
PZ-60-20	Offsite	S	10	20	X		X	
PZ-61-11	Offsite	S	6	11	X		X	X
PZ-62-62	Offsite	D	57	62	X		X	
PZ-66-20	FTC	S	10	20	X		X	
PZ-66-57	FTC	D	52	57	X		X	
PZ-73-16	Offsite	S	6	16	X		X	
PZ-73-32	Offsite	D	27	32	X		X	X
PZ-73-75	Offsite	D	70	75	X		X	
PZ-75-18	Offsite	S	8	18	X		X	
PZ-77-16	Offsite	S	5.7	15.7	X		X	
PZ-78-17	Offsite	S	7	17	X		X	
PZ-78-74	Offsite	BR	71.5	73.5	X		X	
PZ-80-37	Offsite	D	32	37	X		X	
PZ-81-25	Offsite	S	20	25	X		X	
PZ-81-92	Offsite	BR	82	92	X		X	
PZ-82-16	Offsite	S	6	16	X		X	
PZ-83-50	Offsite	D	45	50	NI	X[1]	X	
PZ-85-69	Offsite	BR	64	69	NI	X[1]	X	
PZ-87-16	FTC	S	6	16	NI		NI	X[1]
PZ-87-47	FTC	D	42	47	NI		NI	X[1]
PZ-89-40	Offsite	D	35	40	NI		NI	X[1]
TW-02	Offsite	S	10	20	X		X	
TW-04	Offsite	S	10	20	X	X	X	X
TW-05	Offsite	S	10	20	X		X	

Table 3-1

Groundwater Sampling Plan
Interim LTM Plan
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 1 (Actual): **Semi-Annual Sampling** - All Wells in All Groups; **Quarterly Sampling** - Select Monitoring Wells

Notes:

Prior to 2025, all wells were sampled for PFAS via Modified 537 method. In 2025, samples were analyzed via Method 1633A and will continue to be analyzed using this method.

All wells were gauged during sampling; comprehensive rounds of gauging across all well groups were completed semi-annually in year 1.

Vertical Datum: North American Vertical Datum (NAVD) 1988

(1) The monitoring well was installed after the semi-annual groundwater sampling event was completed. The monitoring well was sampled shortly after installation during the identified quarter.

Acronyms/Abbreviations:

bgs = below ground surface

ft = feet

FTC = Fire Technology Center

GETS = groundwater extraction and treatment system

NI = Well was not yet installed and/or developed at the time of the sampling event

X = Well sampled during applicable sampling event

Zone screened abbreviations: S = shallow overburden < 25 feet deep; D = deep overburden > 25 feet deep; BR = bedrock

Surface finish abbreviations: FM = flush mount; SU = stick up

Table 3-2
Surface Water Sampling Plan
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Location ID	Approximate Northing	Approximate Easting	Ditch	SW Treatment System OMM	GETS LTM	Interim LTM
SW-10	454622.3	2577900.5	A			X
SW-12	457345.6	2578759.8	A			X
SW-13	457362.4	2577417.6	A			
SW-26	459950.6	2579428.9	A			
SW-26A	459950.6	2579428.9	A	X		
SW-30	464592.0	2587793.9	C			X
SW-31	463510.0	2586758.7	C			
SW-33	456799.0	2583460.2	D			X
SW-34	452076.4	2578123.0	A			
SW-36	460092.7	2582005.4	AD			X
SW-39	461489.8	2584345.7	B	X		
SW-40	460513.9	2577383.1	A	X		
SW-43	454983.9	2582961.7	E			X
SW-44	450138.8	2579145.2	A			
SW-45	460004.1	2580827.8	AD			
SW-46	454723.5	2575567.4	A			
SW-47	457341.9	2575426.2	A			
SW-48	456464.9	2578186.4	A			
SW-49	461426.3	2581751.3	D			
SW-50	463336.3	2576547.5	B			
SW-51	464077.3	2575331.3	B			
SW-52	464745.2	2575303.9	B			
SW-53	462745.1	2574150.3	B			
SW-54	459667.7	2571677.9	A			
SW-55	463365.2	2572872.2	B			
SW-U03	464587.1	2579773.7	B		X	
SW-U10	464298.0	2577215.1	B		X	
SW-M01	462921.1	2582477.4	B		X	
SW-M04	463546.5	2582097.6	B		X	
SW-M07	464234.7	2581307.4	B		X	
SW-M09	464604.7	2580864.3	B		X	
SW-L03	460987.2	2584898.4	B	X		
SW-L09	461728.5	2583540.5	B		X	
SW-P1A	464754.2	2580738.6	B		X	
SW-P1B	464786.1	2580794.0	B		X	
SW-P2	464761.1	2580731.2	B		X	
SW-P3	464749.5	2580733.9	B		X	
SW-P4A	464988.0	2580997.7	B		X	
SW-P4B	465044.5	2580974.5	B		X	
SW-P5	465336.9	2580685.0	B		X	
SW-P6	465703.4	2580112.7	B		X	
SW-P7	466302.0	2579388.3	B		X	
SW-GB-A	459529.3	2589454.3	--			
SW-GB-B	462485.0	2588129.2	--			
SW-GB-C	461367.6	2587306.5	--			
SW-GB-D	459703.4	2587213.9	--			
SW-GB-E	458427.4	2586344.8	--			
SW-GB-F	456259.6	2585399.7	--			
SW-GB-G	454603.2	2584813.0	--			

Notes:
(1) There was no flowing water in the ditch at location SW-43 during the July 2023 sampling event; therefore, no sample was collected from this location.

Acronyms/Abbreviations:
GETS = Groundwater Extraction and Treatment System
LTM = Long Term Monitoring
SW = Surface Water
SG = Staff Gauge

Table 3-3
Vertical Aquifer Profiling Sampling Results, January 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Location	VAP-PZ-88	VAP-PZ-88	VAP-PZ-88	VAP-PZ-88
		Sample ID	VAP-PZ-88 (7-9) (012325)	DUP-01 (012325)	VAP-PZ-88 (19-21) (012325)	VAP-PZ-88 (28-30) (012325)
		Parent Sample ID		VAP-PZ-88 (7-9) (012325)		
		Sample Date	01/23/2025	01/23/2025	01/23/2025	01/23/2025
		Sample Type	N	FD	N	N
Analyte	CAS	Units				
PFBA	375-22-4	ng/L	16	14	24 J	23 J
PFPeA	2706-90-3	ng/L	10	9.4	48 J	50 J
PFHxA	307-24-4	ng/L	30	28	55 J	32 J
PFHpA	375-85-9	ng/L	7.8	7.8	15 J	15 J
PFOA	335-67-1	ng/L	4.1	4.6	29 J	26 J
PFNA	375-95-1	ng/L	2	2	2.6 J	1.9 J
PFDA	335-76-2	ng/L	2.7	2.2	< 10 UJ	< 4.0 UJ
PFUnA	2058-94-8	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFDoA	307-55-1	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFTriA	72629-94-8	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFTeA	376-06-7	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFHxS	355-46-4	ng/L	< 1.7 U	< 1.7 U	2.7 J	2.1 J
PFHpS	375-92-8	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFOS	1763-23-1	ng/L	3.7	3.7	7.8 J	6.2 J
PFNS	68259-12-1	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFDS	335-77-3	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFDoS	79780-39-5	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
4:2 FTS	757124-72-4	ng/L	1.2 J	1.1 J	< 20 UJ	< 8.0 UJ
6:2 FTS	27619-97-2	ng/L	4.3	4.1	21 J	< 8.0 UJ
8:2 FTS	39108-34-4	ng/L	< 3.4 U	< 3.5 U	< 20 UJ	< 8.0 UJ
FOSA	754-91-6	ng/L	< 1.7 U	< 1.7 U	2.9 J	< 4.0 UJ
NMeFOSA	31506-32-8	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
NMeFOSAA	2355-31-9	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
NEtFOSAA	2991-50-6	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
NMeFOSE	24448-09-7	ng/L	< 8.6 U	< 8.7 U	< 50 UJ	< 20 UJ
NEtFOSE	1691-99-2	ng/L	< 8.6 U	< 8.7 U	< 50 UJ	< 20 UJ
PFMPA	377-73-1	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFMBA	863090-89-5	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
NFDHA	151772-58-6	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
HFPO-DA	13252-13-6	ng/L	< 1.3 U	< 1.3 U	< 7.5 UJ	< 3.0 UJ
DONA	919005-14-4	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
PFEESA	113507-82-7	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
9Cl-PF3ONS	756426-58-1	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
11Cl-PF3OUdS	763051-92-9	ng/L	< 1.7 U	< 1.7 U	< 10 UJ	< 4.0 UJ
3:3 FTCA	356-02-5	ng/L	< 3.4 U	< 3.5 U	< 20 UJ	< 8.0 UJ
5:3 FTCA	914637-49-3	ng/L	< 8.6 U	< 8.7 U	< 50 UJ	< 20 UJ
7:3 FTCA	812-70-4	ng/L	< 8.6 U	< 8.7 U	< 50 UJ	< 20 UJ

Table 3-3
Vertical Aquifer Profiling Sampling Results
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Notes:
< = Compound not detected at reporting detection limit.
(1) In February 2025, WDHS recommended individual groundwater standards of 4 ng/L for PFOA and PFOS, 10 ng/L for PFHxS, PFNA, and HFPO-DA, and 2,000 ng/L for PFBS. Following the February 2025 WDHS recommendation, the WDNR Secretary and the Governor signed the WDNR scope statement and WDNR is in the early stages of rule development for these groundwater standards.
-- = No standard
N = Normal sample
ng/L = nanograms per liter
FD = Field duplicate sample

U = The analyte was analyzed for but the result was not detected above the method detection limit.
J = The analyte was positively identified; however the associated numerical value is an estimated concentration only.
UJ = The analyte was analyzed for but was not detected. The reported reporting limit (RL) is approximate and may be inaccurate or imprecise.

Chemical Abbreviation:

PFBA = Perfluorobutanoic acid
PFPeA = Perfluoropentanoic acid
PFHxA = Perfluorohexanoic acid
PFHpA = Perfluoroheptanoic acid
PFOA = Perfluorooctanoic acid
PFNA = Perfluorononanoic acid
PFDA = Perfluorodecanoic acid
PFUnA = Perfluoroundecanoic acid
PFDoA = Perfluorododecanoic acid
PFTriA = Perfluorotridecanoic acid
PFTeA = Perfluorotetradecanoic acid
PFBS = Perfluorobutanesulfonic acid
PFPeS = Perfluoropentanesulfonic acid
PFHxS = Perfluorohexanesulfonic acid
PFHpS = Perfluoroheptanesulfonic acid
PFOS = Perfluorooctanesulfonic acid
PFNS = Perfluorononanesulfonic acid
PFDS = Perfluorodecanesulfonic acid
PFDoS = Perfluorododecanesulfonic acid
4:2 FTS = 4:2 Fluorotelomer sulfonic acid
6:2 FTS = 6:2 Fluorotelomer sulfonic acid
8:2 FTS = 8:2 Fluorotelomer sulfonic acid
FOSA = Perfluorooctane sulfonamide
NMeFOSA = N-Methyl perfluorooctane sulfonamide
NEtFOSA = N-Ethyl perfluorooctane sulfonamide
NMeFOSAA = N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA = N-Ethyl perfluorooctane sulfonamidoacetic acid
NMeFOSE = N-Methyl perfluorooctane sulfonamidoethanol
NEtFOSE = N-Ethyl perfluorooctane sulfonamidoethanol
PFMPA = Perfluoro-3-methoxypropanoic acid
PFMBA = Perfluoro-4-methoxybutanoic acid
NFDHA = Nonafluoro-3,6-dioxaheptanoic acid
HFPO-DA = Hexafluoropropylene oxide dimer acid
DONA = 4,8-Dioxa-3H-perfluorononanoic acid
PFEESA = Perfluoro(2-ethoxyethane)sulfonic acid
9Cl-PF3ONS = 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic
11Cl-PF3OUdS = 11-chloroeicosafluoro-3-oxaundecane-1-
3:3 FTCA = 3-Perfluoropropyl propanoic acid
5:3 FTCA = 2H,2H,3H,3H-Perfluorooctanoic acid
7:3 FTCA = 3-Perfluoroheptyl propanoic acid

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Table 3-4
Groundwater Elevations - October 2024
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Monitoring Plan	Area	Zone	Top of Casing Elevation (ft NAVD88)	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish	Date Gauged	Depth to Water (ft BTOC)	GW Elevation (ft NAVD88)
FTC-2D	Interim LTM: FTC	FTC	D	611.2	27	32	FM	10/16/2024	6.13	605.02
FTC-2S	Interim LTM: FTC	FTC	S	611.1	5	15	FM	10/16/2024	6.02	605.06
FTC-31	Interim LTM: FTC	FTC	S	610.3	3	13	FM	10/16/2024	5.09	605.19
FTC-34D	Interim LTM: FTC	FTC	D	608.7	28	33	FM	10/16/2024	4.16	604.56
FTC-34S	Interim LTM: FTC	FTC	S	608.5	3	13	FM	10/16/2024	3.41	605.09
FTC-44	Interim LTM: FTC	FTC	S	611.3	5	15	SU	10/16/2024	5.85	605.45
HMW-2-3D[1]	Interim LTM: FTC	FTC	D	614.4	32	42	SU	10/14/2024	9.42	604.95
HMW-2-3S[1]	Interim LTM: FTC	FTC	S	613.2	6	16	SU	10/14/2024	8.24	604.95
MW003D	Interim LTM: N. Plume	Stanton	BR	587.3	45	50	SU	10/15/2024	7.8	579.47
MW013S-R	Interim LTM: N. Plume	Offsite	S	589.3	9	19	FM	10/16/2024	5.44	583.91
MW013M-R	Interim LTM: N. Plume	Offsite	D	589.3	30	35	FM	10/15/2024	7.87	581.39
MW013D-R	Interim LTM: N. Plume	Offsite	BR	589.6	41	46	FM	10/15/2024	8.49	581.11
MW042D	Interim LTM: N. Plume	Stanton	BR	587.2	50	55	SU	10/16/2024	6.16	581.08
MW046D	Interim LTM: N. Plume	Stanton	BR	585.0	53.5	58.51	SU	10/16/2024	5.7	579.26
MW064D	Interim LTM: N. Plume	Stanton	BR	588.8	51.7	56.69	SU	10/16/2024	9.14	579.69
MW-100-32	Interim LTM: Boundary	Offsite	D	601.5	22	32	FM	10/17/2024	4.14	597.31
MW-100-68	Interim LTM: Boundary	Offsite	D	601.8	58	68	FM	10/17/2024	4.41	597.42
MW-100-88	Interim LTM: Boundary	Offsite	BR	601.9	83	88	FM	10/15/2024	4.58	597.36
MW-101-16	Interim LTM: S. Plume	Offsite	S	603.2	6	16	FM	10/14/2024	5.09	598.09
MW-101-72	Interim LTM: S. Plume	Offsite	D	603.2	62	72	FM	10/14/2024	5.53	597.67
MW125S-20	Interim LTM: N. Plume	Offsite	S	596.2	10	20	FM	10/15/2024	8.51	587.65
MW125M-35	Interim LTM: N. Plume	Offsite	D	596.3	30	35	FM	10/16/2024	8.63	587.63
MW125D-60	Interim LTM: N. Plume	Offsite	BR	596.0	50	60	FM	10/15/2024	14.83	581.20
MW126S-20	Interim LTM: Boundary	Offsite	S	598.1	10	20	FM	10/15/2024	12.5	585.56
MW126D-40	Interim LTM: Boundary	Offsite	BR	597.8	30	40	FM	10/15/2024	16.92	580.87
MW128S-17	Interim LTM: N. Plume	Offsite	S	595.1	7	17	FM	10/15/2024	10.8	584.34
MW128M-30	Interim LTM: N. Plume	Offsite	D	595.2	25	30	FM	10/15/2024	10.8	584.36
MW129S-21	Interim LTM: N. Plume	Offsite	S	585.3	11	21	FM	10/15/2024	4.25	581.08
MW129M-45	Interim LTM: N. Plume	Offsite	D	585.6	40	45	FM	10/15/2024	4.64	580.93
MW-EX-2	GETS LTM	FTC	D	606.8	19.5	29.5	SU	10/14/2024	10.45	596.36
MW-EX-3	GETS LTM	Offsite	D	594.9	22.0	27	SU	10/14/2024	4.54	590.38
MW-EX-4	GETS LTM	Offsite	D	595.5	22.0	27	SU	10/14/2024	4.92	590.54
MW-EX-5	GETS LTM	Offsite	D	594.5	45.0	50	SU	10/14/2024	7.41	587.13
PZ-1D	Interim LTM: FTC	FTC	BR	606.2	63.5	68.5	SU	10/14/2024	12.54	593.69
PZ-3	GETS LTM	FTC	D	609.2	38.0	43	SU	10/14/2024	11.22	597.98
PZ-4S[2]	Interim LTM: FTC	FTC	D	607.9	36	41	SU	10/14/2024	5.11	602.78
PZ-4D	Interim LTM: FTC	FTC	BR	607.9	68.5	73.5	SU	10/14/2024	6.06	601.80
PZ-9	Interim LTM: FTC	FTC	D	611.2	38	43	SU	10/14/2024	8.53	602.63
PZ-11	Interim LTM: FTC	FTC	D	611.4	41	46	SU	10/14/2024	7.81	603.60
PZ-14S	Interim LTM: FTC	FTC	S	610.8	4	19	SU	10/14/2024	7.14	603.63
PZ-14D	Interim LTM: FTC	FTC	D	611.2	25	35	SU	10/14/2024	7.62	603.53
PZ-15S	GETS LTM	FTC	S	608.2	4.0	19	SU	10/14/2024	16.65	591.50
PZ-15D	GETS LTM	FTC	D	608.2	22.0	32	SU	10/14/2024	11.8	596.37
PZ-16S	GETS LTM	FTC	S	609.3	4.0	19	SU	10/14/2024	9.59	599.71
PZ-16D	GETS LTM	FTC	D	609.0	28.0	38	SU	10/14/2024	9.77	599.21
PZ-18D	GETS LTM	FTC	D	609.6	37.0	47	SU	10/15/2024	11.01	598.60
PZ-19	Interim LTM: FTC	FTC	D	608.7	27	37	SU	10/15/2024	11.46	597.24
PZ-22S	GETS LTM	FTC	S	609.7	10.0	20	SU	10/14/2024	11.08	598.62
PZ-22D	GETS LTM	FTC	D	609.6	31.0	41	SU	10/16/2024	10.98	598.60
PZ-23	GETS LTM	Offsite	D	597.6	35.0	40	FM	10/14/2024	3.99	593.61
PZ-24-17	GETS LTM	Offsite	S	604.8	7.0	17	FM	10/14/2024	7.35	597.49
PZ-24-47	GETS LTM	Offsite	D	604.7	37.0	47	FM	10/14/2024	7.29	597.44
PZ-25-17	GETS LTM	Offsite	S	598.3	7.0	17	FM	10/14/2024	5.84	592.46
PZ-26-11	Interim LTM: Boundary	Offsite	S	597.8	6	11	FM	10/14/2024	5.55	592.22
PZ-26-36	Interim LTM: Boundary	Offsite	BR	596.1	31	36	FM	10/14/2024	1.52	594.62
PZ-28-14	Interim LTM: N. Plume	Offsite	S	594.4	9	14	FM	10/16/2024	6.2	588.21
PZ-28-54	Interim LTM: N. Plume	Offsite	D	594.5	49	54	FM	10/16/2024	9.28	585.19
PZ-28-75	Interim LTM: N. Plume	Offsite	BR	594.3	65	75	FM	10/14/2024	13.01	581.28
PZ-29-17	GETS LTM	Offsite	S	593.6	7.0	17	FM	10/14/2024	4.03	589.59
PZ-29-43	GETS LTM	Offsite	D	593.5	38.0	43	FM	10/14/2024	4.86	588.66
PZ-29-68	GETS LTM	Offsite	BR	593.5	58.0	68	FM	10/14/2024	4.67	588.79
PZ-30-12	GETS LTM	Offsite	S	594.3	7.0	12	FM	10/14/2024	4.96	589.36
PZ-30-45	GETS LTM	Offsite	D	594.2	35.0	45	FM	10/14/2024	5.44	588.78
PZ-30-59	GETS LTM	Offsite	D	594.2	54.0	59	FM	10/14/2024	5.29	588.86

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Table 3-4
Groundwater Elevations - October 2024
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Monitoring Plan	Area	Zone	Top of Casing Elevation (ft NAVD88)	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish	Date Gauged	Depth to Water (ft BTOC)	GW Elevation (ft NAVD88)
PZ-31-17	GETS LTM	Offsite	S	595.5	7.0	17	FM	10/14/2024	5.44	590.05
PZ-31-40	GETS LTM	Offsite	D	595.4	35.0	40	FM	10/14/2024	5.23	590.15
PZ-31-53	GETS LTM	Offsite	D	595.2	48.0	53	FM	10/14/2024	5.22	590.02
PZ-32-18	GETS LTM	Offsite	S	591.2	8.0	18	FM	10/14/2024	2.65	588.54
PZ-32-72	GETS LTM	Offsite	D	591.2	67.0	72	FM	10/14/2024	2.92	588.31
PZ-33-105	Interim LTM: S. Plume	Offsite	BR	594.2	100	105	FM	10/14/2024	6.46	587.73
PZ-33-12	Interim LTM: S. Plume	Offsite	S	594.3	7	12	FM	10/14/2024	2.64	591.69
PZ-33-33	Interim LTM: S. Plume	Offsite	D	594.3	28	33	FM	10/14/2024	2.68	591.65
PZ-33-67	Interim LTM: S. Plume	Offsite	D	594.4	57	67	FM	10/14/2024	2.98	591.44
PZ-34-17	Interim LTM: S. Plume	Offsite	S	590.8	7	17	FM	10/15/2024	7.78	583.00
PZ-34-84	Interim LTM: S. Plume	Offsite	D	590.9	74	84	FM	10/15/2024	3.53	587.34
PZ-35-17	Interim LTM: S. Plume	Offsite	S	608.2	7	17	FM	10/16/2024	5.62	602.56
PZ-35-37	Interim LTM: S. Plume	Offsite	D	608.2	32	37	FM	10/16/2024	5.69	602.51
PZ-44-73	Interim LTM: Boundary	Offsite	D	594.6	63	73	FM	10/16/2024	3.99	590.64
PZ-45-31	GETS LTM	Offsite	D	607.9	21.0	31	SU	10/14/2024	12.06	595.84
PZ-46-19	Interim LTM: S. Plume	Offsite	S	603.9	9	19	FM	10/15/2024	3.31	600.60
PZ-46-40	Interim LTM: S. Plume	Offsite	D	604.0	30	40	FM	10/15/2024	3.72	600.27
PZ-46-65	Interim LTM: S. Plume	Offsite	D	603.8	60	65	FM	10/15/2024	3.65	600.17
PZ-47-40	GETS LTM	FTC	D	611.0	35	40	SU	10/14/2024	10.25	600.79
PZ-51-38	GETS LTM	Offsite	D	594.4	33.0	38	FM	10/14/2024	5.34	589.07
PZ-52-41R	GETS LTM	Offsite	D	594.7	36.0	40	FM	10/14/2024	5.75	588.99
PZ-53-40	GETS LTM	Offsite	D	595.7	35	40	FM	10/14/2024	4.69	590.98
PZ-54-47R	GETS LTM	Offsite	D	598.4	42.0	47	FM	10/14/2024	5.08	593.28
PZ-55-64	GETS LTM	Offsite	D	616.3	59	64	FM	10/14/2024	23.7	592.56
PZ-56-42	GETS LTM	Offsite	D	605.4	37.2	42.2	FM	10/14/2024	11.36	594.07
PZ-57-38	GETS LTM	Offsite	D	594.0	33.0	38	FM	10/14/2024	5.67	588.37
PZ-58-40	GETS LTM	Offsite	D	596.4	35.0	40	FM	10/14/2024	5.8	590.58
PZ-58-50	GETS LTM	Offsite	D	596.4	45.0	50	FM	10/14/2024	5.88	590.56
PZ-59-21	Interim LTM: FTC	Offsite	S	613.1	11	21	FM	10/16/2024	7.98	605.14
PZ-60-20	Interim LTM: Boundary	Offsite	S	612.5	10	20	FM	10/16/2024	4.82	607.68
PZ-61-11	Interim LTM: Boundary	Offsite	S	585.0	6	11	FM	10/17/2024	4.59	580.40
PZ-62-62	Interim LTM: Boundary	Offsite	D	584.6	57	62	FM	10/16/2024	3.19	581.40
PZ-63-44	Interim LTM: N. Plume	Offsite	D	594.2	39	44	FM	10/15/2024	6.15	588.08
PZ-63-60	Interim LTM: N. Plume	Offsite	BR	594.1	55	60	FM	10/14/2024	6.48	587.67
PZ-65-16	Interim LTM: FTC	FTC	S	609.7	6	16	SU	10/16/2024	5.21	604.51
PZ-65-33	Interim LTM: FTC	FTC	D	610.1	28	33	SU	10/14/2024	5.23	604.86
PZ-66-20	Interim LTM: Boundary	FTC	S	616.1	10	20	SU	10/16/2024	11.09	604.98
PZ-66-57	Interim LTM: Boundary	FTC	D	617.3	52	57	SU	10/16/2024	12.35	604.91
PZ-67-16	Interim LTM: FTC	FTC	S	611.4	6	16	FM	10/14/2024	5.55	605.88
PZ-67-40	Interim LTM: FTC	FTC	D	611.4	35	40	FM	10/14/2024	5.49	605.86
PZ-68-16	Interim LTM: FTC	FTC	S	613.5	6	16	SU	10/14/2024	7.15	606.36
PZ-68-26	Interim LTM: FTC	FTC	D	613.9	21	26	SU	10/14/2024	7.43	606.49
PZ-68-66	Interim LTM: FTC	FTC	BR	613.5	61	66	SU	10/14/2024	8.32	605.23
PZ-69-24	Interim LTM: FTC	FTC	S	614.8	14	24	SU	10/14/2024	13.92	600.83
PZ-69-43	Interim LTM: FTC	FTC	D	612.2	38	43	SU	10/14/2024	13.74	598.49
PZ-70-17	Interim LTM: S. Plume	FTC	S	611.5	7	17	SU	10/14/2024	7.89	603.57
PZ-70-33	Interim LTM: S. Plume	FTC	D	611.1	28	33	SU	10/14/2024	7.85	603.26
PZ-70-55	Interim LTM: S. Plume	FTC	D	611.9	50	55	SU	10/14/2024	8.66	603.29
PZ-70-83	Interim LTM: S. Plume	FTC	BR	611.6	73	83	SU	10/14/2024	8.55	603.02
PZ-71-111	Interim LTM: S. Plume	Offsite	BR	605.2	101	111	FM	10/14/2024	13.26	591.97
PZ-72-73	Interim LTM: S. Plume	Offsite	D	598.2	68	73	FM	10/15/2024	2.42	595.77
PZ-73-16	Interim LTM: Boundary	Offsite	S	601.2	6	16	FM	10/15/2024	6.08	595.15
PZ-73-32	Interim LTM: Boundary	Offsite	D	602.0	27	32	FM	10/17/2024	6.92	595.06
PZ-73-75	Interim LTM: Boundary	Offsite	D	601.4	70	75	FM	10/17/2024	5.62	595.75
PZ-74-32	Interim LTM: S. Plume	Offsite	D	593.4	22	32	FM	10/15/2024	7.05	586.32
PZ-74-80	Interim LTM: S. Plume	Offsite	D	593.4	75	80	FM	10/15/2024	5.96	587.40
PZ-75-18	Interim LTM: Boundary	Offsite	S	605.1	8	18	FM	10/15/2024	5.21	599.92
PZ-76-34	Interim LTM: S. Plume	Offsite	D	592.3	29	34	FM	10/15/2024	9.12	583.17
PZ-77-16	Interim LTM: Boundary	Offsite	S	609.8	5.7	15.7	SU	NA	NA	NA
PZ-78-17	Interim LTM: Boundary	Offsite	S	585.8	7	17	FM	10/16/2024	3.82	581.99
PZ-78-74	Interim LTM: Boundary	Offsite	BR	585.7	71.5	73.5	FM	10/16/2024	5.49	580.17
PZ-79-16	Interim LTM: N. Plume	Offsite	S	591.7	6	16	FM	10/15/2024	3.59	588.13
PZ-79-25	Interim LTM: N. Plume	Offsite	D	591.8	20	25	FM	10/15/2024	3.66	588.14
PZ-79-32	Interim LTM: N. Plume	Offsite	D	591.9	27	32	FM	10/15/2024	3.75	588.19
PZ-80-37	Interim LTM: Boundary	Offsite	D	595.1	32	37	FM	10/15/2024	13.92	581.13

Table 3-4
Groundwater Elevations - October 2024
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Monitoring Plan	Area	Zone	Top of Casing Elevation (ft NAVD88)	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Surface Finish	Date Gauged	Depth to Water (ft BTOC)	GW Elevation (ft NAVD88)
PZ-81-25	Interim LTM: Boundary	Offsite	S	590.7	20	25	FM	10/16/2024	2.98	587.68
PZ-81-92	Interim LTM: Boundary	Offsite	BR	590.4	82	92	FM	10/16/2024	4.8	585.60
PZ-82-16	Interim LTM: Boundary	Offsite	S	599.4	6	16	FM	10/15/2024	2.78	596.62
PZ-83-50	Interim LTM: Boundary	Offsite	D	597.1	45	50	FM	10/15/2024	4.68	592.45
PZ-85-69	Interim LTM: Boundary	Offsite	BR	604.1	64	69	FM	10/15/2024	0.65	603.46
TW-02	Interim LTM: Boundary	Offsite	S	593.8	10	20	FM	10/15/2024	1.66	592.19
TW-03	Interim LTM: S. Plume	Offsite	S	598.1	10	20	FM	10/15/2024	2.55	595.52
TW-04	Interim LTM: Boundary	Offsite	S	593.6	10	20	FM	10/16/2024	12.72	580.88
TW-05	Interim LTM: Boundary	Offsite	S	597.5	10	20	FM	10/15/2024	4.39	593.13

Notes:
(1) Bottom of screen is measured total depth, but all were soft bottoms. HMW-2-3 series wells have slotted screens with threaded joints.

(2) The top of casing elevation for PZ-4S is not available. The groundwater elevation shown has been estimated by calculating the approximate top of casing elevation by measuring the length of the stickup above ground surface and adding the length to the surveyed ground surface elevation at nearby PZ-4D.

The GETS well network is inclusive of all monitoring wells that are sampled and/or gauged in accordance with the GETS LTM Plan (Arcadis 2021a); however select wells identified in other LTM well network groups (e.g. PZ-68-16 in the FTC Well Network) are gauged as part of the GETS LTM.

Vertical Datum: North American Vertical Datum (NAVD) 1988

Acronyms/Abbreviations:
bgs = below ground surface
ft = feet
FTC = Fire Technology Center
LTM = long term monitoring
GETS = groundwater extraction and treatment system
NA = not available
Zone screened abbreviations: S = shallow overburden < 25 feet deep; D = deep overburden > 25 feet deep; BR = bedrock
Surface finish abbreviations: FM = flush mount; SU = stick up

Table 3-5
Surface Water Elevations - October 2024
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Location ID	Approximate Northing	Approximate Easting	Ditch	Elevation of Measuring Point	Date Gauged	Depth to Water (ft btomp)	SW Elevation (ft NAVD88)
Interim LTM Surface Water Monitoring Locations							
SG-10	454651.2	2577823.7	A	596.44	10/15/2024	6.11	590.33
SG-12	457336.7	2578735.5	A	601.42	10/15/2024	3.30	598.12
SG-13	457326.6	2577402.0	A	600.02	10/15/2024	2.71	597.31
SG-26	459954.1	2579450.0	A	602.68	10/15/2024	dry	--
SG-36	460101.0	2582119.1	D	594.62	10/15/2024	1.72	592.9
SG-45	460015.8	2580829.1	AD	600.81	10/15/2024	dry	--
SG-47	457379.7	2575405.7	A	604.05	10/15/2024	1.83	602.22
SG-48	456484.6	2578250.4	A	598.81	10/15/2024	3.83	594.98
GETS LTM Surface Water Monitoring Locations[1]							
SG-A1	462175.9	2576923.7	A	608.26	10/14/2024	2.01	606.25
SG-23	463399.5	2576808.5	A	608.53	10/14/2024	unable to locate	--
SG-50	463376.3	2576546.6	A	608.47	10/14/2024	dry	--
SG-53	463645.4	2575386.6	B	608.58	10/14/2024	3.53	605.05
SG-U10	464305.3	2577082.2	B	604.92	10/14/2024	4.66	600.26
SG-U03	464616.9	2580026.8	B	598.51	10/14/2024	4.65	593.86
SG-M09	464728.4	2580715.4	B	594.32	10/14/2024	4.23	590.09
SG-M01	462816.3	2582507.7	B	593.47	10/14/2024	4.17	589.30
SG-L09	461731.8	2583377.9	B	594.46	10/14/2024	5.87	588.59

Notes:
(1) GETS LTM Surface Water Monitoring Locations are listed for reference purposes only and are monitored in accordance with the GETS LTM plan (Arcadis 2021a).

Acronyms/Abbreviations:
GETS = Groundwater Extraction and Treatment System
LTM = Long Term Monitoring
SW = Surface Water
SG = Staff Gauge

Table 3-6A
Groundwater Sampling Results,
Interim LTM FTC (Non-GETS), September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	FTC-2S	FTC-2D	FTC-31	FTC-34S	FTC-34S	FTC-34D	FTC-44	HMW-2-3S
			Sample ID	FTC-2S (110724)	FTC-2D (110724)	FTC-31 (111324)	FTC-34S (111324)	DUP-01-LTM (111324)	FTC-34D (111324)	FTC-44 (110724)	HMW-2-3S (111324)
			Parent Sample ID					FTC-34S (111324)			
			Sample Date	11/07/2024	11/07/2024	11/13/2024	11/13/2024	11/13/2024	11/13/2024	11/07/2024	11/13/2024
			Sample Type	N	N	N	N	FD	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	180	180	750 D	130	140	4000 D	720 D	51
PFPeA	2706-90-3	--	ng/L	660	870 D	3900 D	460 D	510 D	5200 D	2800 D	140
PFHxA	307-24-4	--	ng/L	410	570 D	2200 D	440 D	500 D	6700 D	1800 D	110
PFHpA	375-85-9	--	ng/L	210	210	2100 D	230	260	3000 D	3500 D	130
PFOA	335-67-1	4	ng/L	120	2900 D	5100 D	440 D	400 D	27000 D	6100 D	310
PFNA	375-95-1	10	ng/L	29	23	49	130	140	3400 D	1000 D	0.38 J
PFDA	335-76-2	--	ng/L	8.8	2.5	810 D	340	350	1100 D	130	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 4.0 U	< 1.8 U	14	110	110	90 J-	3.0	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	22	19	13	< 1.9 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	16	15	28	< 1.9 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	1.6 J	1.8	6.6	< 1.9 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	0.94 J	< 1.8 U	1.1 J	R	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	1.3 J	19	9.3	1.6 J	1.6 J	130 J-	24	1.5 J
PFPeS	2706-91-4	--	ng/L	0.76 J	10	8.1	0.67 J	0.81 J	190	23	0.35 J
PFHxS	355-46-4	10	ng/L	30	59	310	17	18	3700 D	1500 D	34
PFHpS	375-92-8	--	ng/L	< 4.0 U	2.5	32	< 1.8 U	< 1.8 U	670 D	20	< 1.8 U
PFOS	1763-23-1	4	ng/L	97	51	13000 D	89	85	39000 D	1600 D	3.4
PFNS	68259-12-1	--	ng/L	< 4.0 U	< 1.8 U	11 J	< 1.8 U	< 1.8 U	3.4 J	2.3 J	< 1.8 U
PFDS	335-77-3	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	2.9	2.9	< 1.8 U	< 1.9 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 4.0 U	67	54	10	11	620 D	7.6	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	190	3100 D	4400 D	4000 D	3200 D	120000 D	1500 D	5.8
8:2 FTS	39108-34-4	--	ng/L	38	39	30000 D	15000 D	15000 D	43000 D	2200 D	6.8
10:2 FTS	120226-60-0	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	930 DJ	650 DJ	160 J-	1.8 J	< 1.8 U
FOSA	754-91-6	--	ng/L	< 4.0 U	< 1.8 U	7300 D	170	160	9100 D	68	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 4.0 U	< 1.8 U	69	< 1.8 U	< 1.8 U	1.4 J	0.51 J	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 4.0 U	< 1.8 U	23	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 10 U	< 4.6 U	16 J	1.3 J	1.4 J	20 J	< 4.7 U	< 4.4 U
NEtFOSAA	2991-50-6	--	ng/L	< 10 U	< 4.6 U	5700 D	11	9.1	1500 D	35	< 4.4 U
NMeFOSE	24448-09-7	--	ng/L	< 8.0 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.7 U	< 3.5 U
NEtFOSE	1691-99-2	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 8.0 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.7 U	< 3.5 U
DONA	919005-14-4	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6A
Groundwater Sampling Results,
Interim LTM FTC (Non-GETS), September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	HMW-2-3D	PZ-1D	PZ-4S	PZ-4D	PZ-9	PZ-11	PZ-14S	PZ-14D
			Sample ID	HMW-2-3D	PZ-1D (102124)	PZ-4S (103024)	PZ-4D (101724)	PZ-9 (110624)	PZ-11 (110724)	PZ-14S (110824)	PZ-14D (110824)
			Parent Sample ID								
			Sample Date	11/13/2024	10/21/2024	10/30/2024	10/17/2024	11/06/2024	11/07/2024	11/08/2024	11/08/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	3.6 J	160	1800 DJ+	2400 D	480 D	7700 D	760 D	6200 D
PFPeA	2706-90-3	--	ng/L	4.1	420 D	5100 D	2600 D	2200 D	6800 D	3200 D	36000 D
PFHxA	307-24-4	--	ng/L	3.3	330	6700 D	4400 D	1200 D	7200 D	2200 D	23000 D
PFHpA	375-85-9	--	ng/L	1.5 J	19	2600 D	1900 D	470 D	4700 D	5700 D	4800 D
PFOA	335-67-1	4	ng/L	14	76	45000 D	39000 D	300	34000 D	75000 D	10000 D
PFNA	375-95-1	10	ng/L	< 1.8 U	0.25 J	4800 D	270	46	3000 D	9800 D	1800 D
PFDA	335-76-2	--	ng/L	< 1.8 U	< 1.8 U	540 D	1.2 J	0.51 J	240	3700 D	320
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.8 U	140	< 1.9 U	< 1.8 U	3.4	2900 D	96 J-
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	9.0	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	3.4	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.8 U	R	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	< 1.8 U	1.2 J	65	92	1.7 J	91 J-	6.2	2.1 J-
PFPeS	2706-91-4	--	ng/L	< 1.8 U	< 1.8 U	73	69	0.66 J	150	4.2	5.6
PFHxS	355-46-4	10	ng/L	1.2 J	< 1.8 U	1800 D	570 D	17	2500 D	830 D	120 J-
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.8 U	170	4.5	0.49 J	250	24	12
PFOS	1763-23-1	4	ng/L	< 1.8 U	< 1.8 U	8700 D	71	11	18000 D	4300 D	2000 D
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.8 U	3.7	< 1.9 U	< 1.8 U	< 2.0 U	1.3 J	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	< 1.8 U	290 J-	340 J-	2.4	790 D	8.8 J-	520 D
6:2 FTS	27619-97-2	--	ng/L	< 4.4 U	< 4.6 U	68000 D	4200 D	2200 D	83000 D	2800 D	700000 D
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	0.55 J	23000 D	28	47	5300 DJ-	120000 D	19000 D
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.8 U	30	< 1.9 U	< 1.8 U	< 2.0 U	1300 D	22
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.8 U	3500 D	10	< 1.8 U	500 D	130	230
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.8 U	1.4 J	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	0.51 J-
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.4 U	< 4.6 U	< 4.6 U	< 4.8 U	< 4.6 U	< 4.9 U	< 4.5 U	< 4.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.4 U	< 4.6 U	520 D	< 4.8 U	< 4.6 U	17	12	52 J-
NMeFOSE	24448-09-7	--	ng/L	< 3.5 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.9 U	< 3.6 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.5 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.7 U	8.8	< 3.6 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 2.0 U	< 1.8 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6A
Groundwater Sampling Results,
Interim LTM FTC (Non-GETS), September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-19	PZ-59-21	PZ-65-16	PZ-65-33	PZ-67-16	PZ-67-16	PZ-67-40	PZ-68-16
			Sample ID	PZ-19 (110724)	PZ-59-21 (110624)	PZ-65-16 (110624)	PZ-65-33 (110624)	PZ-67-16 (110624)	DUP-02-LTM (110624)	PZ-67-40 (110624)	PZ-68-16 (111224)
			Parent Sample ID						PZ-67-16 (110624)		
			Sample Date	11/07/2024	11/06/2024	11/06/2024	11/06/2024	11/06/2024	11/06/2024	11/06/2024	11/12/2024
			Sample Type	N	N	N	N	N	FD	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	580 D	12	63	93	57	56	450 D	190
PFPeA	2706-90-3	--	ng/L	1900 D	9.2	120	190	120	120	2200 D	650 D
PFHxA	307-24-4	--	ng/L	1400 D	6.0	170	140	110	110	1300 D	320
PFHpA	375-85-9	--	ng/L	960 D	3.7	98	100	77	76	660 D	320
PFOA	335-67-1	4	ng/L	11000 D	< 1.9 U	2900 D	150	600 D	610 D	1100 D	300
PFNA	375-95-1	10	ng/L	620 D	< 1.9 U	22	19	15	15	210	400 D
PFDA	335-76-2	--	ng/L	28	< 1.9 U	21	1.0 J	< 1.9 U	< 1.9 U	38	36
PFUnA	2058-94-8	--	ng/L	6.5	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 UJ-	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	16	0.49 J	16	52	1.7 J	1.6 J	77	2.1
PFPeS	2706-91-4	--	ng/L	14	< 1.9 U	15	1.6 J	1.0 J	0.98 J	1.2 J	< 1.8 U
PFHxS	355-46-4	10	ng/L	240	1.2 J	990 D	40	96	92	20	2.9
PFHpS	375-92-8	--	ng/L	7.1	< 1.9 U	22	1.3 J	2.3	2.4	1.6 J	< 1.8 U
PFOS	1763-23-1	4	ng/L	510 D	< 1.9 U	2400 D	63	110	110	190	48
PFNS	68259-12-1	--	ng/L	0.54 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	64 J-	< 1.9 U	< 1.9 U	3.1	< 1.9 U	< 1.9 U	54	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	3900 D	< 4.7 U	5.6	190	< 4.7 U	< 4.7 U	9400 D	460 D
8:2 FTS	39108-34-4	--	ng/L	840 D	< 1.9 U	< 1.9 U	27	< 1.9 U	< 1.9 U	2700 D	120
10:2 FTS	120226-60-0	--	ng/L	41	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
FOSA	754-91-6	--	ng/L	310	< 1.9 U	6.1	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	0.81 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	1.5 J	< 4.7 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.6 U
NEtFOSAA	2991-50-6	--	ng/L	38	< 4.7 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.7 U	8.0	< 4.6 U
NMeFOSE	24448-09-7	--	ng/L	< 3.5 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.8 U	< 3.7 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.5 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.8 U	< 3.7 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 UJ-	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6A
Groundwater Sampling Results,
Interim LTM FTC (Non-GETS), September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-68-26	PZ-68-66	PZ-68-66	PZ-69-24	PZ-69-43	PZ-86-17	PZ-86-38
			Sample ID	PZ-68-26 (111224)	PZ-68-66 (111324)	DUP-03-LTM (111324)	PZ-69-24 (110624)	PZ-69-43 (110624)	PZ-86-17 (020625)	PZ-86-38 (020625)
			Parent Sample ID			PZ-68-66 (111324)				
			Sample Date	11/12/2024	11/13/2024	11/13/2024	11/06/2024	11/06/2024	02/06/2025	02/06/2025
			Sample Type	N	N	FD	N	N	N	N
Analyte	CAS		Units							
PFBA	375-22-4	--	ng/L	340 D	< 4.6 U	< 4.5 U	16	770 D	90	920 D
PFPeA	2706-90-3	--	ng/L	2000 D	< 1.8 U	< 1.8 U	21	3500 D	220	3100 D
PFHxA	307-24-4	--	ng/L	1200 D	< 1.8 U	< 1.8 U	18	3200 D	130	2800 D
PFHpA	375-85-9	--	ng/L	410 D	< 1.8 U	< 1.8 U	12	1200 D	77	1600 D
PFOA	335-67-1	4	ng/L	150	< 1.8 U	< 1.8 U	46	7800 D	290	9700 D
PFNA	375-95-1	10	ng/L	130	< 1.8 U	< 1.8 U	< 1.8 U	1500 D	< 1.6 U	1900 D
PFDA	335-76-2	--	ng/L	9.0	< 1.8 U	< 1.8 U	< 1.8 U	99	< 1.6 U	720 D
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	19	< 1.6 U	98
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	2.2 J	< 1.6 U	< 1.6 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	NA	NA
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	NA	NA
PFBS	375-73-5	2,000	ng/L	7.8	< 1.8 U	< 1.8 U	1.3 J	87	3.0	23
PFPeS	2706-91-4	--	ng/L	0.53 J	< 1.8 U	< 1.8 U	0.42 J	84	1.0 J	29
PFHxS	355-46-4	10	ng/L	4.6	< 1.8 U	< 1.8 U	5.7	930 D	16	720 D
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	66	< 1.6 U	77
PFOS	1763-23-1	4	ng/L	27	0.74 J	< 1.8 U	< 1.8 U	1200 D	2.0	6400 D
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
4:2 FTS	757124-72-4	--	ng/L	19	< 1.8 U	< 1.8 U	< 1.8 U	130 J-	< 3.3 U	130
6:2 FTS	27619-97-2	--	ng/L	2700 D	< 4.6 U	< 4.5 U	< 4.6 U	30000 D	1.4 J	16000 D
8:2 FTS	39108-34-4	--	ng/L	160	1.9	< 1.8 U	< 1.8 U	2400 D	1.4 J	7800 D
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	25	NA	NA
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	360	< 1.6 U	560 D
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.5 U	< 4.6 U	< 4.5 U	< 4.6 U	< 4.6 U	< 1.6 U	< 1.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.5 U	< 4.6 U	< 4.5 U	< 4.6 U	99	< 1.6 U	460 D
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.7 U	< 8.2 U	< 8.0 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 8.2 U	< 8.0 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	< 1.6 U	0.55 J
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	0.21 J	0.72 J
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	< 1.6 U	< 1.6 U
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.7 U	< 1.2 U	0.83 J
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	< 1.6 U	< 1.6 U
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.6 U	< 1.6 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	< 3.3 U	55
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	< 8.2 U	160
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	< 8.2 U	30

Table 3-6B
Groundwater Sampling Results,
Interim LTM Northern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW003D	MW013S-R	MW013M-R	MW013D-R	MW042D	MW046D	MW064D	MW125S-20
			Sample ID	MW003D (110624)	MW013S-R (110524)	MW013M-R (110524)	MW013D-R (110524)	MW042D (110524)	MW046D (110824)	MW064D (110724)	MW125S-20 (110524)
			Parent Sample ID								
			Sample Date	11/06/2024	11/05/2024	11/05/2024	11/05/2024	11/05/2024	11/08/2024	11/07/2024	11/05/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	21	81	47	16	72	< 50 U	29	62
PFPeA	2706-90-3	--	ng/L	57	250 D	130	43	300 D	38 J+	110	150
PFHxA	307-24-4	--	ng/L	70	160	98	44	170	68	72	150
PFHpA	375-85-9	--	ng/L	130	96	56	82	230 D	83	81	110
PFOA	335-67-1	4	ng/L	1200 D	41	21	690 D	600 D	230	460 D	52
PFNA	375-95-1	10	ng/L	49	< 1.8 U	0.51 J	64	3.3	2.4 J	8.9	2.9
PFDA	335-76-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	0.51 J	< 1.8 U	< 1.8 U	< 1.9 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	1.7 J	9.8	6.2	1.4 J	1.7 J	2.2	0.66 J	4.5
PFPeS	2706-91-4	--	ng/L	1.1 J	0.66 J	0.37 J	1.1 J	0.98 J	1.4 J	0.31 J	0.53 J
PFHxS	355-46-4	10	ng/L	12	5.4	2.8	10	3.9	5.7	3.9	5.3
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	5.0
PFOS	1763-23-1	4	ng/L	< 1.8 U	2.9 J	2.7 J	< 1.8 U	< 1.8 U	2.2	< 1.8 U	20
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	9.4	< 1.8 U	< 1.9 U	8.2	4.7	1.4 J	6.1	< 1.9 U
6:2 FTS	27619-97-2	--	ng/L	150	< 4.5 U	< 4.7 U	110	61	29	100	< 4.7 U
8:2 FTS	39108-34-4	--	ng/L	1.7 J	< 1.8 U	< 1.9 U	< 1.8 U	0.54 J	2.7	< 1.8 U	< 1.9 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 4.5 U	< 4.7 U	< 4.6 U	< 4.4 U	< 4.6 U	< 4.6 U	< 4.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	< 4.5 U	< 4.7 U	< 4.6 U	< 4.4 U	< 4.6 U	< 4.6 U	< 4.7 U
NMeFOSE	24448-09-7	--	ng/L	< 3.7 U	< 3.6 U	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.7 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.7 U	< 3.6 U	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.7 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6B
Groundwater Sampling Results,
Interim LTM Northern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW125S-20	MW125M-35	MW125D-60	MW128S-17	MW128M-30	MW129S-21	MW129M-45	MW129M-45
			Sample ID	DUP-04-LTM (110524)	MW125M-35 (110524)	MW125D-60 (110524)	MW128S-17 (103024)	MW128M-30 (103024)	MW129S-21 (103024)	MW129M-45 (103024)	DUP-05-LTM (103024)
			Parent Sample ID	MW125S-20 (110524)							MW129M-45 (103024)
			Sample Date	11/05/2024	11/05/2024	11/05/2024	10/30/2024	10/30/2024	10/30/2024	10/30/2024	10/30/2024
			Sample Type	FD	N	N	N	N	N	N	FD
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	63	26	13	110 J-	38	99	< 4.5 U	< 4.5 U
PFPeA	2706-90-3	--	ng/L	160	71	26	360	100	280	< 1.8 U	< 1.8 U
PFHxA	307-24-4	--	ng/L	140	49	18	280	69	220	< 1.8 U	< 1.8 U
PFHpA	375-85-9	--	ng/L	120	29	6.2	180	37	140	< 1.8 U	< 1.8 U
PFOA	335-67-1	4	ng/L	52	12	25	42	12	36	< 1.8 U	< 1.8 U
PFNA	375-95-1	10	ng/L	3.2	< 4.0 U	< 1.9 U	5.4	0.26 J	11	< 1.8 U	< 1.8 U
PFDA	335-76-2	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	4.7	4.6	0.87 J	5.5	2.6	4.8	< 1.8 U	< 1.8 U
PFPeS	2706-91-4	--	ng/L	0.52 J	< 4.0 U	0.38 J	0.36 J	0.37 J	0.30 J	< 1.8 U	< 1.8 U
PFHxS	355-46-4	10	ng/L	5.0	< 4.0 U	0.63 J	1.7 J	1.9	2.4	< 1.8 U	< 1.8 U
PFHpS	375-92-8	--	ng/L	4.9	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	20	< 4.0 U	< 1.9 U	7.0	1.3 J	13	< 1.8 U	< 1.8 U
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 UJ-	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	< 4.7 U	< 10 U	3.1 J	< 4.7 U	< 4.6 U	3.1 J	< 4.5 U	< 4.5 U
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.7 U	< 10 U	< 4.8 U	< 4.7 U	< 4.6 U	< 4.4 U	< 4.5 U	< 4.5 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.7 U	< 10 U	< 4.8 U	< 4.7 U	< 4.6 U	< 4.4 U	< 4.5 U	< 4.5 U
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 8.0 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.6 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 8.0 U	< 3.8 U	< 3.7 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 4.0 U	< 1.9 U	< 1.9 UJ-	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6B
Groundwater Sampling Results,
Interim LTM Northern Plume, September 2024 – February 2025
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		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-28-14	PZ-28-54	PZ-28-75	PZ-28-75	PZ-63-44	PZ-63-60	PZ-79-16	PZ-79-25
			Sample ID	PZ-28-14 (103124)	PZ-28-54 (103124)	PZ-28-75 (103124)	PZ-28-75 (021025)	PZ-63-44 (103024)	PZ-63-60 (103024)	PZ-79-16 (110424)	PZ-79-25 (110424)
			Parent Sample ID								
			Sample Date	10/31/2024	10/31/2024	10/31/2024	02/10/2025	10/30/2024	10/30/2024	11/04/2024	11/04/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	74	17	5.8	3.6	12	18	22	32
PFPeA	2706-90-3	--	ng/L	150	41	14	8.8	20	41	32	74
PFHxA	307-24-4	--	ng/L	120	72	17	9.8 J-	15	36	29	97
PFHpA	375-85-9	--	ng/L	55	84	27	15	20	64	20	34
PFOA	335-67-1	4	ng/L	33	300	120	75	180	570	91	910 D
PFNA	375-95-1	10	ng/L	3.1	< 4.0 U	0.56 J	< 1.7 U	18	140	1.0 J	3.4
PFDA	335-76-2	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	NA	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	NA	< 4.0 U	< 4.0 U	< 1.9 UJ-	< 1.8 U
PFBS	375-73-5	2,000	ng/L	15	2.0 J	0.38 J	0.27 J	1.3 J	1.9 J	1.8 J	1.7 J
PFPeS	2706-91-4	--	ng/L	0.43 J	0.67 J	< 1.8 U	< 1.7 U	0.84 J	1.2 J	< 1.9 U	1.1 J
PFHxS	355-46-4	10	ng/L	7.5	1.4 J	0.81 J	0.55 J	4.7	17	1.2 J	6.5
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	6.3	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	2.2 J	2.9
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	5.4	2.9	1.5 J	1.4 J	6.5	< 1.9 U	1.1 J-
6:2 FTS	27619-97-2	--	ng/L	< 4.5 U	15	10	5.3	45	210	3.1 J	14
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	< 4.0 U	1.2 J	< 3.5 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	NA	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.5 U	< 10 U	< 4.6 U	< 1.7 U	< 10 U	< 10 U	< 4.7 U	< 4.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.5 U	< 10 U	< 4.6 U	< 1.7 U	< 10 U	< 10 U	< 4.7 U	< 4.6 U
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 8.0 U	< 3.7 U	< 8.7 U	< 8.0 U	< 8.0 U	< 3.7 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 8.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 8.0 U	< 3.7 U	< 1.3 U	< 8.0 U	< 8.0 U	< 3.7 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 4.0 U	< 1.8 U	< 1.7 U	< 4.0 U	< 4.0 U	< 1.9 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	< 3.5 U	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	< 8.7 U	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	< 8.7 U	NA	NA	NA	NA

Table 3-6B
Groundwater Sampling Results,
Interim LTM Northern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-79-32	PZ-90-20
			Sample ID	PZ-79-32 (110424)	PZ-90-20 (020525)
			Parent Sample ID		
			Sample Date	11/04/2024	02/05/2025
			Sample Type	N	N
Analyte	CAS		Units		
PFBA	375-22-4	--	ng/L	17	21
PFPeA	2706-90-3	--	ng/L	41	46
PFHxA	307-24-4	--	ng/L	55	28
PFHpA	375-85-9	--	ng/L	19	15
PFOA	335-67-1	4	ng/L	360	36
PFNA	375-95-1	10	ng/L	< 1.8 U	< 1.6 U
PFDA	335-76-2	--	ng/L	< 1.8 U	< 1.6 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.6 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.6 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.6 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.6 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	NA
PFODA	16517-11-6	--	ng/L	< 1.8 U	NA
PFBS	375-73-5	2,000	ng/L	1.5 J	3.3
PFPeS	2706-91-4	--	ng/L	0.82 J	< 1.6 U
PFHxS	355-46-4	10	ng/L	4.0	0.68 J
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.6 U
PFOS	1763-23-1	4	ng/L	< 1.8 U	< 1.6 U
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.6 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.6 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.6 U
4:2 FTS	757124-72-4	--	ng/L	0.79 J-	< 3.2 U
6:2 FTS	27619-97-2	--	ng/L	6.7	1.9 J
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	< 3.2 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	NA
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.6 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.6 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.6 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 1.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	< 1.6 U
NMeFOSE	24448-09-7	--	ng/L	< 3.7 U	< 7.9 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 7.9 U
PFMPA	377-73-1	--	ng/L	NA	< 1.6 U
PFMBA	863090-89-5	--	ng/L	NA	< 1.6 U
NFDHA	151772-58-6	--	ng/L	NA	< 1.6 U
HFPO-DA	13252-13-6	10	ng/L	< 3.7 U	< 1.2 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.6 U
PFEESA	113507-82-7	--	ng/L	NA	< 1.6 U
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.6 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.6 U
3:3 FTCA	356-02-5	--	ng/L	NA	< 3.2 U
5:3 FTCA	914637-49-3	--	ng/L	NA	< 7.9 U
7:3 FTCA	812-70-4	--	ng/L	NA	< 7.9 U

Table 3-6C
Groundwater Sampling Results,
Interim LTM Southern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW-101-16	MW-101-72	PZ-33-12	PZ-33-33	PZ-33-67	PZ-33-67	PZ-33-105	PZ-34-17
			Sample ID	MW-101-16 (102424)	MW-101-72 (102424)	PZ-33-12 (102524)	PZ-33-33 (102524)	PZ-33-67 (102524)	DUP-06-LTM (102524)	PZ-33-105 (102524)	PZ-34-17 (102424)
			Parent Sample ID						PZ-33-67 (102524)		
			Sample Date	10/24/2024	10/24/2024	10/25/2024	10/25/2024	10/25/2024	10/25/2024	10/25/2024	10/24/2024
			Sample Type	N	N	N	N	N	FD	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	7.6	61	7.5	28	< 4.6 U	< 4.8 U	< 4.7 U	16
PFPeA	2706-90-3	--	ng/L	6.2	190	8.6	65	< 1.8 U	< 1.9 U	0.77 J	14
PFHxA	307-24-4	--	ng/L	9.5	230	6.8	130	< 1.8 UB	< 1.9 U	< 1.9 UB	12
PFHpA	375-85-9	--	ng/L	4.5	120	4.1	68	< 1.8 U	< 1.9 U	0.26 J	7.4
PFOA	335-67-1	4	ng/L	13	2700 D	4.1	1300 D	< 1.8 U	< 1.9 U	< 1.9 U	17
PFNA	375-95-1	10	ng/L	0.36 J	120	3.2	53	< 1.8 U	< 1.9 U	< 1.9 U	0.40 J
PFDA	335-76-2	--	ng/L	< 1.8 U	2.7	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	2.8	43	2.3	4.1	< 1.8 U	< 1.9 U	< 1.9 U	2.5
PFPeS	2706-91-4	--	ng/L	< 1.8 U	43	< 1.8 U	3.6	< 1.8 U	< 1.9 U	< 1.9 U	0.29 J
PFHxS	355-46-4	10	ng/L	0.78 J	210	1.1 J	25	< 1.8 U	< 1.9 U	< 1.9 U	2.0
PFHpS	375-92-8	--	ng/L	< 1.8 U	9.6	< 1.8 U	0.48 J	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFOS	1763-23-1	4	ng/L	1.2 J	130	5.9	2.9	< 1.8 U	< 1.9 U	< 1.9 U	2.4
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	43	< 1.8 U	3.2	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
6:2 FTS	27619-97-2	--	ng/L	< 4.5 U	1100 D	< 4.6 U	92	< 4.6 U	< 4.8 U	< 4.7 U	< 4.7 U
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	61	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
FOSA	754-91-6	--	ng/L	< 1.8 U	1.0 J	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.5 U	< 4.9 U	< 4.6 U	< 4.5 U	< 4.6 U	< 4.8 U	< 4.7 U	< 4.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.5 U	< 4.9 U	< 4.6 U	< 4.5 U	< 4.6 U	< 4.8 U	< 4.7 U	< 4.7 U
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 3.9 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.8 U	< 3.7 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 3.9 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.8 U	< 3.7 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6C
Groundwater Sampling Results,
Interim LTM Southern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-34-84	PZ-35-17	PZ-35-37	PZ-46-19	PZ-46-40	PZ-46-40	PZ-46-65	PZ-70-17
			Sample ID	PZ-34-84 (102424)	PZ-35-17 (102424)	PZ-35-37 (102424)	PZ-46-19 (102524)	PZ-46-40 (102424)	DUP-07-LTM (102424)	PZ-46-65 (102424)	PZ-70-17 (102924)
			Parent Sample ID						PZ-46-40 (102424)		
			Sample Date	10/24/2024	10/24/2024	10/24/2024	10/25/2024	10/24/2024	10/24/2024	10/24/2024	10/29/2024
			Sample Type	N	N	N	N	N	FD	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	< 4.6 U	7.3	< 4.5 U	42	11	11	52	94
PFPeA	2706-90-3	--	ng/L	< 1.9 U	3.1	< 1.8 U	120	38	37	220	290
PFHxA	307-24-4	--	ng/L	< 1.9 UB	5.2	< 1.8 UB	61	22	21	160	180
PFHpA	375-85-9	--	ng/L	< 1.9 U	6.3	0.26 J	45	20	19	60	140
PFOA	335-67-1	4	ng/L	< 1.9 U	11	< 1.8 U	51	51	49	130	260
PFNA	375-95-1	10	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	3.5 J	13	13	3.1	1.7 J
PFDA	335-76-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	0.99 J	2.5	2.3	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	0.80 J	< 1.8 U	< 1.8 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	R
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	< 1.9 U	1.2 J	< 1.8 U	1.4 J	0.42 J	0.47 J	1.0 J	1.5 J
PFPeS	2706-91-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	0.79 J	0.75 J
PFHxS	355-46-4	10	ng/L	< 1.9 U	1.8	< 1.8 U	14	6.8	6.4	11	20
PFHpS	375-92-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	0.24 J
PFOS	1763-23-1	4	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	8.7	22	21	1.5 J	0.91 J
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	4.8	0.50 J
6:2 FTS	27619-97-2	--	ng/L	< 4.6 U	< 4.5 U	< 4.5 U	21	35	33	870 D	140
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	5.9	6.9	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 4.5 U	< 4.5 U	< 10 U	< 4.7 U	< 4.6 U	< 4.6 U	< 4.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	< 4.5 U	< 4.5 U	< 10 U	< 4.7 U	< 4.6 U	< 4.6 U	< 4.6 U
NMeFOSE	24448-09-7	--	ng/L	< 3.7 U	< 3.6 U	< 3.6 U	< 8.0 U	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.7 U	< 3.6 U	< 3.6 U	< 8.0 U	< 3.8 U	< 3.7 U	< 3.6 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 4.0 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6C
Groundwater Sampling Results,
Interim LTM Southern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-70-33	PZ-70-55	PZ-70-83	PZ-71-111	PZ-72-73	PZ-74-32	PZ-74-32	PZ-74-80
			Sample ID	PZ-70-33 (103024)	PZ-70-55 (102924)	PZ-70-83 (110724)	PZ-71-111 (103024)	PZ-72-73 (102424)	PZ-74-32 (102324)	PZ-74-32 (021125)	PZ-74-80 (102324)
			Parent Sample ID								
			Sample Date	10/30/2024	10/29/2024	11/07/2024	10/30/2024	10/24/2024	10/23/2024	02/11/2025	10/23/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	13	< 4.5 U	< 4.6 U	120	22	21	19	6.2
PFPeA	2706-90-3	--	ng/L	12	< 1.8 U	< 1.9 U	270	86	65	78	17
PFHxA	307-24-4	--	ng/L	20	< 1.8 U	0.88 J	330	69	40	41	9.5
PFHpA	375-85-9	--	ng/L	30	< 1.8 U	< 1.9 U	120	32	34	37	10
PFOA	335-67-1	4	ng/L	730 D	< 1.8 U	< 1.9 U	1500 D	180	91	77	17
PFNA	375-95-1	10	ng/L	8.4	< 1.8 U	< 1.9 U	< 1.8 U	12	14	17	2.3 J
PFDA	335-76-2	--	ng/L	24	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	2.0	2.5	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	0.54 J
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	1.8
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	NA	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	NA	< 1.8 U
PFBS	375-73-5	2,000	ng/L	0.80 J	< 1.8 U	< 1.9 U	8.5	2.6	1.7 J	2.1	0.43 J
PFPeS	2706-91-4	--	ng/L	0.53 J	< 1.8 U	< 1.9 U	3.5	2.4	1.8	1.8	< 1.8 U
PFHxS	355-46-4	10	ng/L	17	< 1.8 U	< 1.9 U	4.0	18	15	20	1.9
PFHpS	375-92-8	--	ng/L	6.0	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	0.57 J	< 1.7 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	850 D	< 1.8 U	< 1.9 U	< 1.8 U	1.2 J	39	45	1.3 J
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	5.9	1.1 J	1.3 J	0.32 J
6:2 FTS	27619-97-2	--	ng/L	< 4.6 U	< 4.5 U	11	3.1 J	450 D	64	80	10
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	39	40	1.0 J
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	NA	0.89 J
FOSA	754-91-6	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 4.5 U	1.1 J	< 4.5 U	< 4.7 U	< 4.4 U	< 1.7 U	1.6 J
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.7 U	< 4.4 U	< 1.7 U	2.0 J
NMeFOSE	24448-09-7	--	ng/L	< 3.7 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.6 U	< 8.3 U	2.6 J
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 8.3 U	2.6
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	< 1.7 U	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	< 1.7 U	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	< 1.7 U	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.7 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.7 U	< 3.6 U	< 1.2 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	< 1.7 U	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.8 UJ-	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	< 3.3 U	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	< 8.3 U	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	< 8.3 U	NA

Table 3-6C
Groundwater Sampling Results,
Interim LTM Southern Plume, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-74-80	PZ-74-80	PZ-76-34	TW-03
			Sample ID	PZ-74-80 (021125)	DUP-01-LTM (021125)	PZ-76-34 (102424)	TW-03 (102424)
			Parent Sample ID		PZ-74-80 (021125)		
			Sample Date	02/11/2025	02/11/2025	10/24/2024	10/24/2024
			Sample Type	N	FD	N	N
Analyte	CAS		Units				
PFBA	375-22-4	--	ng/L	6.3	19	8.9	< 10 U
PFPeA	2706-90-3	--	ng/L	28	62	9.3	4.8
PFHxA	307-24-4	--	ng/L	14	41	12	4.4
PFHpA	375-85-9	--	ng/L	15	33	6.2	2.0 J
PFOA	335-67-1	4	ng/L	20	76	43	5.9
PFNA	375-95-1	10	ng/L	2.2	17	0.49 J	1.4 J
PFDA	335-76-2	--	ng/L	< 1.6 U	2.2	< 1.9 U	< 4.0 U
PFUnA	2058-94-8	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFDoA	307-55-1	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFTriA	72629-94-8	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFTeA	376-06-7	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFHxDA	67905-19-5	--	ng/L	NA	NA	< 1.9 U	< 4.0 U
PFODA	16517-11-6	--	ng/L	NA	NA	< 1.9 U	< 4.0 U
PFBS	375-73-5	2,000	ng/L	0.44 J	1.8	1.8 J	< 4.0 U
PFPeS	2706-91-4	--	ng/L	0.33 J	1.8	0.37 J	< 4.0 U
PFHxS	355-46-4	10	ng/L	2.3	17	2.9	2.2 J
PFHpS	375-92-8	--	ng/L	< 1.6 U	0.82 J	< 1.9 U	< 4.0 U
PFOS	1763-23-1	4	ng/L	0.76 J	41	< 1.9 U	1.3 J
PFNS	68259-12-1	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFDS	335-77-3	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFDoS	79780-39-5	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
4:2 FTS	757124-72-4	--	ng/L	< 3.3 U	1.2 J	< 1.9 U	< 4.0 U
6:2 FTS	27619-97-2	--	ng/L	13	86	< 4.7 U	< 10 U
8:2 FTS	39108-34-4	--	ng/L	0.81 J	40	< 1.9 U	< 4.0 U
10:2 FTS	120226-60-0	--	ng/L	NA	NA	< 1.9 U	< 4.0 U
FOSA	754-91-6	--	ng/L	< 1.6 U	0.56 J	< 1.9 U	< 4.0 U
NMeFOSA	31506-32-8	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
NEtFOSA	4151-50-2	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
NMeFOSAA	2355-31-9	--	ng/L	< 1.6 U	< 1.6 U	< 4.7 U	< 10 U
NEtFOSAA	2991-50-6	--	ng/L	< 1.6 U	< 1.6 U	< 4.7 U	< 10 U
NMeFOSE	24448-09-7	--	ng/L	< 8.2 U	< 8.1 U	< 3.8 U	< 8.0 U
NEtFOSE	1691-99-2	--	ng/L	< 8.2 U	< 8.1 U	< 1.9 U	< 4.0 U
PFMPA	377-73-1	--	ng/L	< 1.6 U	< 1.6 U	NA	NA
PFMBA	863090-89-5	--	ng/L	< 1.6 U	< 1.6 U	NA	NA
NFDHA	151772-58-6	--	ng/L	< 1.6 U	< 1.6 U	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 1.2 U	< 1.2 U	< 3.8 U	< 8.0 U
DONA	919005-14-4	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
PFEESA	113507-82-7	--	ng/L	< 1.6 U	< 1.6 U	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.6 U	< 1.6 U	< 1.9 U	< 4.0 U
3:3 FTCA	356-02-5	--	ng/L	< 3.3 U	< 3.2 U	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	< 8.2 U	< 8.1 U	NA	NA
7:3 FTCA	812-70-4	--	ng/L	< 8.2 U	< 8.1 U	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW-100-32	MW-100-32	MW-100-32	MW-100-68	MW-100-68	MW-100-88	MW-100-88	MW126S-20
			Sample ID	MW-100-32 (091124)	MW-100-32 (102224)	MW-100-32 (021025)	MW-100-68 (091124)	MW-100-68 (102224)	MW-100-88 (091124)	MW-100-88 (102224)	MW126S-20 (102924)
			Parent Sample ID								
			Sample Date	09/11/2024	10/22/2024	02/10/2025	09/11/2024	10/22/2024	09/11/2024	10/22/2024	10/29/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	3.1 J	< 47 U	0.33 J	< 4.5 U	< 4.6 U	< 4.5 U	2.2 J	48
PFPeA	2706-90-3	--	ng/L	3.2	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	0.70 J	120
PFHxA	307-24-4	--	ng/L	1.7 J	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	0.63 J	84
PFHpA	375-85-9	--	ng/L	1.0 J	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	52
PFOA	335-67-1	4	ng/L	2.3	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	1.0 J	26
PFNA	375-95-1	10	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	1.0 J
PFDA	335-76-2	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 19 U	NA	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 19 U	NA	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFBS	375-73-5	2,000	ng/L	< 1.8 UB	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	8.7
PFPeS	2706-91-4	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	0.49 J
PFHxS	355-46-4	10	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	5.1
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	0.38 J
PFOS	1763-23-1	4	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	6.0
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	< 19 U	< 3.4 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
6:2 FTS	27619-97-2	--	ng/L	< 4.6 U	< 47 U	< 3.4 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.5 U	< 4.2 U
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	< 19 U	< 3.4 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 19 U	NA	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
FOSA	754-91-6	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 47 U	< 1.7 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.5 U	< 4.2 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	< 47 U	< 1.7 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.5 U	< 4.2 U
NMeFOSE	24448-09-7	--	ng/L	< 3.7 U	< 38 U	< 8.5 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.4 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 19 U	< 8.5 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFMPA	377-73-1	--	ng/L	NA	NA	< 1.7 U	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	< 1.7 U	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	< 1.7 U	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.7 U	< 38 U	< 1.3 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.6 U	< 3.4 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
PFEESA	113507-82-7	--	ng/L	NA	NA	< 1.7 U	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 19 U	< 1.7 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.7 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	< 3.4 U	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	< 8.5 U	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	< 8.5 U	NA	NA	NA	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW126D-40	PZ-26-11	PZ-26-11	PZ-26-11	PZ-26-36	PZ-26-36	PZ-26-36	PZ-26-36
			Sample ID	MW126D-40 (102924)	PZ-26-11 (091124)	PZ-26-11 (102824)	DUP-08-LTM (102824)	PZ-26-36 (091124)	DUP-01-LTM (091124)	PZ-26-36 (102824)	PZ-26-36 (021125)
			Parent Sample ID				PZ-26-11 (102824)		PZ-26-36 (091124)		
			Sample Date	10/29/2024	09/11/2024	10/28/2024	10/28/2024	09/11/2024	09/11/2024	10/28/2024	02/11/2025
			Sample Type	N	N	N	FD	N	FD	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	33	14	10	9.6 J	11	11	12	9.5
PFPeA	2706-90-3	--	ng/L	79	12	12	12	28	28	31	36
PFHxA	307-24-4	--	ng/L	62	11	9.8	8.5	19	18	18	11 J
PFHpA	375-85-9	--	ng/L	32	5.0	5.1	4.7	14	12	14	10 J-
PFOA	335-67-1	4	ng/L	19	4.6	6.5	5.8	11	11	9.6	7.9
PFNA	375-95-1	10	ng/L	1.0 J	< 1.8 U	0.77 J	0.65 J	0.82 J	0.50 J	0.56 J	< 1.7 U
PFDA	335-76-2	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	NA
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	NA
PFBS	375-73-5	2,000	ng/L	29	2.8 J+	2.3 J	2.4 J	< 1.8 UB	< 1.8 UB	0.85 J	0.96 J
PFPeS	2706-91-4	--	ng/L	0.34 J	< 1.8 U	< 4.0 U	< 4.0 U	0.51 J	0.57 J	0.48 J	0.27 J
PFHxS	355-46-4	10	ng/L	3.1	0.81 J	< 4.0 U	1.2 J	1.9	2.0	2.1	1.9
PFHpS	375-92-8	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFOS	1763-23-1	4	ng/L	2.7	< 1.8 U	< 4.0 U	1.1 J	2.1	2.2	2.1	1.9
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
4:2 FTS	757124-72-4	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 3.4 U
6:2 FTS	27619-97-2	--	ng/L	< 4.8 U	< 4.5 U	< 10 U	< 10 U	12	12	15	13
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	0.47 J	< 1.8 U	< 1.8 U	< 3.4 U
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	NA
FOSA	754-91-6	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.8 U	< 4.5 U	< 10 U	< 10 U	< 4.5 U	< 4.5 U	< 4.5 U	< 1.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.8 U	< 4.5 U	< 10 U	< 10 U	< 4.5 U	< 4.5 U	< 4.5 U	< 1.7 U
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 3.6 U	< 8.0 U	< 8.0 U	< 3.6 U	< 3.6 U	< 3.6 U	< 8.5 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 8.5 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 1.7 U
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 1.7 U
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 1.7 U
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 3.6 U	< 8.0 U	< 8.0 U	< 3.6 U	< 3.6 U	< 3.6 U	< 1.3 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 1.7 U
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.8 U	< 4.0 U	< 4.0 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.7 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 3.4 U
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 8.5 UJ
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	< 8.5 U

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-44-73	PZ-60-20	PZ-60-20	PZ-61-11	PZ-61-11	PZ-62-62	PZ-66-20	PZ-66-57
			Sample ID	PZ-44-73 (102324)	PZ-60-20 (091124)	PZ-60-20 (102824)	PZ-61-11 (102524)	PZ-61-11 (021125)	PZ-62-62 (102824)	PZ-66-20 (102924)	PZ-66-57 (102924)
			Parent Sample ID								
			Sample Date	10/23/2024	09/11/2024	10/28/2024	10/25/2024	02/11/2025	10/28/2024	10/29/2024	10/29/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	< 47 U	10	10	29	14	13	7.3	< 4.6 U
PFPeA	2706-90-3	--	ng/L	< 19 U	20	24	40	31	29	4.7	< 1.8 U
PFHxA	307-24-4	--	ng/L	< 19 U	13	13	49	35	44	1.2 J	< 1.8 U
PFHpA	375-85-9	--	ng/L	< 19 U	4.1	5.3	66	54 J-	15	< 1.8 U	< 1.8 U
PFOA	335-67-1	4	ng/L	< 19 U	3.3	5.5	10	5.9	18	1.0 J	< 1.8 U
PFNA	375-95-1	10	ng/L	< 19 U	1.0 J	1.5 J	3.8 J	5.3	< 4.0 U	< 1.8 U	< 1.8 U
PFDA	335-76-2	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	NA	< 4.0 U	< 1.8 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	NA	< 4.0 U	< 1.8 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	< 19 U	2.1 J+	2.9	2.8 J	1.2 J	0.72 J	0.37 J	< 1.8 U
PFPeS	2706-91-4	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFHxS	355-46-4	10	ng/L	< 19 U	0.69 J	0.81 J	1.3 J	0.85 J	< 4.0 U	1.2 J	< 1.8 U
PFHpS	375-92-8	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	< 19 U	4.3	8.4	2.3 J	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFNS	68259-12-1	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 3.3 U	0.75 J	< 1.8 U	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	< 47 U	< 4.4 U	< 4.3 U	11	1.4 J	< 10 U	< 4.5 U	< 4.6 U
8:2 FTS	39108-34-4	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 3.3 U	< 4.0 U	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	NA	< 4.0 U	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 47 U	< 4.4 U	< 4.3 U	< 10 U	< 1.6 U	< 10 U	< 4.5 U	< 4.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 47 U	< 4.4 U	< 4.3 U	< 10 U	< 1.6 U	< 10 U	< 4.5 U	< 4.6 U
NMeFOSE	24448-09-7	--	ng/L	< 38 U	< 3.5 U	< 3.4 U	< 8.0 U	< 8.1 U	< 8.0 U	< 3.6 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 8.1 U	< 4.0 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	0.19 J	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	< 1.6 U	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	< 1.6 U	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 38 U	< 3.5 U	< 3.4 U	< 8.0 U	< 1.2 U	< 8.0 U	< 3.6 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	< 1.6 U	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 19 U	< 1.8 U	< 1.7 U	< 4.0 U	< 1.6 U	< 4.0 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	< 3.3 U	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	< 8.1 U	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	< 8.1 U	NA	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-73-16	PZ-73-32	PZ-73-32	PZ-73-32	PZ-73-75	PZ-75-18	PZ-77-16	PZ-78-17
			Sample ID	PZ-73-16 (102324)	PZ-73-32 (102324)	DUP-09-LTM (102324)	PZ-73-32 (021025)	PZ-73-75 (102324)	PZ-75-18 (102424)	PZ-77-16 (102924)	PZ-78-17 (091124)
			Parent Sample ID			PZ-73-32 (102324)					
			Sample Date	10/23/2024	10/23/2024	10/23/2024	02/10/2025	10/23/2024	10/24/2024	10/29/2024	09/11/2024
			Sample Type	N	N	FD	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	6.8	10	10	8.8	< 4.5 U	22	< 4.5 U	14
PFPeA	2706-90-3	--	ng/L	7.8	19	19	9.4	< 1.8 U	21	< 1.8 U	30
PFHxA	307-24-4	--	ng/L	4.0	9.0	8.7	3.5	< 1.8 U	13	< 1.8 U	21
PFHpA	375-85-9	--	ng/L	1.7 J	8.7	8.6	1.9	< 1.8 U	7.7	< 1.8 U	11
PFOA	335-67-1	4	ng/L	3.5	7.7	7.1	3.7	< 1.8 U	6.8	< 1.8 U	4.6
PFNA	375-95-1	10	ng/L	< 1.8 U	1.0 J	1.0 J	1.4 J	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDA	335-76-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	NA	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	NA	< 1.8 UJ	< 1.8 U	< 1.8 U	< 1.8 UJ-
PFBS	375-73-5	2,000	ng/L	1.4 J	0.71 J	0.71 J	0.78 J	< 1.8 U	1.1 J	< 1.8 U	< 1.8 UB
PFPeS	2706-91-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFHxS	355-46-4	10	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	0.40 J	< 1.8 U	0.95 J	1.3 J	< 1.8 U
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	1.6 J	1.5 J	1.4 J	1.6 J	< 1.8 U	1.1 J	< 1.8 U	< 1.8 U
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 3.3 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	< 4.5 U	4.3 J	3.8 J	< 3.3 U	< 4.5 U	< 4.6 U	< 4.5 U	9.9
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 3.3 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	NA	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.5 U	< 4.7 U	< 4.7 U	< 1.7 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.5 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.5 U	< 4.7 U	< 4.7 U	< 1.7 U	< 4.5 U	< 4.6 U	< 4.5 U	< 4.5 U
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 3.8 U	< 3.7 U	< 8.3 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.6 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 8.3 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 3.8 U	< 3.7 U	< 1.2 U	< 3.6 U	< 3.7 U	< 3.6 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	< 1.7 U	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.9 U	< 1.9 U	< 1.7 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	< 3.3 U	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	< 8.3 U	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	< 8.3 U	NA	NA	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-78-17	PZ-78-74	PZ-78-74	PZ-80-37	PZ-80-37	PZ-80-37	PZ-81-25	PZ-81-92
			Sample ID	PZ-78-17 (102524)	PZ-78-74 (091124)	PZ-78-74 (102524)	PZ-80-37 (091124)	PZ-80-37 (102324)	DUP-10-LTM (102324)	PZ-81-25 (102524)	PZ-81-92 (102524)
			Parent Sample ID						PZ-80-37 (102324)		
			Sample Date	10/25/2024	09/11/2024	10/25/2024	09/11/2024	10/23/2024	10/23/2024	10/25/2024	10/25/2024
			Sample Type	N	N	N	N	N	FD	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	14	< 4.5 U	< 10 U	6.7	6.6	6.5	4.9	< 4.8 U
PFPeA	2706-90-3	--	ng/L	34	1.4 J	< 4.0 U	3.3	3.8	3.5	4.2	< 1.9 U
PFHxA	307-24-4	--	ng/L	22	0.73 J	< 4.0 U	3.6	3.1	3.1	3.1	0.74 J
PFHpA	375-85-9	--	ng/L	12	< 1.8 U	< 4.0 U	3.8	3.9	3.5	0.82 J	< 1.9 U
PFOA	335-67-1	4	ng/L	6.4	< 1.8 U	< 4.0 U	11	12	13	1.6 J	1.8 J
PFNA	375-95-1	10	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFDA	335-76-2	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFUnA	2058-94-8	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	3.3 J+	0.28 J	0.26 J	1.9	< 1.9 U
PFPeS	2706-91-4	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFHxS	355-46-4	10	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFHpS	375-92-8	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFOS	1763-23-1	4	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	0.55 J	< 1.9 U	< 1.8 U	< 1.9 U
PFNS	68259-12-1	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
6:2 FTS	27619-97-2	--	ng/L	9.7 J	< 4.5 U	< 10 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.6 U	< 4.8 U
8:2 FTS	39108-34-4	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
10:2 FTS	120226-60-0	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
FOSA	754-91-6	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
NMeFOSA	31506-32-8	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 10 U	< 4.5 U	< 10 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.6 U	< 4.8 U
NEtFOSAA	2991-50-6	--	ng/L	< 10 U	< 4.5 U	< 10 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.6 U	< 4.8 U
NMeFOSE	24448-09-7	--	ng/L	< 8.0 U	< 3.6 U	< 8.0 U	< 3.6 U	< 3.8 U	< 3.8 U	< 3.7 U	< 3.9 U
NEtFOSE	1691-99-2	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 8.0 U	< 3.6 U	< 8.0 U	< 3.6 U	< 3.8 U	< 3.8 U	< 3.7 U	< 3.9 U
DONA	919005-14-4	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 4.0 U	< 1.8 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-82-16	PZ-83-50	PZ-85-69	PZ-87-16	PZ-87-47	PZ-89-40	TW-02	TW-04
			Sample ID	PZ-82-16 (102424)	PZ-83-50 (102324)	PZ-85-69 (102424)	PZ-87-16 (020625)	PZ-87-47 (020625)	PZ-89-40 (020525)	TW-02 (102324)	TW-04 (091124)
			Parent Sample ID								
			Sample Date	10/24/2024	10/23/2024	10/24/2024	02/06/2025	02/06/2025	02/05/2025	10/23/2024	09/11/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	7.3	15	< 4.4 U	16	< 3.1 U	2.4 J	5.2	5.1
PFPeA	2706-90-3	--	ng/L	1.0 J	66	0.56 J	9.1	< 1.5 U	< 1.6 U	3.2	2.9
PFHxA	307-24-4	--	ng/L	2.4 J+	37	< 1.8 UB	3.1	< 1.5 U	0.32 J	1.6 J	1.6 J
PFHpA	375-85-9	--	ng/L	1.8	14	< 1.8 U	0.48 J	< 1.5 U	< 1.6 U	0.77 J	0.81 J
PFOA	335-67-1	4	ng/L	12	17	< 1.8 U	3.8	< 1.5 U	5.6	3.9	1.3 J
PFNA	375-95-1	10	ng/L	< 1.8 U	3.4	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFDA	335-76-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	NA	NA	NA	< 1.8 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	NA	NA	NA	< 1.8 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	2.3	0.63 J	< 1.8 U	0.57 J	< 1.5 U	0.26 J	0.46 J	1.8 J+
PFPeS	2706-91-4	--	ng/L	< 1.8 U	0.62 J	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFHxS	355-46-4	10	ng/L	4.4	2.6	< 1.8 U	2.3	< 1.5 U	1.0 J	0.50 J	0.67 J
PFHpS	375-92-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	3.6 J	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFNS	68259-12-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 3.0 U	< 3.1 U	< 3.3 U	< 1.8 U	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	< 4.5 U	16	< 4.4 U	< 3.0 U	< 3.1 U	0.67 J	< 4.4 U	< 4.4 U
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 3.0 U	< 3.1 U	< 3.3 U	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	NA	NA	NA	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.5 U	< 4.6 U	< 4.4 U	< 1.5 U	< 1.5 U	< 1.5 U	< 4.4 U	< 4.4 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.5 U	< 4.6 U	< 4.4 U	< 1.5 U	< 1.5 U	< 1.5 U	< 4.4 U	< 4.4 U
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 3.7 U	< 3.5 U	< 7.6 U	< 7.7 U	< 7.7 U	< 3.5 U	< 3.6 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 7.6 U	< 7.7 U	< 7.7 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	< 1.5 U	< 1.5 U	< 1.6 U	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	< 1.5 U	< 1.5 U	< 1.6 U	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	< 1.5 U	< 1.5 U	< 1.6 U	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 3.7 U	< 3.5 U	< 1.1 U	< 1.2 U	< 1.2 U	< 3.5 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	< 1.5 U	< 1.5 U	< 1.6 U	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.5 U	< 1.5 U	< 1.6 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	< 3.0 U	< 3.1 U	< 3.3 U	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	< 7.6 U	< 7.7 U	< 8.2 U	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	< 7.6 U	< 7.7 U	< 8.2 U	NA	NA

Table 3-6D
Groundwater Sampling Results,
Interim LTM Boundary Zone, September 2024 – February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	TW-04	TW-04	TW-05
			Sample ID	TW-04 (102324)	TW-04 (021025)	TW-05 (102324)
			Parent Sample ID			
			Sample Date	10/23/2024	02/10/2025	10/23/2024
			Sample Type	N	N	N
Analyte	CAS		Units			
PFBA	375-22-4	--	ng/L	7.1	5.1	< 4.7 U
PFPeA	2706-90-3	--	ng/L	2.6	4.7	< 1.9 U
PFHxA	307-24-4	--	ng/L	1.9	3.2	< 1.9 U
PFHpA	375-85-9	--	ng/L	0.82 J	1.6	< 1.9 U
PFOA	335-67-1	4	ng/L	1.5 J	< 1.6 U	< 1.9 U
PFNA	375-95-1	10	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFDA	335-76-2	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	NA	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.9 U	NA	< 1.9 U
PFBS	375-73-5	2,000	ng/L	1.8 J	7.9	< 1.9 U
PFPeS	2706-91-4	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFHxS	355-46-4	10	ng/L	0.67 J	0.73 J	< 1.9 U
PFHpS	375-92-8	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFOS	1763-23-1	4	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	< 1.9 U	< 3.2 U	< 1.9 U
6:2 FTS	27619-97-2	--	ng/L	< 4.8 U	< 3.2 U	< 4.7 U
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 3.2 U	< 1.9 U
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	NA	< 1.9 U
FOSA	754-91-6	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.8 U	< 1.6 U	< 4.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.8 U	< 1.6 U	< 4.7 U
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 8.1 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 8.1 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	< 1.6 U	NA
PFMBA	863090-89-5	--	ng/L	NA	< 1.6 U	NA
NFDHA	151772-58-6	--	ng/L	NA	< 1.6 U	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 1.2 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	< 1.6 U	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.6 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	< 3.2 U	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	< 8.1 U	NA
7:3 FTCA	812-70-4	--	ng/L	NA	< 8.1 U	NA

Table 3-6E
Groundwater Sampling Results, GETS LTM,
September 2024 – February 2025
2025 nterim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-3	PZ-15S	PZ-15D	PZ-16S	PZ-16D	PZ-22S	PZ-23	PZ-24-17
			Sample ID	PZ-3 (101624)	PZ-15S (102124)	PZ-15D (102124)	PZ-16S (102124)	PZ-16D (102124)	PZ-22S (101624)	PZ-23 (101724)	PZ-24-17 (101824)
			Parent Sample ID								
			Sample Date	10/16/2024	10/21/2024	10/21/2024	10/21/2024	10/21/2024	10/16/2024	10/17/2024	10/18/2024
			Sample Type	N	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	730 D	97	500 D	39	5900 D	58	560 D	12
PFPeA	2706-90-3	--	ng/L	2300 D	270	2100 D	63	33000 D	67	1800 D	6.4
PFHxA	307-24-4	--	ng/L	2900 D	200	1700 D	47	18000 D	35	3600 D	6.1
PFHpA	375-85-9	--	ng/L	1300 D	49	540 D	22	5900 D	27	3600 D	2.0
PFOA	335-67-1	4	ng/L	22000 D	23	3000 D	69	32000 D	34	26000 D	5.8
PFNA	375-95-1	10	ng/L	1200 D	< 1.9 U	220	0.93 J	2000 D	< 1.8 U	130	0.56 J
PFDA	335-76-2	--	ng/L	73	< 1.9 U	31	< 1.9 U	220	< 1.8 U	< 1.8 U	< 1.8 U
PFUnA	2058-94-8	--	ng/L	19	< 1.9 U	5.2	< 1.9 U	14	< 1.8 U	< 1.8 U	< 1.8 U
PFDoA	307-55-1	--	ng/L	1.7 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	3.4 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	0.67 J
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 UJ	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 UB
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	76	4.9	2.4	2.2	12	1.5 J	36	1.4 J
PFPeS	2706-91-4	--	ng/L	71	0.75 J	2.4	0.75 J	22	< 1.8 U	16	< 1.8 U
PFHxS	355-46-4	10	ng/L	900 D	3.1	53	5.6	330	3.3	210	1.1 J
PFHpS	375-92-8	--	ng/L	32	< 1.9 U	4.6	3.4	34	< 1.8 U	< 1.8 U	< 1.8 U
PFOS	1763-23-1	4	ng/L	930 D	2.2	470 D	20 J	4300 D	< 1.8 U	< 1.8 U	1.4 J
PFNS	68259-12-1	--	ng/L	2.3 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	180 J-	< 1.9 U	150	< 1.9 U	1700 D	< 1.8 U	130 J-	< 1.8 U
6:2 FTS	27619-97-2	--	ng/L	7400 D	< 4.6 U	22000 D	< 4.7 U	410000 D	< 4.6 U	750 D	< 4.5 U
8:2 FTS	39108-34-4	--	ng/L	2000 D	< 1.9 U	1000 D	< 1.9 U	6100 DJ-	< 1.8 U	< 1.8 U	< 1.8 U
10:2 FTS	120226-60-0	--	ng/L	150	< 1.9 U	< 1.9 U	< 1.9 U	2.0	< 1.8 U	< 1.8 U	< 1.8 U
FOSA	754-91-6	--	ng/L	480 D	< 1.9 U	16	< 1.9 U	87	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSA	31506-32-8	--	ng/L	1.5 J	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	2.0 J	< 4.6 U	< 4.6 U	< 4.7 U	< 4.6 U	< 4.6 U	< 4.5 U	< 4.5 U
NEtFOSAA	2991-50-6	--	ng/L	120	< 4.6 U	5.6	< 4.7 U	22	< 4.6 U	< 4.5 U	< 4.5 U
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 3.6 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.6 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6E
Groundwater Sampling Results, GETS LTM,
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Tyco Fire Technology Center
Marinette, Wisconsin

		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-24-17	PZ-24-47	PZ-25-17	PZ-29-17	PZ-29-43	PZ-29-68	PZ-30-12	PZ-30-45
			Sample ID	DUP-01-GETS (101824)	PZ-24-47 (101824)	PZ-25-17 (101724)	PZ-29-17 (101724)	PZ-29-43 (101724)	PZ-29-68 (101724)	PZ-30-12 (101624)	PZ-30-45 (101624)
			Parent Sample ID	PZ-24-17 (101824)							
			Sample Date	10/18/2024	10/18/2024	10/17/2024	10/17/2024	10/17/2024	10/17/2024	10/16/2024	10/16/2024
			Sample Type	FD	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	12	100	26	16	77	110	14	48
PFPeA	2706-90-3	--	ng/L	6.8	320	71	33	240	250	9.0	96
PFHxA	307-24-4	--	ng/L	6.3	320	42	23	390	290	5.6	150
PFHpA	375-85-9	--	ng/L	1.9	200	21	19	510	250	2.2	23
PFOA	335-67-1	4	ng/L	6.2	3100 D	11	11	5500 D	1700 D	31	210
PFNA	375-95-1	10	ng/L	0.48 J	76	1.8	< 1.9 U	26	35	< 1.9 U	< 1.9 U
PFDA	335-76-2	--	ng/L	< 1.8 U	7.5	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFUnA	2058-94-8	--	ng/L	< 1.8 U	2.0	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	1.5 J	7.9	2.1	1.3 J	5.7	4.2	0.66 J	1.2 J
PFPeS	2706-91-4	--	ng/L	< 1.8 U	8.3	< 1.8 U	< 1.9 U	2.9 J	2.0	< 1.9 U	< 1.9 U
PFHxS	355-46-4	10	ng/L	1.2 J	110	1.2 J	< 1.9 U	22	14	< 1.9 U	< 1.9 U
PFHpS	375-92-8	--	ng/L	< 1.8 U	4.4	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFOS	1763-23-1	4	ng/L	1.4 J	240	9.9	< 1.9 U	< 4.0 U	2.4	< 1.9 U	< 1.9 U
PFNS	68259-12-1	--	ng/L	< 1.8 U	0.38 J	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	< 1.8 U	50	< 1.8 U	< 1.9 U	24	28	< 1.9 U	1.4 J
6:2 FTS	27619-97-2	--	ng/L	< 4.6 U	1900 D	< 4.6 U	3.3 J	150	280	< 4.7 U	4.5 J
8:2 FTS	39108-34-4	--	ng/L	< 1.8 U	330	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
10:2 FTS	120226-60-0	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
FOSA	754-91-6	--	ng/L	< 1.8 U	10	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
NMeFOSA	31506-32-8	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.6 U	< 4.7 U	< 4.6 U	< 4.7 U	< 10 U	< 4.6 U	< 4.7 U	< 4.7 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.6 U	6.5	< 4.6 U	< 4.7 U	< 10 U	< 4.6 U	< 4.7 U	< 4.7 U
NMeFOSE	24448-09-7	--	ng/L	< 3.6 U	< 3.7 U	< 3.7 U	< 3.8 U	< 8.0 U	< 3.7 U	< 3.7 U	< 3.7 U
NEtFOSE	1691-99-2	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.6 U	< 3.7 U	< 3.7 U	< 3.8 U	< 8.0 U	< 3.7 U	< 3.7 U	< 3.7 U
DONA	919005-14-4	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.8 U	< 1.9 U	< 1.8 U	< 1.9 U	< 4.0 U	< 1.8 U	< 1.9 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6E
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		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-30-45	PZ-30-59	PZ-31-17	PZ-31-40	PZ-31-53	PZ-32-18	PZ-32-72	PZ-47-40
			Sample ID	DUP-02-GETS (101624)	PZ-30-59 (101624)	PZ-31-17 (101724)	PZ-31-40 (101724)	PZ-31-53 (101724)	PZ-32-18 (101624)	PZ-32-72 (101624)	PZ-47-40 (102124)
			Parent Sample ID	PZ-30-45 (101624)							
			Sample Date	10/16/2024	10/16/2024	10/17/2024	10/17/2024	10/17/2024	10/16/2024	10/16/2024	10/21/2024
			Sample Type	FD	N	N	N	N	N	N	N
Analyte	CAS		Units								
PFBA	375-22-4	--	ng/L	49	< 4.7 U	16	460 DJ	< 4.6 U	8.4	< 4.7 U	2700 D
PFPeA	2706-90-3	--	ng/L	98	< 1.9 U	16	1400 D	0.46 J	8.4	< 1.9 U	12000 D
PFHxA	307-24-4	--	ng/L	160	< 1.9 U	15	2300 D	< 1.8 U	6.8	< 1.9 U	11000 D
PFHpA	375-85-9	--	ng/L	24	< 1.9 U	9.3	1400 D	< 1.8 U	8.0	< 1.9 U	2700 D
PFOA	335-67-1	4	ng/L	220	< 1.9 U	9.4	42000	6.4	6.6	< 1.9 U	9300 D
PFNA	375-95-1	10	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	960 D	< 1.8 U	1.0 J	< 1.9 U	730 D
PFDA	335-76-2	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	23	< 1.8 U	< 1.9 U	< 1.9 U	42
PFUnA	2058-94-8	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	1.5 J
PFDoA	307-55-1	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.9 U	1.2 J	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.9 U	1.1 J	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFBS	375-73-5	2,000	ng/L	1.2 J	< 1.9 U	17	35	< 1.8 U	3.2	< 1.9 U	4.9
PFPeS	2706-91-4	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	43	< 1.8 U	< 1.9 U	< 1.9 U	7.2
PFHxS	355-46-4	10	ng/L	< 1.9 U	< 1.9 U	4.4	360 D	< 1.8 U	< 1.9 U	< 1.9 U	180
PFHpS	375-92-8	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	15	< 1.8 U	< 1.9 U	< 1.9 U	9.3
PFOS	1763-23-1	4	ng/L	< 1.9 U	< 1.9 U	5.9	750 D	< 1.8 U	3.5	< 1.9 U	600 D
PFNS	68259-12-1	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
4:2 FTS	757124-72-4	--	ng/L	1.6 J	< 1.9 U	< 1.9 U	260 J-	< 1.8 U	< 1.9 U	< 1.9 U	270
6:2 FTS	27619-97-2	--	ng/L	4.8	< 4.7 U	< 4.7 U	4400 D	< 4.6 U	< 4.7 U	< 4.7 U	160000 D
8:2 FTS	39108-34-4	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	590 D	< 1.8 U	< 1.9 U	< 1.9 U	1800 D
10:2 FTS	120226-60-0	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
FOSA	754-91-6	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	8.7	< 1.8 U	8.2	< 1.9 U	33
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.8 U	< 4.6 U	< 4.7 U	< 4.7 U	< 4.6 U
NEtFOSAA	2991-50-6	--	ng/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.8 U	< 4.6 U	< 4.7 U	< 4.7 U	12
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 3.8 U	< 3.6 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.7 U	< 3.8 U	< 3.8 U	< 3.6 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.8 U	< 1.9 U	< 1.9 U	< 1.8 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-6E
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		Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	PZ-54-47R	PZ-56-42	PZ-57-38	PZ-58-50	PZ-58-50
			Sample ID	PZ-54-47R (101824)	PZ-56-42 (101824)	PZ-57-38 (101724)	PZ-58-50 (101624)	DUP-03-GETS (101624)
			Parent Sample ID					PZ-58-50 (101624)
			Sample Date	10/18/2024	10/18/2024	10/17/2024	10/16/2024	10/16/2024
			Sample Type	N	N	N	N	FD
Analyte	CAS		Units					
PFBA	375-22-4	--	ng/L	660 D	830 D	11	270	260
PFPeA	2706-90-3	--	ng/L	2200 D	2600 D	37	770 D	730 D
PFHxA	307-24-4	--	ng/L	3000 D	3100 D	18	1200 D	1100 D
PFHpA	375-85-9	--	ng/L	1600 D	1500 D	17	470 D	460 D
PFOA	335-67-1	4	ng/L	34000 D	26000 D	8.2	18000 D	17000 D
PFNA	375-95-1	10	ng/L	2500 D	1900 D	0.47 J	210	210
PFDA	335-76-2	--	ng/L	100	120	< 1.8 U	6.5	6.8
PFUnA	2058-94-8	--	ng/L	16	48	< 1.8 U	< 1.9 U	< 1.9 U
PFDoA	307-55-1	--	ng/L	< 1.9 U	1.7 J	< 1.8 U	< 1.9 U	< 1.9 U
PFTriA	72629-94-8	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFTeA	376-06-7	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFHxDA	67905-19-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFODA	16517-11-6	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFBS	375-73-5	2,000	ng/L	96	75	0.24 J	12	14
PFPeS	2706-91-4	--	ng/L	120	70	< 1.8 U	16	16
PFHxS	355-46-4	10	ng/L	1000 D	1200 D	0.72 J	150	150
PFHpS	375-92-8	--	ng/L	74	47	< 1.8 U	5.6	5.7
PFOS	1763-23-1	4	ng/L	7200 D	2300 D	< 1.8 U	250	260
PFNS	68259-12-1	--	ng/L	< 1.9 U	2.6 J	< 1.8 U	< 1.9 U	< 1.9 U
PFDS	335-77-3	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFDoS	79780-39-5	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
4:2 FTS	757124-72-4	--	ng/L	400 D	270 J-	< 1.8 U	130	130
6:2 FTS	27619-97-2	--	ng/L	21000 D	24000 D	3.2 J	2400 D	1700 D
8:2 FTS	39108-34-4	--	ng/L	2000 D	3500 D	0.48 J	45	44
10:2 FTS	120226-60-0	--	ng/L	1.5 J	230	< 1.8 U	< 1.9 U	< 1.9 U
FOSA	754-91-6	--	ng/L	790 D	1500 D	< 1.8 U	2.3	2.7
NMeFOSA	31506-32-8	--	ng/L	< 1.9 U	1.5 J	< 1.8 U	< 1.9 U	< 1.9 U
NEtFOSA	4151-50-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
NMeFOSAA	2355-31-9	--	ng/L	< 4.7 U	< 4.6 U	< 4.6 U	< 4.7 U	< 4.8 U
NEtFOSAA	2991-50-6	--	ng/L	130	160 J-	< 4.6 U	< 4.7 U	< 4.8 U
NMeFOSE	24448-09-7	--	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.9 U
NEtFOSE	1691-99-2	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFMPA	377-73-1	--	ng/L	NA	NA	NA	NA	NA
PFMBA	863090-89-5	--	ng/L	NA	NA	NA	NA	NA
NFDHA	151772-58-6	--	ng/L	NA	NA	NA	NA	NA
HFPO-DA	13252-13-6	10	ng/L	< 3.8 U	< 3.7 U	< 3.7 U	< 3.8 U	< 3.9 U
DONA	919005-14-4	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
PFEESA	113507-82-7	--	ng/L	NA	NA	NA	NA	NA
9Cl-PF3ONS	756426-58-1	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	ng/L	< 1.9 U	< 1.8 U	< 1.8 U	< 1.9 U	< 1.9 U
3:3 FTCA	356-02-5	--	ng/L	NA	NA	NA	NA	NA
5:3 FTCA	914637-49-3	--	ng/L	NA	NA	NA	NA	NA
7:3 FTCA	812-70-4	--	ng/L	NA	NA	NA	NA	NA

Table 3-6F
Groundwater Sampling Results,
Stanton Street SI, February 2025
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

	Wisconsin DHS Recommended Standards February 2025 (in Rulemaking/Not Yet Adopted)[1]	Location	MW130S	MW131S		MW131M
		Sample ID	MW130S (020525)	MW131S (020525)	DUP-01 (020525)	MW131M (020625)
		Parent Sample ID			MW131S (020525)	
		Sample Date	02/05/2025	02/05/2025	02/05/2025	02/06/2025
		Sample Type	N	N	FD	N
Analyte		Units				
PFBA	--	ng/L	8.8	62	64	1.5 J
PFPeA	--	ng/L	35	190	210	< 1.6 U
PFHxA	--	ng/L	18 J-	120	120	0.70 J-
PFHpA	--	ng/L	9.1	110	120	0.42 J
PFOA	4	ng/L	4.4	40	32	< 1.6 U
PFNA	10	ng/L	< 1.6 U	4	4.3	< 1.6 U
PFDA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFUnA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFDoA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFTriA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFTeA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFHxDA	--	ng/L	NA	NA	NA	NA
PFODA	--	ng/L	NA	NA	NA	NA
PFBS	2,000	ng/L	1.6	6	5.7	< 1.6 U
PFPeS	--	ng/L	0.19 J	0.25 J	0.28 J	< 1.6 U
PFHxS	10	ng/L	0.80 J	1.3 J	1.4 J	< 1.6 U
PFHpS	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFOS	4	ng/L	0.78 J	1.0 J	1.1 J	< 1.6 U
PFNS	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFDS	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFDoS	--	ng/L	< 1.6 UJ	< 1.6 U	< 1.5 U	< 1.6 U
4:2 FTS	--	ng/L	< 3.1 U	1.0 J	0.93 J	< 3.2 U
6:2 FTS	--	ng/L	19	44	48	1.5 J
8:2 FTS	--	ng/L	< 3.1 U	< 3.1 U	< 3.0 U	< 3.2 U
10:2 FTS	--	ng/L	NA	NA	NA	NA
FOSA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NMeFOSA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NEtFOSA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NMeFOSAA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NEtFOSAA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NMeFOSE	--	ng/L	< 7.8 U	< 7.8 U	< 7.5 U	< 7.9 U
NEtFOSE	--	ng/L	< 7.8 U	< 7.8 U	< 7.5 U	< 7.9 U
PFMPA	--	ng/L	< 1.6 U	0.17 J	0.20 J	< 1.6 U
PFMBA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
NFDHA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
HFPO-DA	10	ng/L	< 1.2 U	< 1.2 U	< 1.1 U	< 1.2 U
DONA	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
PFEESA	--	ng/L	< 1.6 UJ	< 1.6 U	< 1.5 U	< 1.6 U
9Cl-PF3ONS	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
11Cl-PF3OUdS	--	ng/L	< 1.6 U	< 1.6 U	< 1.5 U	< 1.6 U
3:3 FTCA	--	ng/L	< 3.1 U	< 3.1 U	< 3.0 U	< 3.2 U
5:3 FTCA	--	ng/L	< 7.8 UJ	< 7.8 U	< 7.5 U	< 7.9 U
7:3 FTCA	--	ng/L	< 7.8 UJ	< 7.8 U	< 7.5 U	< 7.9 U

Table 3-6
Groundwater Sampling Results
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Notes:
< = Compound not detected at reporting detection limit.
(1) = In February 2025, WDHS recommended individual groundwater standards of 4 ng/L for PFOA and PFOS, 10 ng/L for PFHxS, PFNA, and HFPO-DA, and 2,000 ng/L for PFBS. Following the February 2025 WDHS recommendation, the WDNR Secretary and the Governor signed the WDNR scope statement and WDNR is in the early stages of rule development for these groundwater standards.
-- = No standard
N = Normal sample
ng/L = nanograms per liter
FD = Field duplicate sample

B = Compound was found in the blank and sample
D = The analyte was analyzed at dilution.
DJ = The analyte was analyzed at dilution and the result is an estimated quantity.
J+ = The result is an estimated quantity. The associated numerical value is expected to have a positive or high bias.
J- = The result is an estimated quantity. The associated numerical value is expected to have a negative or low bias.
R = The result is unusable. The sample result is rejected due to serious deficiencies in meeting quality control criteria.
U = The analyte was analyzed for but the result was not detected above the method detection limit.
UJ = The analyte was analyzed for but was not detected. The reported reporting limit (RL) is approximate and may be inaccurate or imprecise.

Chemical Abbreviation:

PFBA = Perfluorobutanoic acid
PFPeA = Perfluoropentanoic acid
PFHxA = Perfluorohexanoic acid
PFHpA = Perfluoroheptanoic acid
PFOA = Perfluorooctanoic acid
PFNA = Perfluorononanoic acid
PFDA = Perfluorodecanoic acid
PFUnA = Perfluoroundecanoic acid
PFDoA = Perfluorododecanoic acid
PFTriA = Perfluorotridecanoic acid
PFTeA = Perfluorotetradecanoic acid
PFBS = Perfluorobutanesulfonic acid
PFPeS = Perfluoropentanesulfonic acid
PFHxS = Perfluorohexanesulfonic acid
PFHpS = Perfluoroheptanesulfonic acid
PFOS = Perfluorooctanesulfonic acid
PFNS = Perfluorononanesulfonic acid
PFDS = Perfluorodecanesulfonic acid
PFDoS = Perfluorododecanesulfonic acid
4:2 FTS = 4:2 Fluorotelomer sulfonic acid
6:2 FTS = 6:2 Fluorotelomer sulfonic acid
8:2 FTS = 8:2 Fluorotelomer sulfonic acid
FOSA = Perfluorooctane sulfonamide
NMeFOSA = N-Methyl perfluorooctane sulfonamide
NEtFOSA = N-Ethyl perfluorooctane sulfonamide
NMeFOSAA = N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA = N-Ethyl perfluorooctane sulfonamidoacetic acid
NMeFOSE = N-Methyl perfluorooctane sulfonamidoethanol
NEtFOSE = N-Ethyl perfluorooctane sulfonamidoethanol
PFMPA = Perfluoro-3-methoxypropanoic acid
PFMBA = Perfluoro-4-methoxybutanoic acid
NFDHA = Nonafluoro-3,6-dioxaheptanoic acid
HFPO-DA = Hexafluoropropylene oxide dimer acid
DONA = 4,8-Dioxa-3H-perfluorononanoic acid
PFEESA = Perfluoro(2-ethoxyethane)sulfonic acid
9Cl-PF3ONS = 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic
11Cl-PF3OUdS = 11-chloroeicosafluoro-3-oxaundecane-1-
3:3 FTCA = 3-Perfluoropropyl propanoic acid
5:3 FTCA = 2H,2H,3H,3H-Perfluorooctanoic acid
7:3 FTCA = 3-Perfluoroheptyl propanoic acid

Table 3-7
Surface Water Sampling Results, October 2024
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

		WDNR Surface Water Standards (Non-Drinking Water Source)[1,2]	WDNR Surface Water Standards (Drinking Water Source)[1,2]	Location	SW-10		SW-30	SW-33	SW-36	SW-26A (Downstream of Ditch A Treatment System)	SW-L03 (Downstream of Ditch B Treatment System)		
				Sample ID	SW-10 (102224)	DUP-11-LTM (102224)	SW-30 (102224)	SW-33 (102224)	SW-36 (102224)	SW-26A(12-2-24)	SW-L03 (10-1-24)	SW-L03 (11-18-24)	SW-L03 (12-26-24)
				Parent Sample ID		SW-10 (102224)							
				Ditch	A	A	C	D	AD	A	B	B	B
				Sample Date	10/22/2024	10/22/2024	10/22/2024	10/22/2024	10/22/2024	12/02/2024	10/01/2024	11/18/2024	12/26/2024
				Sample Type	N	FD	N	N	N	N	N	N	N
Analyte	CAS			Units									
PFBA	375-22-4	--	--	ng/L	8.4	8.4	31	8.3	13	200	38	27	33
PFPeA	2706-90-3	--	--	ng/L	17	18	53	6.3	9.2	800 D	30	49	42
PFHxA	307-24-4	--	--	ng/L	9.0	9.0	40	5.1	6.7	360	11	27	20
PFHpA	375-85-9	--	--	ng/L	4.6	4.1	33	3.3	4.9	480 D	2.3	12	6.1
PFOA	335-67-1	95	20	ng/L	13	13	15	8.1	22	**560 D**	14	91	68
PFNA	375-95-1	--	--	ng/L	1.4 J	1.2 J	0.98 J	1.4 J	4.2	130	0.57 J	4.5	1.6 J
PFDA	335-76-2	--	--	ng/L	0.67 J	0.61 J	< 1.7 U	0.33 J	< 4.0 U	37	< 1.7 U	< 1.7 U	< 1.9 U
PFUnA	2058-94-8	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	13	< 1.7 U	< 1.7 U	< 1.9 U
PFDoA	307-55-1	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	2.1	< 1.7 U	< 1.7 U	< 1.9 U
PFTriA	72629-94-8	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFTeA	376-06-7	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFHxDA	67905-19-5	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFODA	16517-11-6	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFBS	375-73-5	--	--	ng/L	4.8	4.8	4.9	1.9	3.5 J	7.1	0.17 J	1.2 J	< 1.9 U
PFPeS	2706-91-4	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	7.2	< 1.7 U	0.30 J	< 1.9 U
PFHxS	355-46-4	--	--	ng/L	1.5 J	1.4 J	1.1 J	1.6 J	3.2 J	130	0.48 J	3.1	1.3 J
PFHpS	375-92-8	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	1.9 J	< 1.7 U	< 1.7 U	< 1.9 U
PFOS	1763-23-1	8	8	ng/L	4.6	4.5	2.4	2.9	3.5 J	**120**	2.5	**12**	6.6
PFNS	68259-12-1	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFDS	335-77-3	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
PFDoS	79780-39-5	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
4:2 FTS	757124-72-4	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	0.27 J	< 1.7 U	1.3 J	0.48 J
6:2 FTS	27619-97-2	--	--	ng/L	3.1 J	3.2 J	< 4.3 U	< 4.3 U	< 10 U	66	9.1	150	55
8:2 FTS	39108-34-4	--	--	ng/L	0.62 J	0.49 J	< 1.7 U	< 1.7 U	< 4.0 U	9.9	1.2 J	8.5	3.5
10:2 FTS	120226-60-0	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	1.8 J	< 1.7 U	< 1.7 U	< 1.9 U
FOSA	754-91-6	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	2.0 J	< 1.7 U	< 1.7 U	< 1.9 U
NMeFOSA	31506-32-8	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
NEtFOSA	4151-50-2	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
NMeFOSAA	2355-31-9	--	--	ng/L	< 4.2 U	< 4.3 U	< 4.3 U	< 4.3 U	< 10 U	< 5.2 U	< 4.2 U	< 4.3 U	< 4.7 U
NEtFOSAA	2991-50-6	--	--	ng/L	< 4.2 U	< 4.3 U	< 4.3 U	< 4.3 U	< 10 U	< 5.2 U	< 4.2 U	< 4.3 U	< 4.7 U
NMeFOSE	24448-09-7	--	--	ng/L	< 3.3 U	< 3.5 U	< 3.4 U	< 3.5 U	< 8.0 U	< 4.2 U	< 3.4 U	< 3.4 U	< 3.8 U
NEtFOSE	1691-99-2	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
HFPO-DA	13252-13-6	--	--	ng/L	< 3.3 U	< 3.5 U	< 3.4 U	< 3.5 U	< 8.0 U	< 4.2 U	< 3.4 U	< 3.4 U	< 3.8 U
DONA	919005-14-4	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
9Cl-PF3ONS	756426-58-1	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U
11Cl-PF3OUdS	763051-92-9	--	--	ng/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 4.0 U	< 2.1 U	< 1.7 U	< 1.7 U	< 1.9 U

Table 3-7
Surface Water Sampling Results
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center

Notes:
< = Compound not detected at reporting detection limit.
(1) = The surface water quality standard for PFOA is 20 ng/L for waters classified as public water supplies and 95 ng/L for all other surface waters (WDNR NR 102.4).
(2) = The surface water quality standard for PFOS is 8 ng/L for all waters except those that cannot naturally support fish and do not have downstream waters that support fish (WDNR NR 102.4).
BOLD = The result is greater than the applicable surface water quality standard.
-- = No standard
mg/L = milligrams per liter
N = Normal sample
ng/L = nanograms per liter
FD = Field duplicate sample
TSS = total suspended solids

D = The analyte was analyzed at dilution.
J = The analyte was positively identified; however the associated numerical value is an estimated concentration only.
U = The analyte was analyzed for but the result was not detected above the method detection limit.

Chemical Abbreviation:

PFBA = Perfluorobutanoic acid (C4)
PFPeA = Perfluoropentanoic acid (C5)
PFHxA = Perfluorohexanoic acid (C6)
PFHpA = Perfluoroheptanoic acid (C7)
PFOA = Perfluorooctanoic acid (C8)
PFNA = Perfluorononanoic acid (C9)
PFDA = Perfluorodecanoic acid (C10)
PFUnA = Perfluoroundecanoic acid (C11)
PFTriA = Perfluorotridecanoic acid (C13)
PFTeA = Perfluorotetradecanoic acid (C14)
PFHxDA = Perfluoro-n-hexadecanoic acid (C16)
PFODA = Perfluoro-n-octadecanoic acid (C18)
PFBS = Perfluorobutanesulfonic acid (C4)
PFPeS = Perfluoropentanesulfonic acid (C5)
PFHxS = Perfluorohexanesulfonic acid (C6)
PFHpS = Perfluoroheptanesulfonic acid (C7)
PFOS = Perfluorooctanesulfonic acid (C8)
PFNS = Perfluorononanesulfonic acid (C9)
PFDS = Perfluorodecanesulfonic acid (C10)
PFDoS = Perfluorododecanesulfonic acid (C12)
4:2 FTS = 4:2 fluorotelomer sulfonate (C6)
6:2 FTS = 6:2 fluorotelomer sulfonate (C8)
8:2 FTS = 8:2 fluorotelomer sulfonate (C10)
10:2 FTS = 10:2 fluorotelomer sulfonate (C12)
FOSA = Perfluorooctanesulfonamide (C8)
NMeFOSA = N-methylperfluorooctanesulfonamide (C9)
NEtFOSA = N-ethylperfluorooctanesulfonamide (C10)
NEtFOSAA = N-ethylperfluorooctanesulfonamidoacetic acid (C12)
NMeFOSE = N-methylperfluorooctanesulfonamidoethanol (C11)
NEtFOSE = N-ethylperfluorooctanesulfonamidoethanol (C12)
HFPO-DA = Hexafluoropropylene oxide dimer acid (C6)
DONA = 4,8-Dioxa-3H-perfluorononanoic acid (C7)
9Cl-PF3ONS = 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (C8)
11Cl-PF3OUdS = 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (C10)

Table 5-1
Planned Year 2 Interim LTM Groundwater Monitoring
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 2[1] (Proposed): **Annual Sampling** - Boundary Zone, Northern and Southern Plume Groups; **Semi-Annual Sampling** - FTC; **Quarterly Sampling** - Select Monitoring Wells			
					Q2 2025	Q3 2025	Q4 2025	Q1 2026
FTC (non-GETS) Well Group								
HMW-2-3S	FTC	S	6	16	X		X	
HMW-2-3D	FTC	D	32	42	X		X	
FTC-2S	FTC	S	5	15	X		X	
FTC-2D	FTC	D	27	32	X		X	
FTC-31	FTC	S	3	13	X		X	
FTC-34S	FTC	S	3	13	X		X	
FTC-34D	FTC	D	28	33	X		X	
FTC-44	FTC	S	5	15	X		X	
PZ-1D	FTC	BR	63.5	68.5	X		X	
PZ-4S	FTC	D	36	41	X		X	
PZ-4D	FTC	BR	68.5	73.5	X		X	
PZ-11	FTC	D	41	46	X		X	
PZ-14S	FTC	S	4	19	X		X	
PZ-14D	FTC	D	25	35	X		X	
PZ-67-16	FTC	S	6	16	X		X	
PZ-9	FTC	D	38	43	X		X	
PZ-19	FTC	D	27	37	X		X	
PZ-59-21	Offsite	S	11	21	X		X	
PZ-65-16	FTC	S	6	16	X		X	
PZ-65-33	FTC	D	28	33	X		X	
PZ-67-40	FTC	D	35	40	X		X	
PZ-68-16	FTC	S	6	16	X		X	
PZ-68-26	FTC	D	21	26	X		X	
PZ-68-66	FTC	BR	61	66	B		B	
PZ-69-24	FTC	S	14	24	X		X	
PZ-69-43	FTC	D	38	43	X		X	
PZ-86-17	FTC	S	7	17	X		X	
PZ-86-38	FTC	D	33	38	X		X	
Northern Plume Well Group								
MW003D	Stanton	BR	45	50			X	
MW013S-R	Offsite	S	9	19			X	
MW013M-R	Offsite	D	30	35			B	
MW013D-R	Offsite	BR	41	46			X	
MW125S-20	Offsite	S	10	20			X	
MW125M-35	Offsite	D	30	35			X	
MW125D-60	Offsite	BR	50	60			X	
MW128S-17	Offsite	S	7	17			X	
MW128M-30	Offsite	D	25	30			X	
MW129S-21	Offsite	S	11	21			X	
MW129M-45	Offsite	D	40	45			B	
MW042D	Stanton	BR	50	55			X	
MW046D	Stanton	BR	53.5	58.51			X	
MW064D	Stanton	BR	51.7	56.69			X	
PZ-28-14	Offsite	S	9	14			X	
PZ-28-54	Offsite	D	49	54			X	
PZ-28-75	Offsite	BR	65	75	X	X	X	X
PZ-63-44	Offsite	S	39	44			X	
PZ-63-60	Offsite	BR	55	60			X	
PZ-79-16	Offsite	S	6	16			X	
PZ-79-25	Offsite	D	20	25			X	
PZ-79-32	Offsite	D	27	32			X	
PZ-90-20	Offsite	S	5	20			X	

Table 5-1
Planned Year 2 Interim LTM Groundwater Monitoring
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 2[1] (Proposed): **Annual Sampling** - Boundary Zone, Northern and Southern Plume Groups; **Semi-Annual Sampling** - FTC; **Quarterly Sampling** - Select Monitoring Wells			
Southern Plume Well Group								
MW-101-16	Offsite	S	6	16			X	
MW-101-72	Offsite	D	62	72			X	
PZ-33-12	Offsite	S	7	12			X	
PZ-33-33	Offsite	D	28	33			X	
PZ-33-67	Offsite	D	57	67			X	
PZ-33-105	Offsite	BR	100	105			X	
PZ-34-17	Offsite	S	7	17			X	
PZ-34-84	Offsite	D	74	84			X	
PZ-35-17	Offsite	S	7	17			X	
PZ-35-37	Offsite	D	32	37			B	
PZ-46-19	Offsite	S	9	19			X	
PZ-46-40	Offsite	D	30	40			X	
PZ-46-65	Offsite	D	60	65			X	
PZ-70-17	FTC	S	7	17			X	
PZ-70-33	FTC	D	28	33			X	
PZ-70-55	FTC	D	50	55			B	
PZ-70-83	FTC	BR	73	83			B	
PZ-71-111	Offsite	BR	101	111			X	
PZ-72-73	Offsite	D	68	73			X	
PZ-74-32	Offsite	D	22	32	X	X	X	X
PZ-74-80	Offsite	D	75	80	X	X	X	X
PZ-76-34	Offsite	D	29	34			X	
TW-03	Offsite	S	10	20			X	
Boundary Zone Well Group								
MW-100-32	Offsite	D	22	32	X	X	X	X
MW-100-68	Offsite	D	58	68			X	
MW-100-88	Offsite	BR	83	88			X	
MW126S-20	Offsite	S	10	20			X	
MW126D-40	Offsite	BR	30	40			X	
PZ-26-11	Offsite	S	6	11			X	
PZ-26-36	Offsite	BR	31	36	X	X	X	X
PZ-44-73	Offsite	D	63	73			X	
PZ-60-20	Offsite	S	10	20			X	
PZ-61-11	Offsite	S	6	11	X	X	X	X
PZ-62-62	Offsite	D	57	62			X	
PZ-66-20	FTC	S	10	20			X	
PZ-66-57	FTC	D	52	57			X	
PZ-73-16	Offsite	S	6	16			X	
PZ-73-32	Offsite	D	27	32	X	X	X	X
PZ-73-75	Offsite	D	70	75			X	
PZ-75-18	Offsite	S	8	18			X	
PZ-77-16	Offsite	S	5.7	15.7			X	
PZ-78-17	Offsite	S	7	17			X	
PZ-78-74	Offsite	BR	71.5	73.5			X	
PZ-80-37	Offsite	D	32	37			X	
PZ-81-25	Offsite	S	20	25			X	
PZ-81-92	Offsite	BR	82	92			X	
PZ-82-16	Offsite	S	6	16			X	
PZ-83-50	Offsite	D	45	50			X	
PZ-85-69	Offsite	BR	64	69			X	
PZ-87-16	FTC	S	6	16			X	
PZ-87-47	FTC	D	42	47			X	
PZ-89-40	Offsite	D	35	40			X	
TW-01[2]	Offsite	S	9.5	19.5			X	
TW-02	Offsite	S	10	20			X	
TW-04	Offsite	S	10	20	X	X	X	X
TW-05	Offsite	S	10	20			X	
Proposed PZ-88 S/D wells[3]	Offsite	S/D	TBD	TBD			X	

Table 5-1
Planned Year 2 Interim LTM Groundwater Monitoring
2025 Interim LTM Groundwater and Surface Water Report #2
Tyco Fire Technology Center
Marinette, Wisconsin

Well ID	Area	Zone	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Year 2[1] (Proposed): **Annual Sampling** - Boundary Zone, Northern and Southern Plume Groups; **Semi-Annual Sampling** - FTC; **Quarterly Sampling** - Select Monitoring Wells

Notes:

Prior to 2025, all wells were sampled for PFAS via Modified 537 method. In 2025, samples were analyzed via Method 1633A and will continue to be analyzed using this method.

All wells will be gauged during sampling; at minimum, comprehensive rounds of gauging across all well groups will be completed semi-annually in year 2.

Vertical Datum: North American Vertical Datum (NAVD) 1988

(1) FTC - sampling at redundant wells will be reduced from semi-annual to annual; N. Plume and S. Plume - annual sampling will be reduced to biennial sampling at wells with 2 rounds of "clean" or identified as redundant; Boundary Zone - Wells will be sampled annually or reduced to biennially if identified as redundant.

(2) TW-01 will be included in future long term monitoring (i.e., Q4 2025).

(3) Two monitoring wells will be installed near the intersection of Cleveland Avenue and Industrial Parkway South based on VAP-PZ-88 results. At the request of the City, monitoring wells will be installed following the completion street improvements scheduled to be completed later this year.

Acronyms/Abbreviations:

B = Well will be sampled during the biennial event (Q4 2026 anticipated); therefore, it will not be sampled during the applicable sampling period

bgs = below ground surface

ft = feet

FTC = Fire Technology Center

GETS = groundwater extraction and treatment system

NI = Well was not yet installed and/or developed at the time of the sampling event

X = Well will be sampled during applicable sampling event

Zone screened abbreviations: S = shallow overburden < 25 feet deep; D = deep overburden > 25 feet deep; BR = bedrock

Surface finish abbreviations: FM = flush mount; SU = stick up

Arcadis U.S., Inc.
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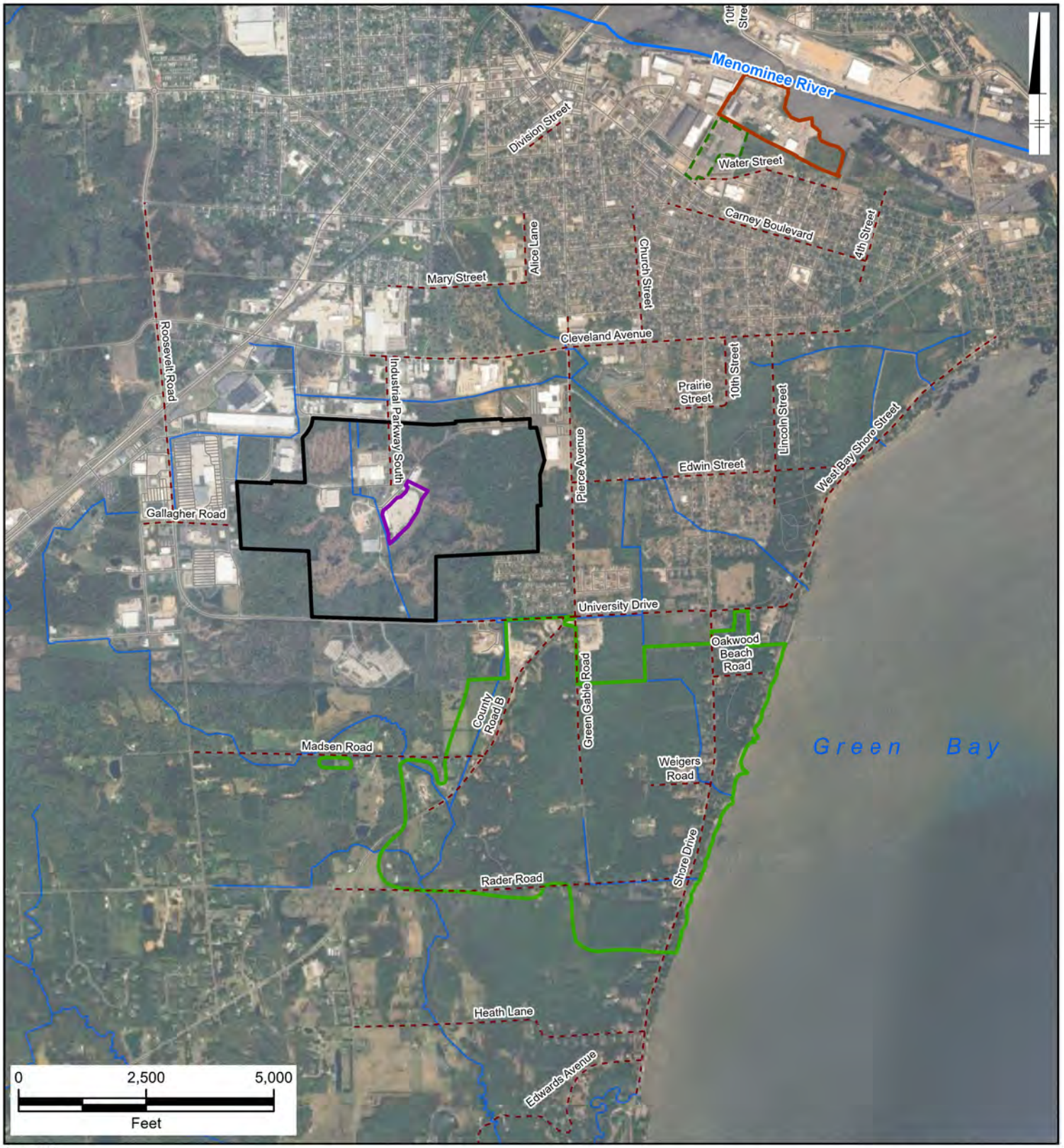
Milwaukee
Wisconsin 53202
Phone: 414 276 7742
Fax: 414 276 7603
www.arcadis.com

Figures



Legend

- PRIVATE WELL SAMPLING AREA
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- APPROXIMATE FTC SITE PROPERTY BOUNDARY
- OUTDOOR TRAINING AREA BOUNDARY
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- ROAD
- DITCH OR STREAM

NOTES:
1. AERIAL IMAGERY GOOGLE EARTH
2. ACRONYMS:
FTC - FIRE TECHNOLOGY CENTER

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

ROAD AND FEATURES

ARCADIS

FIGURE 1-1

City: Minneapolis/Citrix Div/Group: IMDVC Created By: Last Saved By: khans5747
TYCO Marinette, WI
T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC\Investigation_Interim_LTM_Plan\Investigation Interim LTM Plan.aprx 3/20/2025 10:13 AM

LEGEND:

DITCH/STREAM

BUILDING OUTLINE

NOTES:1. AERIAL IMAGERY GOOGLE EARTH.

0 225 450

GRAPHIC SCALE IN FEET

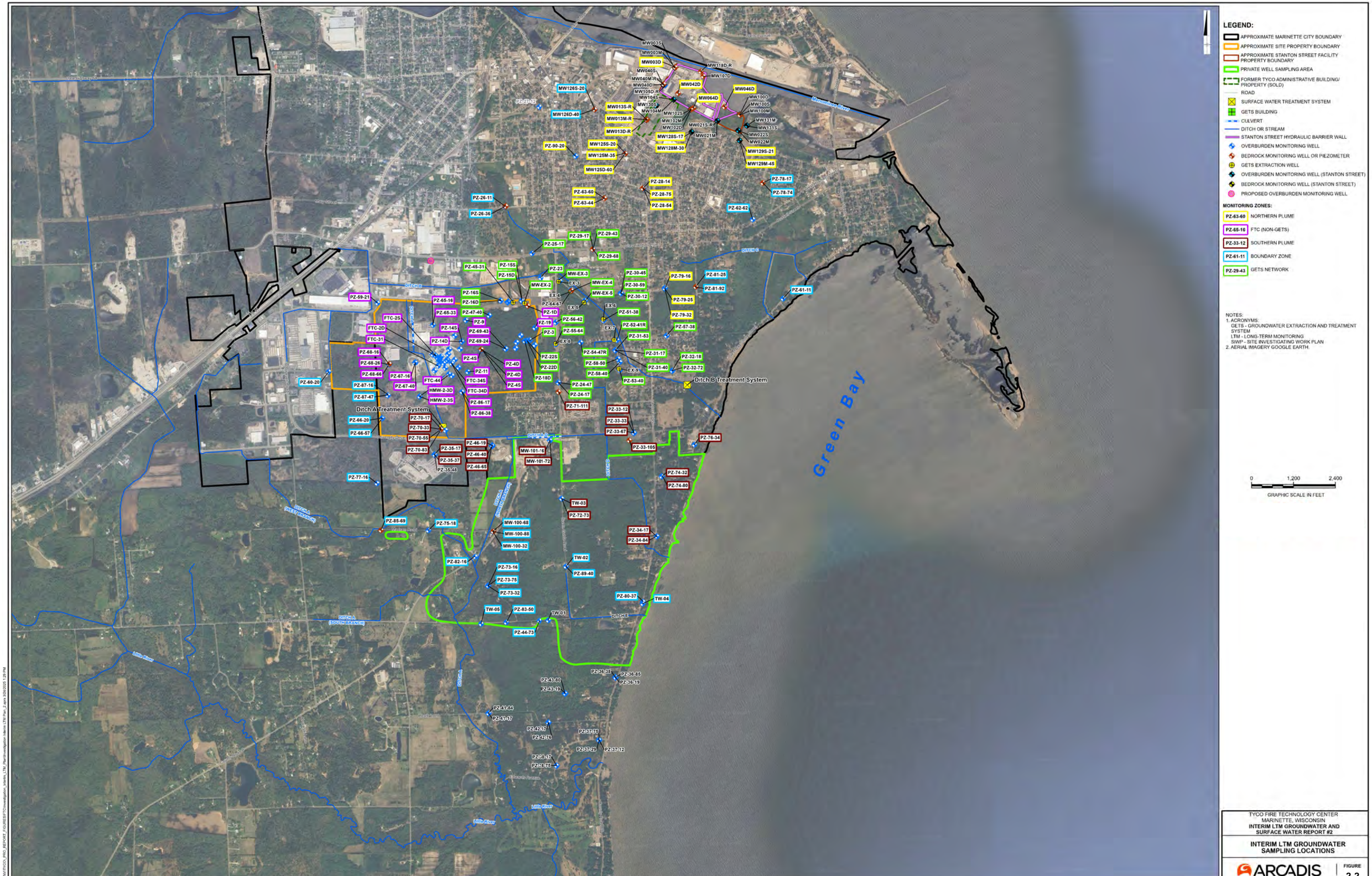
TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

FTC SITE LAYOUT

ARCADIS

FIGURE
2-1

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC\Investigation_Interim_LTM_Plan\Investigation Interim LTM Plan_2_August_2024.aprx 2/14/2025 4:48 PM_Last Saved By:_avi00976



LEGEND:

- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- PRIVATE WELL SAMPLING AREA
- FORMER TYCO ADMINISTRATIVE BUILDING/ PROPERTY (SOLD)
- ROAD
- SURFACE WATER TREATMENT SYSTEM
- GETS BUILDING
- CULVERT
- DITCH OR STREAM
- STANTON STREET HYDRAULIC BARRIER WALL
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL OR PIEZOMETER
- GETS EXTRACTION WELL
- OVERBURDEN MONITORING WELL (STANTON STREET)
- BEDROCK MONITORING WELL (STANTON STREET)
- PROPOSED OVERBURDEN MONITORING WELL

MONITORING ZONES:

- PZ-63-60 NORTHERN PLUME
- PZ-65-16 FTC (NON-GETS)
- PZ-33-12 SOUTHERN PLUME
- PZ-61-11 BOUNDARY ZONE
- PZ-29-43 GETS NETWORK

NOTES:
1. ACRONYMS:
   GETS - GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
   LTM - LONG-TERM MONITORING
   SIWP - SITE INVESTIGATING WORK PLAN
2. AERIAL IMAGERY GOOGLE EARTH.

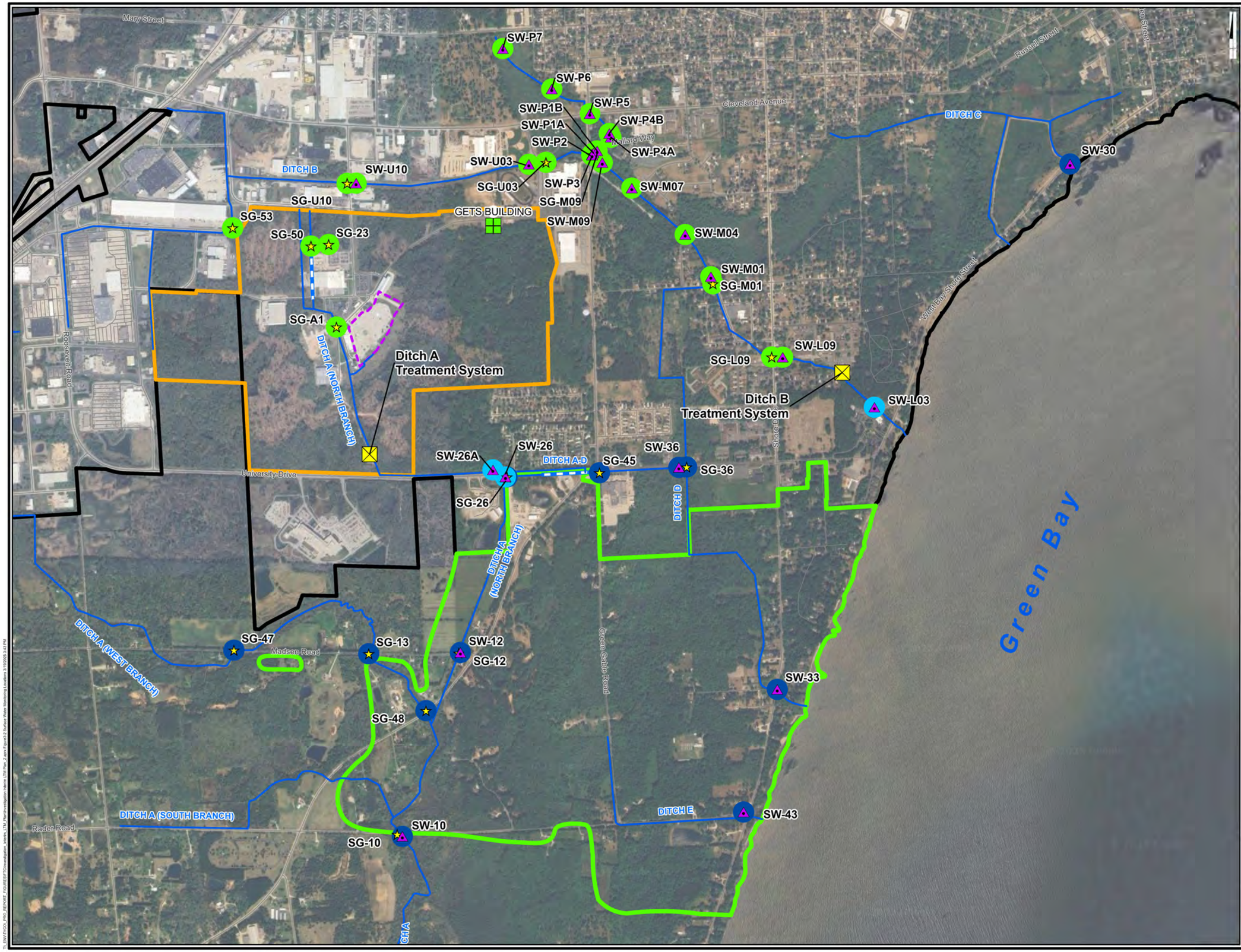
0 1,200 2,400
GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

INTERIM LTM GROUNDWATER SAMPLING LOCATIONS

ARCADIS

FIGURE
2-2



LEGEND

- APPROXIMATE FTC SITE PROPERTY BOUNDARY
- PRIVATE WELL SAMPLING AREA
- APPROXIMATE MARINETTE CITY BOUNDARY
- OUTDOOR TRAINING AREA
- ROAD
- CULVERT
- DITCH OR STREAM
- SURFACE WATER SAMPLING
- STAFF GAUGE
- GETS BUILDING
- SURFACE WATER TREATMENT SYSTEM
- INTERIM LTM SURFACE WATER MONITORING LOCATION
- GETS LTM SURFACE WATER MONITORING LOCATION
- DITCH TREATMENT MONITORING LOCATION

NOTES:

1. MONITORING OF DITCH B IS COMPLETED IN ACCORDANCE WITH THE GETS LTM PLAN (ARCADIS, 2021). SURFACE WATER SAMPLE LOCATION SW-26 AND SW-26A ARE MONITORED IN ACCORDANCE WITH THE RESPONSE TO COMMENTS ON THE SEMI-ANNUAL O&M PROGRESS REPORT #8 FOR THE DITCH A INTERIM ACTION TREATMENT SYSTEM (ARCADIS 2023).

2. ACRONYMS:
FTC - FIRE TECHNOLOGY CENTER
GETS - GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
LTM – LONG TERM MONITORING
3. AERIAL IMAGERY GOOGLE EARTH.

0 1,400 2,800

GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

SURFACE WATER MONITORING LOCATIONS

ARCADIS | FIGURE 2-3

LEGEND:

- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- FORMER FIRE TRAINING AREA
- PRIVATE WELL SAMPLING AREA
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- SURFACE WATER TREATMENT SYSTEM
- GETS BUILDING
- CULVERT
- DITCH OR STREAM
- STANTON STREET HYDRAULIC BARRIER WALL
- OVERBURDEN MONITORING
- BEDROCK MONITORING WELL OR PIEZOMETER
- OVERBURDEN MONITORING WELL (STANTON STREET)
- BEDROCK MONITORING WELL (STANTON STREET)
- HYDRAULIC PROFILING TOOL BORING
- GETS EXTRACTION WELL
- GROUNDWATER SAMPLING BORING
- SOIL BORING
- DITCH MINI-PIEZOMETER/STILLING WELL PAIR
- DITCH MINI-PIEZOMETER
- SURFACE WATER SAMPLE
- STAFF GAUGE
- ABANDONED HMW WELL
- ABANDONED PRODUCTION WELL
- ABANDONED MONITORING WELL

NOTES:
1. SOIL, SEDIMENT, AND STORMWATER SAMPLE LOCATIONS FOR PER- AND POLYFLUORINATED SUBSTANCES (PFAS) ARE NOT SHOWN ON THIS FIGURE.
2. OVERBURDEN WELLS LOCATED WITHIN THE STANTON STREET HYDRAULIC BARRIER WALL ARE NOT SHOWN ON THIS FIGURE.
3. A LOCATION IDENTIFIED AS A GROUNDWATER SAMPLING BORING IS INCLUSIVE OF GROUNDWATER SAMPLES COLLECTED FROM VERTICAL AQUIFER PROFILING (VAP) BORINGS AND OTHER TEMPORARY SAMPLING LOCATIONS.
4. A LOCATION WHERE LITHOLOGY HAS BEEN LOGGED BUT NO PFAS SAMPLES HAVE BEEN COLLECTED IS IDENTIFIED AS A SOIL BORING.
5. WITH THE EXCEPTION OF HMW-2-3S AND HMW-2-3D, ALL OTHER "HMW" WELLS WERE ABANDONED ON AUGUST 27, 2022.
6. BEDROCK MONITORING WELL MW127B-85 PRODUCED INSUFFICIENT WATER FOR SAMPLE COLLECTION. THEREFORE, THIS WELL WAS ABANDONED ON APRIL 19, 2024.
7. GETS OBSERVATION WELLS PZ-52-41 AND PZ-54-47 WERE ABANDONED ON AUGUST 24, 2023 DUE TO CITY UTILITY IMPROVEMENTS ALONG EDWIN ST. REPLACEMENT WELLS WERE INSTALLED ON APRIL 20, 2024.
8. MONITORING WELLS MW013S, MW013M, AND MW013D, ASSOCIATED WITH THE STANTON STREET FACILITY, HAD BEEN DAMAGED; THEREFORE, THE WELLS WERE ABANDONED ON NOVEMBER 3, 2022 AND REPLACED IN APPROXIMATELY THE SAME LOCATION ON OCTOBER 26 AND NOVEMBER 3, 2022.
9. THREE BRANCHES OF DITCH A ARE IDENTIFIED AS FOLLOWS:
NORTH BRANCH - THE SECTION OF DITCH A STARTING ON THE SITE AND ENDING AT THE CONFLUENCE WITH THE WEST BRANCH, JUST SOUTH OF COUNTY ROAD B.
WEST BRANCH - A SECTION OF DITCH A THAT BEGINS JUST WEST OF THE SHOPPING CENTER LOCATED ON ROOSEVELT ROAD THAT ENDS AT THE CONFLUENCE WITH THE NORTH BRANCH.
SOUTH BRANCH - A TRIBUTARY OF DITCH A THAT ENTERS FROM THE WEST AND JOINS DITCH A JUST NORTH OF RADER ROAD, EAST OF COUNTY ROAD B.
10. AERIAL IMAGERY GOOGLE EARTH.

0 1,200 2,400
GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

HISTORICAL INVESTIGATION LOCATIONS

ARCADIS | FIGURE 2-4

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LEGEND:

- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- PRIVATE WELL SAMPLING AREA
- OUTDOOR TRAINING AREA
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- FORMER TYCO ADMINISTRATIVE BUILDING/PROPERTY (SOLD)
- SURFACE WATER TREATMENT SYSTEM
- CULVERT
- DITCH OR STREAM
- STANTON STREET HYDRAULIC BARRIER WALL
- OVERBURDEN MONITORING WELL OR PIEZOMETER
- STAFF GAUGE
- GETS EXTRACTION WELL
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTES:
1. THE COMPREHENSIVE GROUNDWATER GAUGING EVENT WAS COMPLETED OCTOBER 14 - 16, 2024.
2. WATER LEVELS FROM SHALLOW MONITORING WELLS WERE USED FOR CONTOURING; WATER LEVELS FROM DEEPER OVERBURDEN MONITORING WELLS ARE INCLUDED FOR REFERENCE.
3. * = MONITORING WELL INSTALLATION AND/OR DEVELOPMENT WAS INCOMPLETE DURING THE COMPREHENSIVE GROUNDWATER GAUGING EVENT; THEREFORE, A WATER LEVEL IS NOT AVAILABLE FOR THE WELL.
4. ** = UNABLE TO GAUGE PZ-77-16 DURING OCTOBER 2024 COMPREHENSIVE GAUGING EVENT.
5. --* = STAFF GAUGE LOCATION OBSERVED DRY DURING OCTOBER 2024 COMPREHENSIVE GAUGING EVENT.
6. --** = UNABLE TO LOCATE SG-23 DUE TO OVERGROWN VEGETATION DURING OCTOBER 2024 COMPREHENSIVE GAUGING EVENT.
7. GROUNDWATER ELEVATIONS ARE PROVIDED IN NAVD88 FEET.
8. AERIAL IMAGERY GOOGLE EARTH.

0 1,000 2,000
GRAPHIC SCALE IN FEET

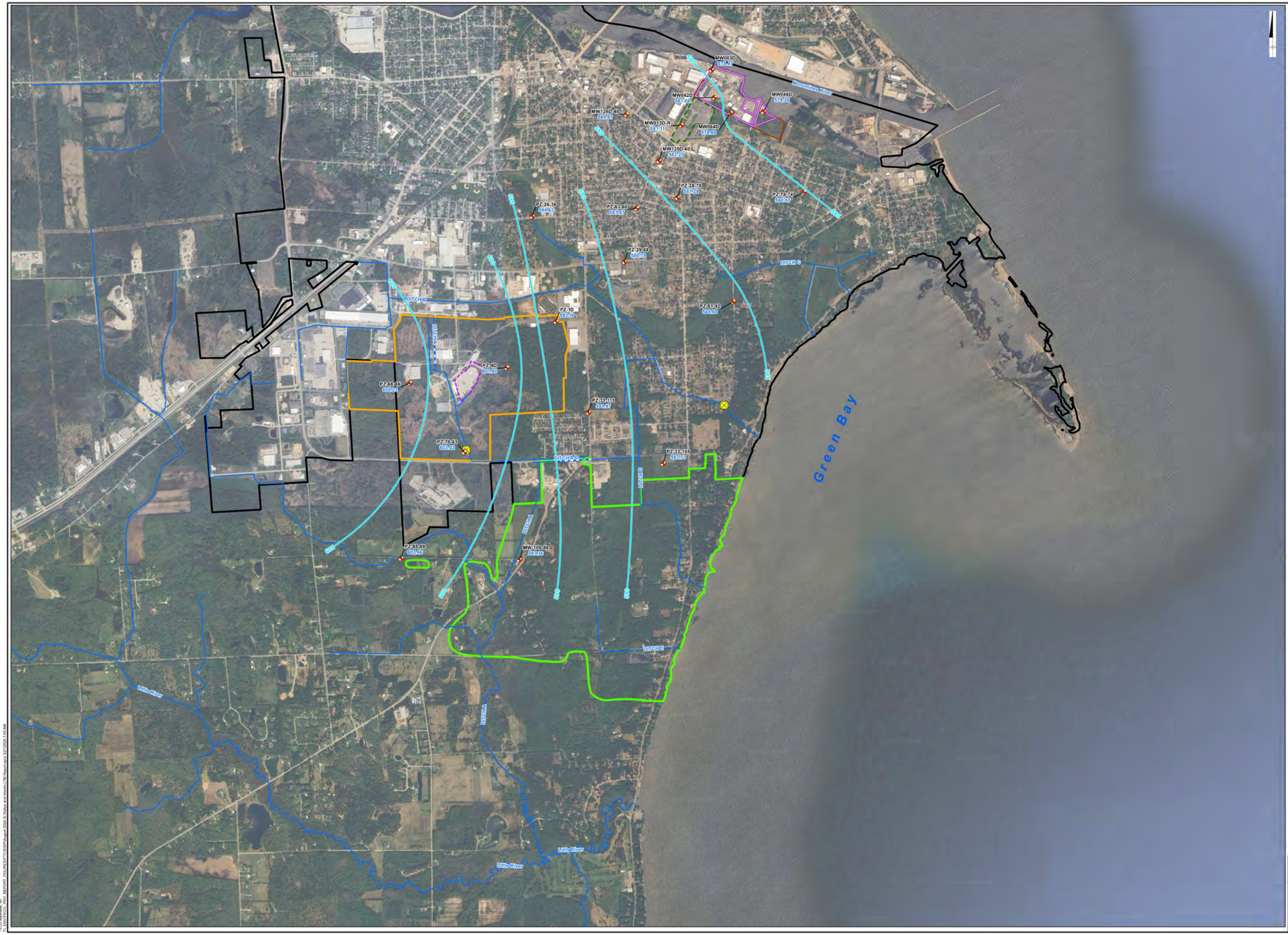
TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

OCTOBER 2024 GROUNDWATER POTENTIOMETRIC SURFACE - SHALLOW

ARCADIS

FIGURE **3-1**

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC\SWP\August 2024 SI Status and Interim LTM Report.aprx 3/21/2025 7:55 AM



LEGEND

- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- PRIVATE WELL SAMPLING AREA
- OUTDOOR TRAINING AREA
- APPROXIMATE STANTON STREET FACILITY PROPERTY BOUNDARY
- FORMER TYCO ADMINISTRATIVE BUILDING/ PROPERTY (SOLD)
- SURFACE WATER TREATMENT SYSTEM
- CULVERT
- DITCH OR STREAM
- STANTON STREET HYDRAULIC BARRIER WALL
- BEDROCK MONITORING WELL OR PIEZOMETER
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)

NOTES:
1. THE COMPERHENSIVE GROUNDWATER GAUGING EVENT WAS COMPLETED OCTOBER 14 - 16, 2024.
2. GROUNDWATER ELEVATIONS ARE PROVIDED IN NAVD88 FEET.
3. AERIAL IMAGERY GOOGLE EARTH.

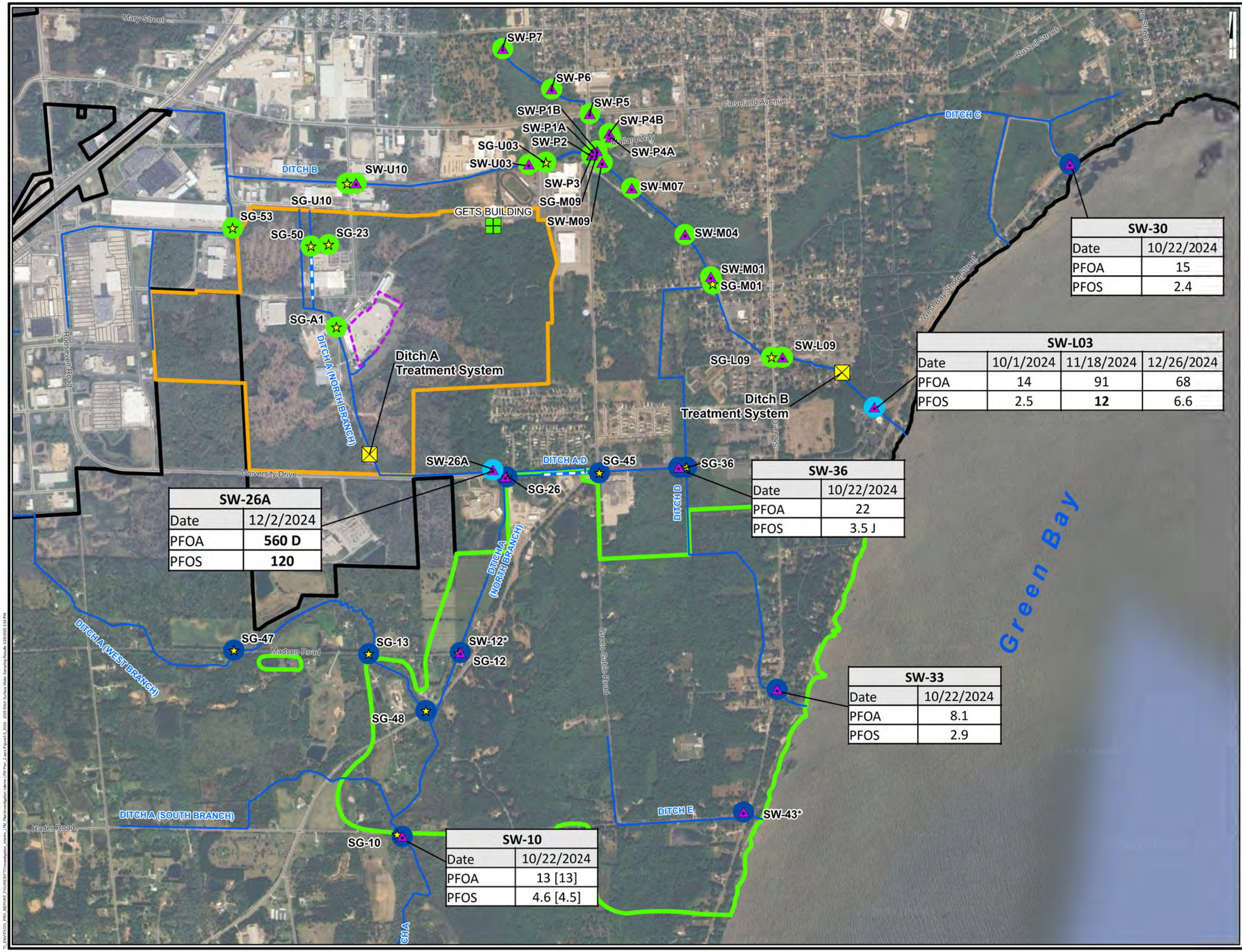
0 1,200 2,400
GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT 2

OCTOBER 2024 GROUNDWATER POTENTIOMETRIC SURFACE - BEDROCK

ARCADIS

FIGURE 3-2



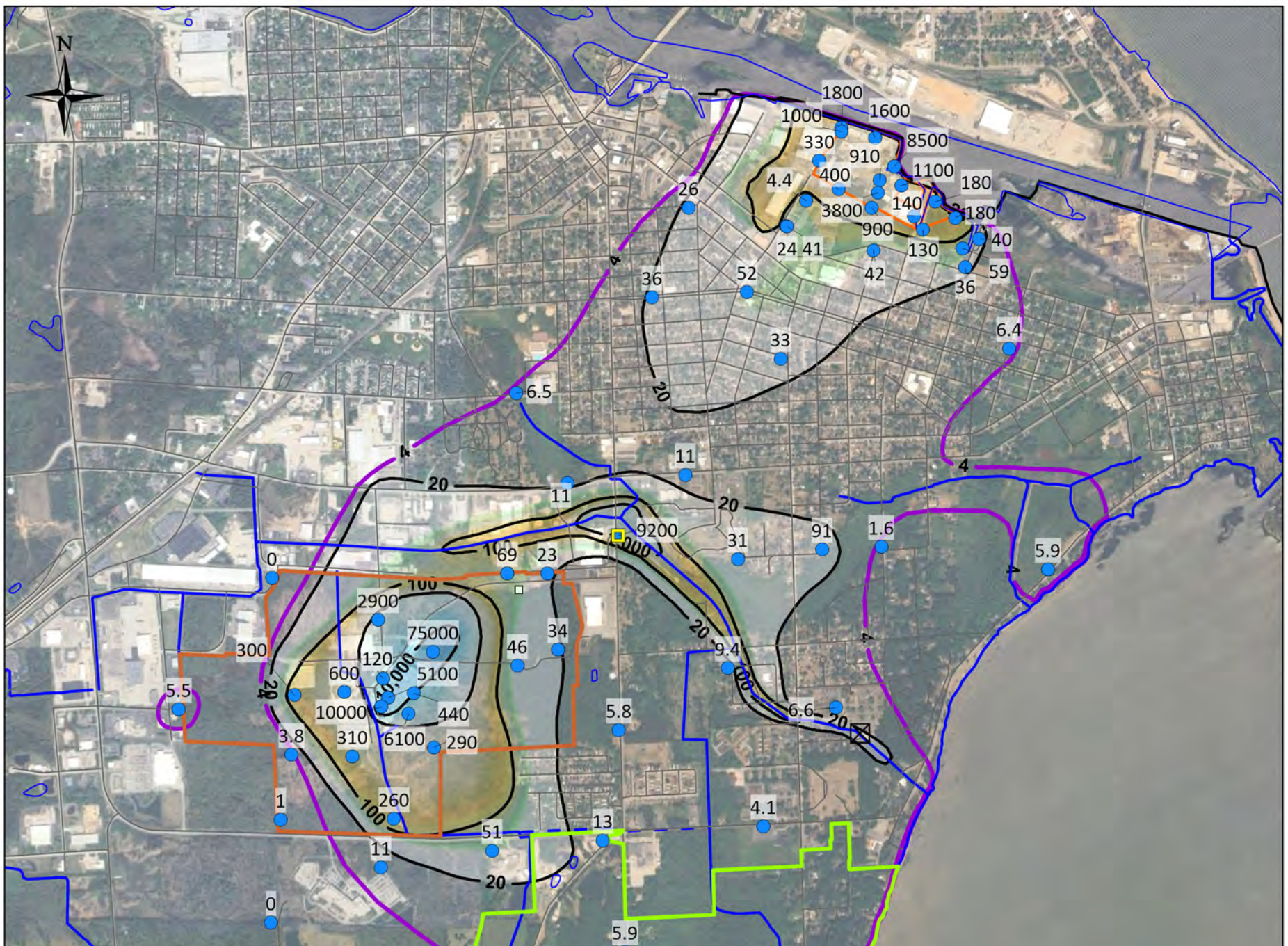
TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

2024 DITCH SURFACE WATER SAMPLING RESULTS

ARCADIS

FIGURE 3-3



PFOA Concentration (ng/L)

20,000
10,000
5,000
2,000
1,000
500
200
100
50
20
4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

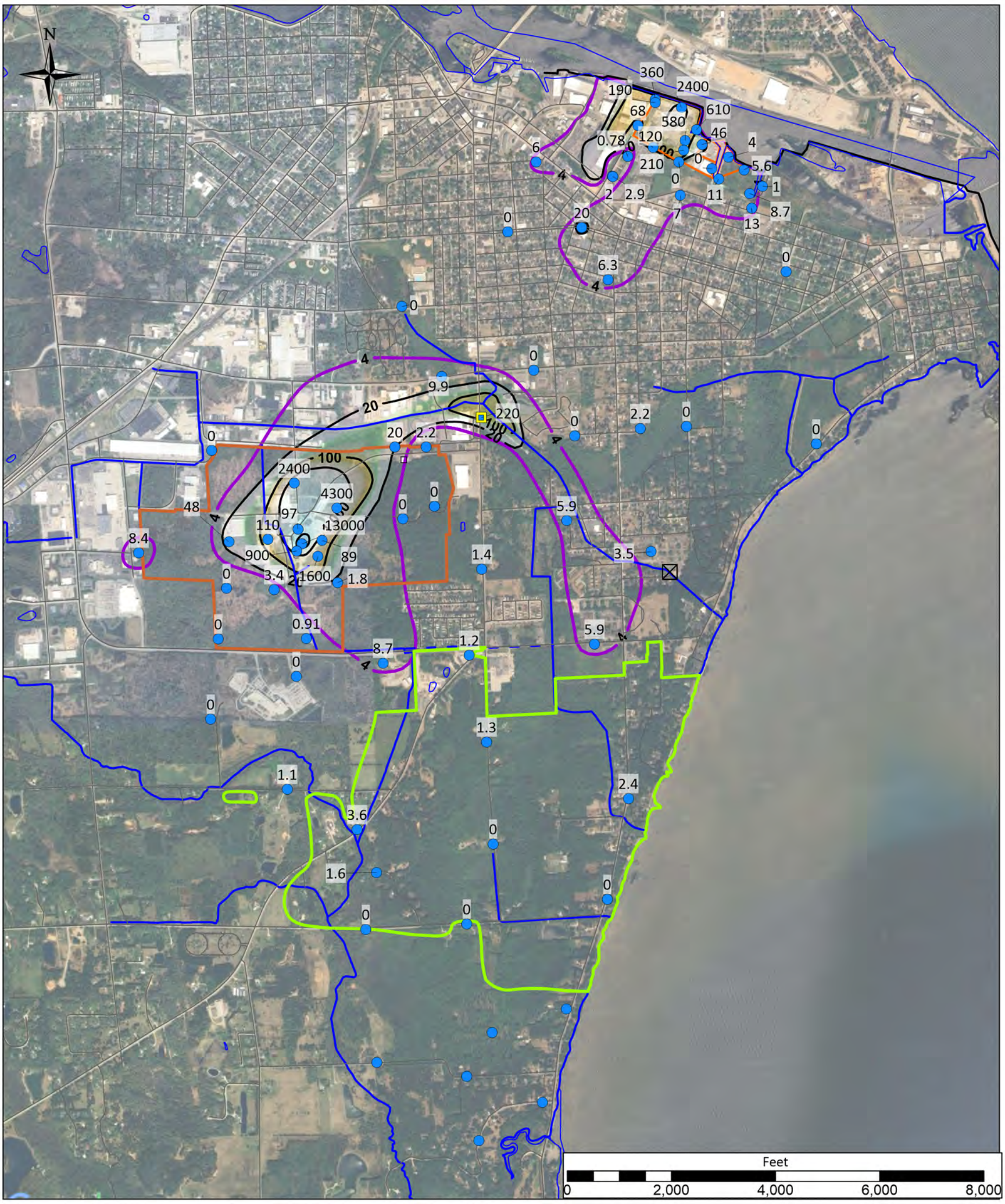
1. Figure presents concentrations of first encounted groundwater. The sampling interval is between the landsurface and a depth of 18 ft.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOA concentrations in nanograms/Liter (ng/L)

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Shallow PFOA Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE 4-1



PFOS Concentration (ng/L)

20,000
10,000
5,000
2,000
1,000
500
200
100
50
20
4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

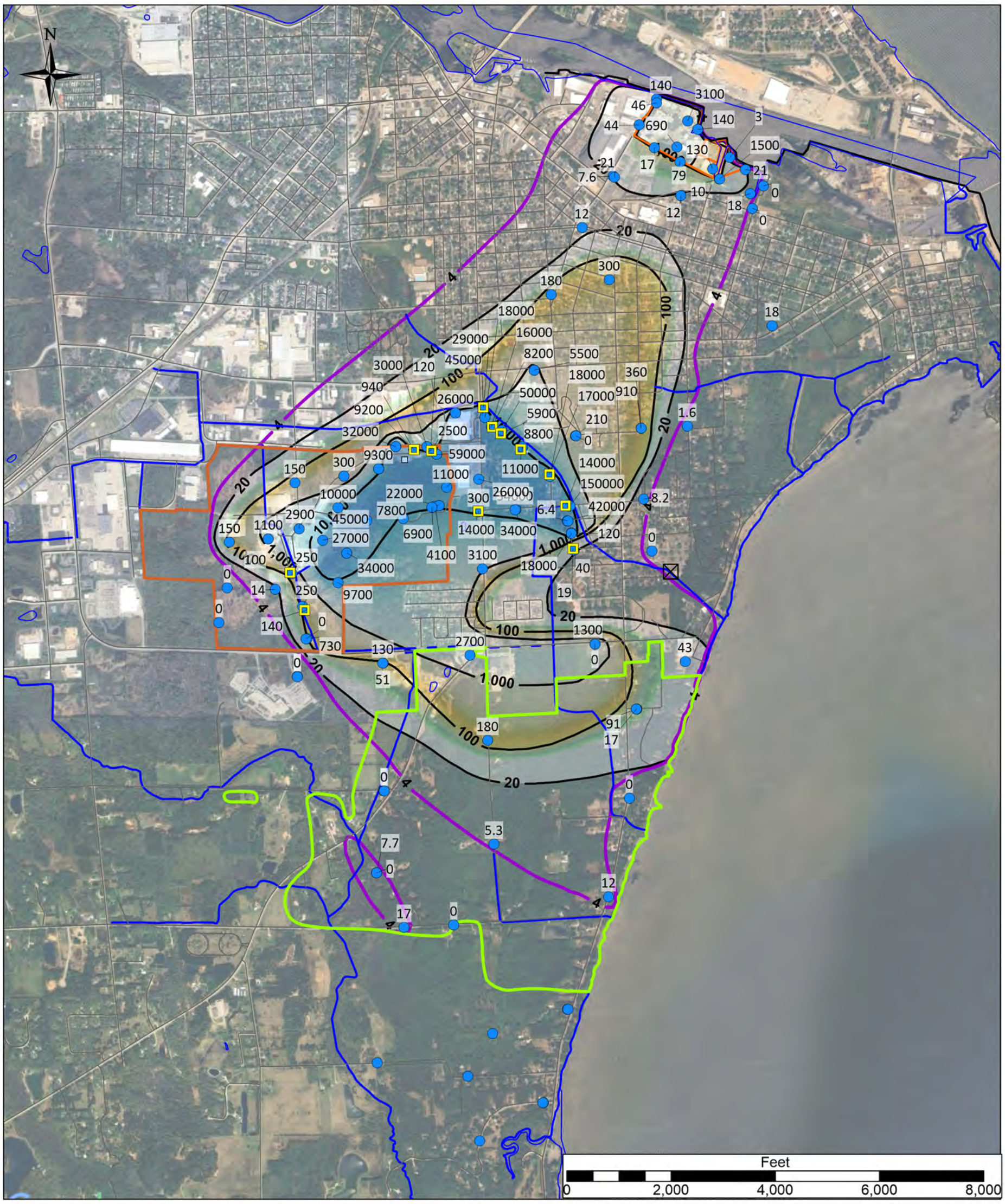
1. Figure presents concentrations of first encounted groundwater. The sampling interval is between the landsurface and a depth of 18 ft.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOS concentrations in nanograms/Liter (ng/L)

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Shallow PFOS Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE 4-2



PFOA Concentration (ng/L)

20,000
10,000
5,000
2,000
1,000
500
200
100
50
20
4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

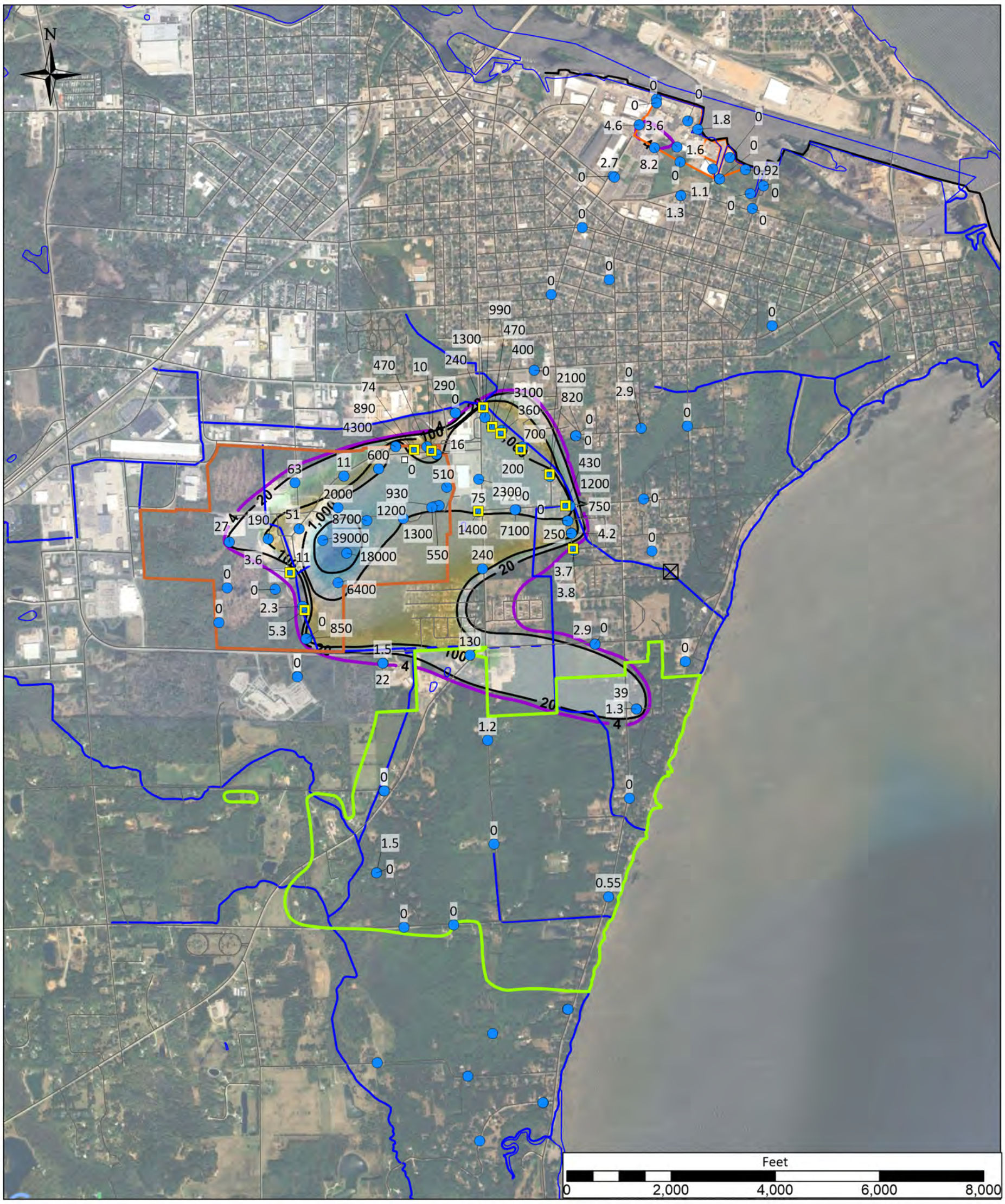
1. Figure presents concentrations of first encounted groundwater. The sampling interval is between a depth of 18 ft and the top of bedrock.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOA concentrations in nanograms/Liter (ng/L)

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Deep PFOA Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE 4-3



PFOS Concentration (ng/L)

- 20,000
- 10,000
- 5,000
- 2,000
- 1,000
- 500
- 200
- 100
- 50
- 20
- 4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

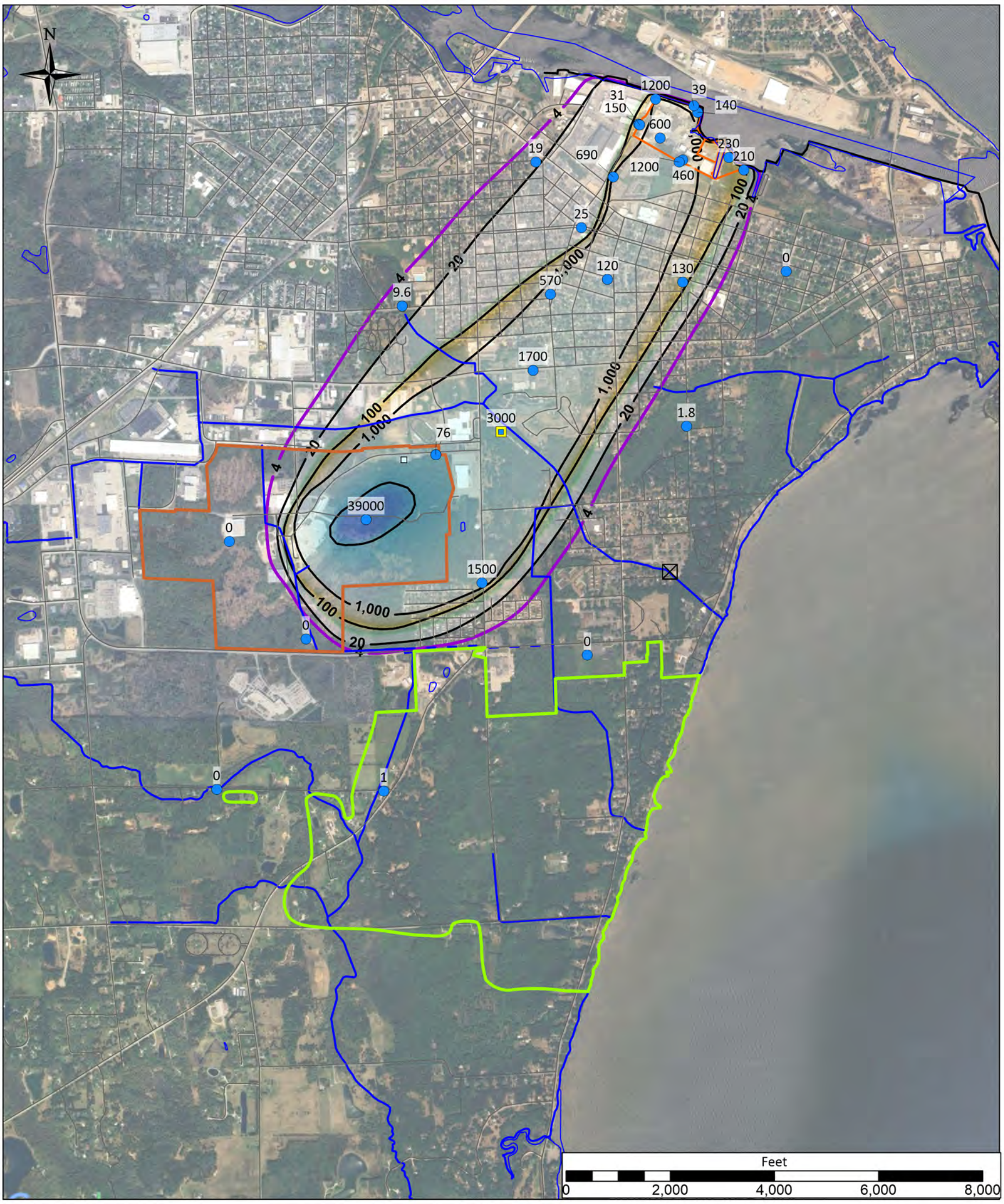
1. Figure presents concentrations of first encounted groundwater. The sampling interval is between a depth of 18 ft and the top of bedrock.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOS concentrations in nanograms/Liter (ng/L)

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Deep PFOS Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE 4-4



PFOA Concentration (ng/L)

20,000
10,000
5,000
2,000
1,000
500
200
100
50
20
4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

1. Figure presents concentrations in bedrock.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOA concentrations in nanograms/Liter (ng/L)

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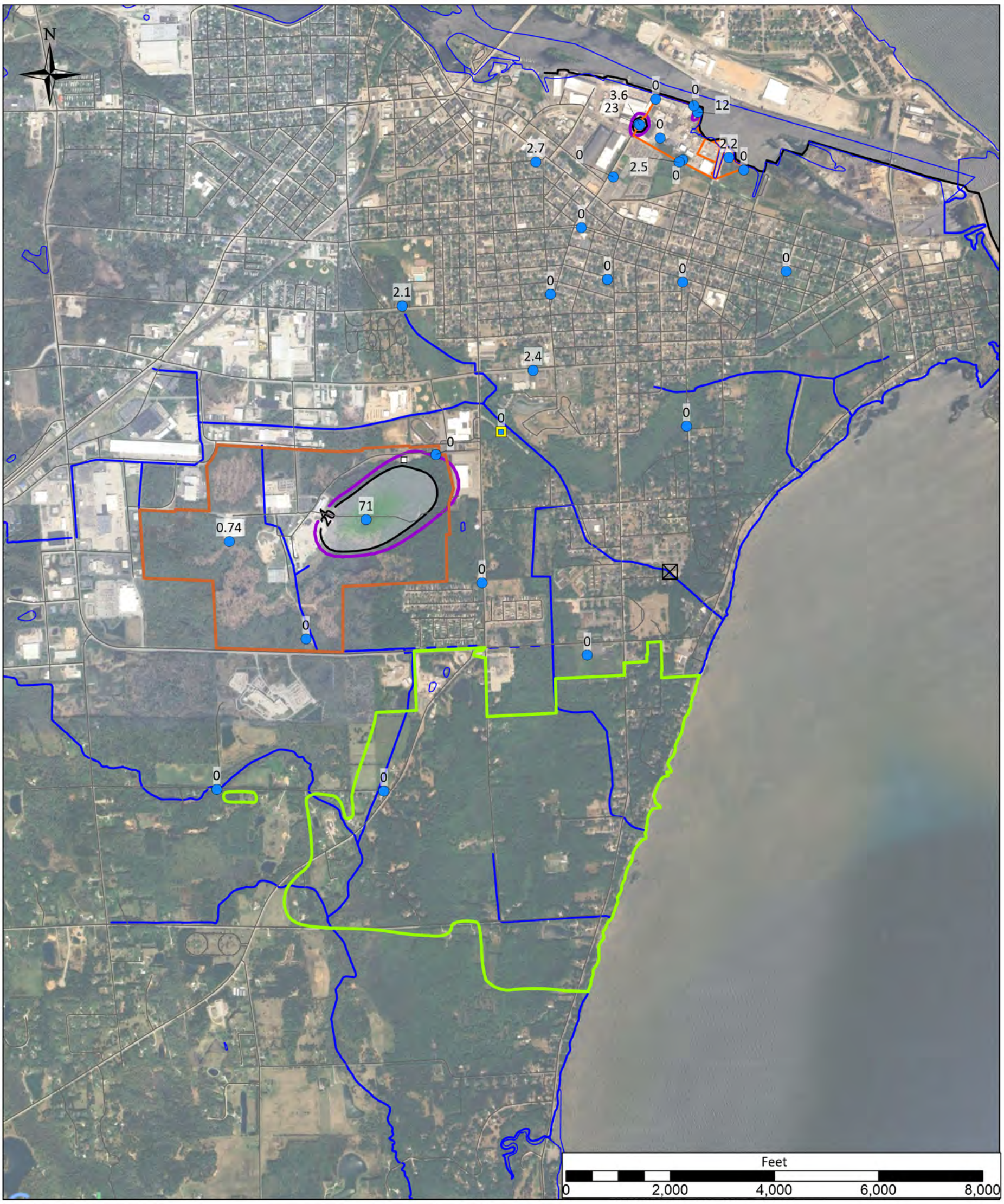
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Bedrock PFOA Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE 4-5



PFOS Concentration (ng/L)

20,000
10,000
5,000
2,000
1,000
500
200
100
50
20
4

Legend

- FTC Site Area
- Ditches/Streams
- PWSA Boundary
- Monitoring Well
- GETS Extraction Well
- Ditch B Treatment System
- GETS Treatment Building
- Stanton St. Site Barrier Walls

Notes:

1. Figure presents concentrations in bedrock.
2. Contours based on the most recent sampling of site monitoring wells.
3. Posted values are PFOS concentrations in nanograms/Liter (ng/L)

TYCO FIRE TECHNOLOGY CENTER
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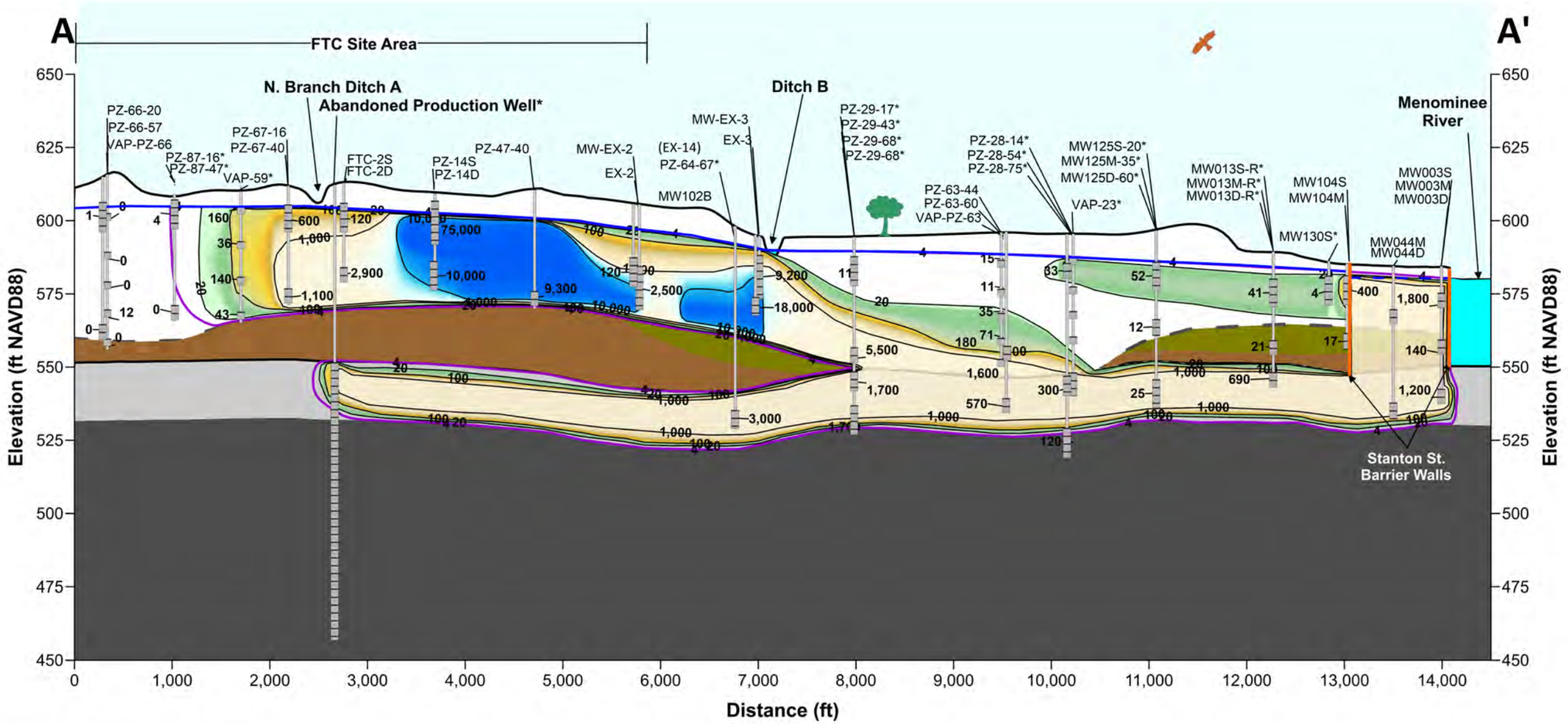
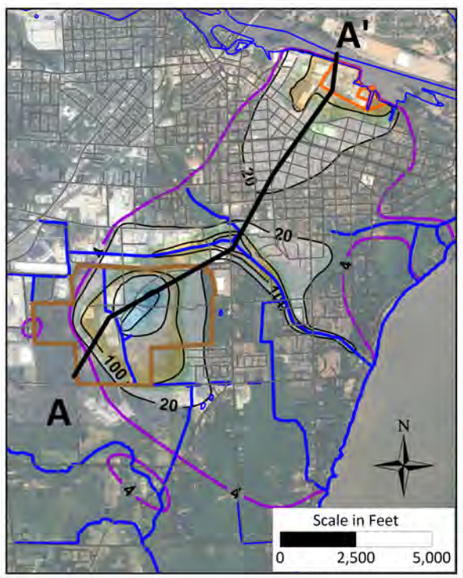
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Bedrock PFOS Concentrations at Site Monitoring Locations (Fall 2024 - Winter 2025)

ARCADIS

FIGURE
4-6





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls
- *Projected onto cross-section

PFOA Concentration (ng/L)

1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOA Concentration (ng/L)

>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0
1,200
2,400

Vertical Scale in feet
0
40
80

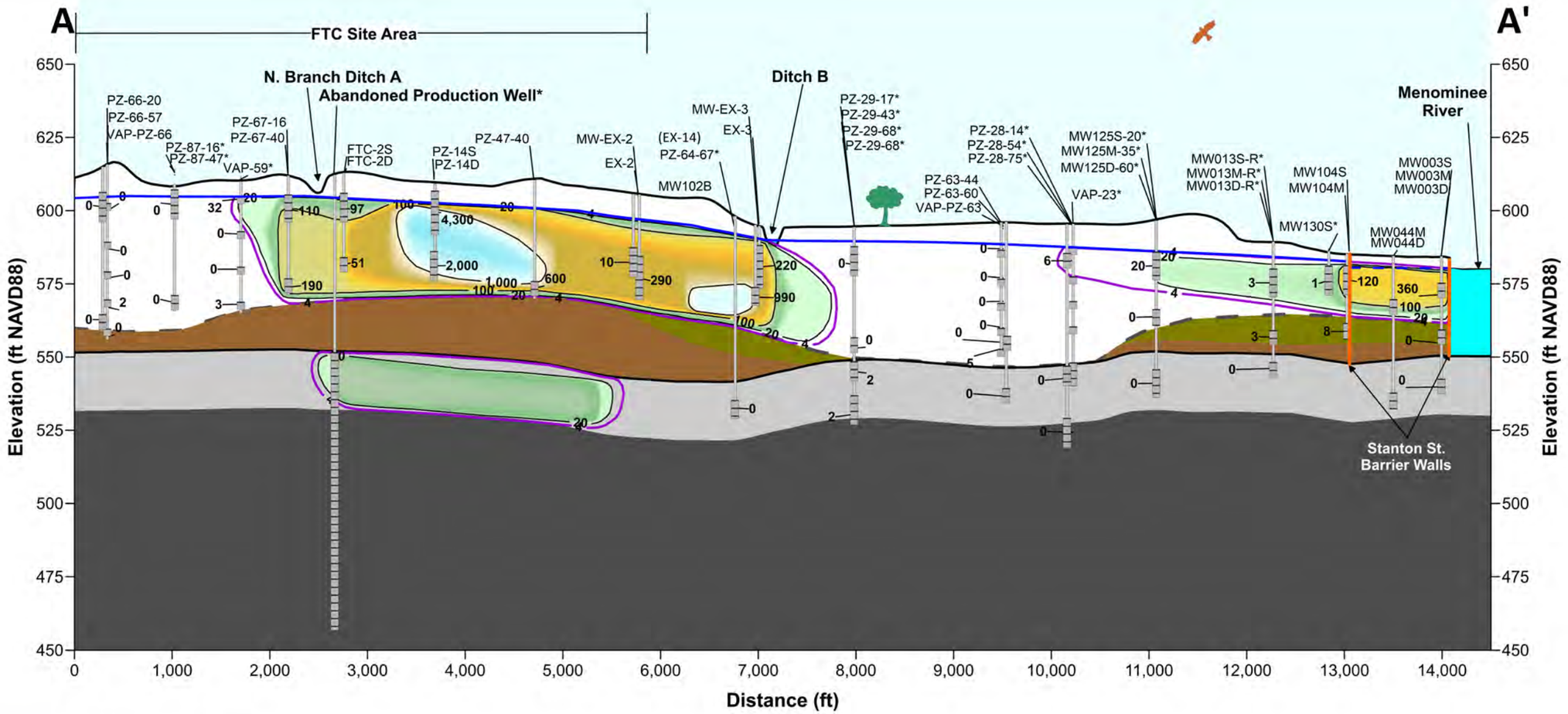
Vertical Exaggeration = 30

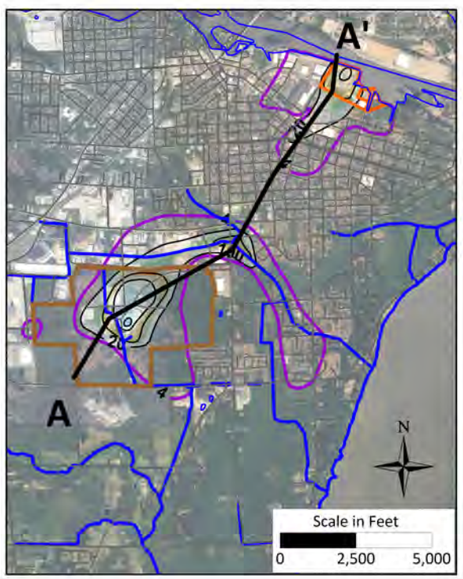
TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section A-A'
PFOA Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-7





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls
- *Projected onto cross-section

PFOS Concentration (ng/L)
1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOS Concentration (ng/L)
>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0
1,200
2,400

Vertical Scale in feet
0
40
80

Vertical Exaggeration = 30

TYCO FIRE TECHNOLOGY CENTER
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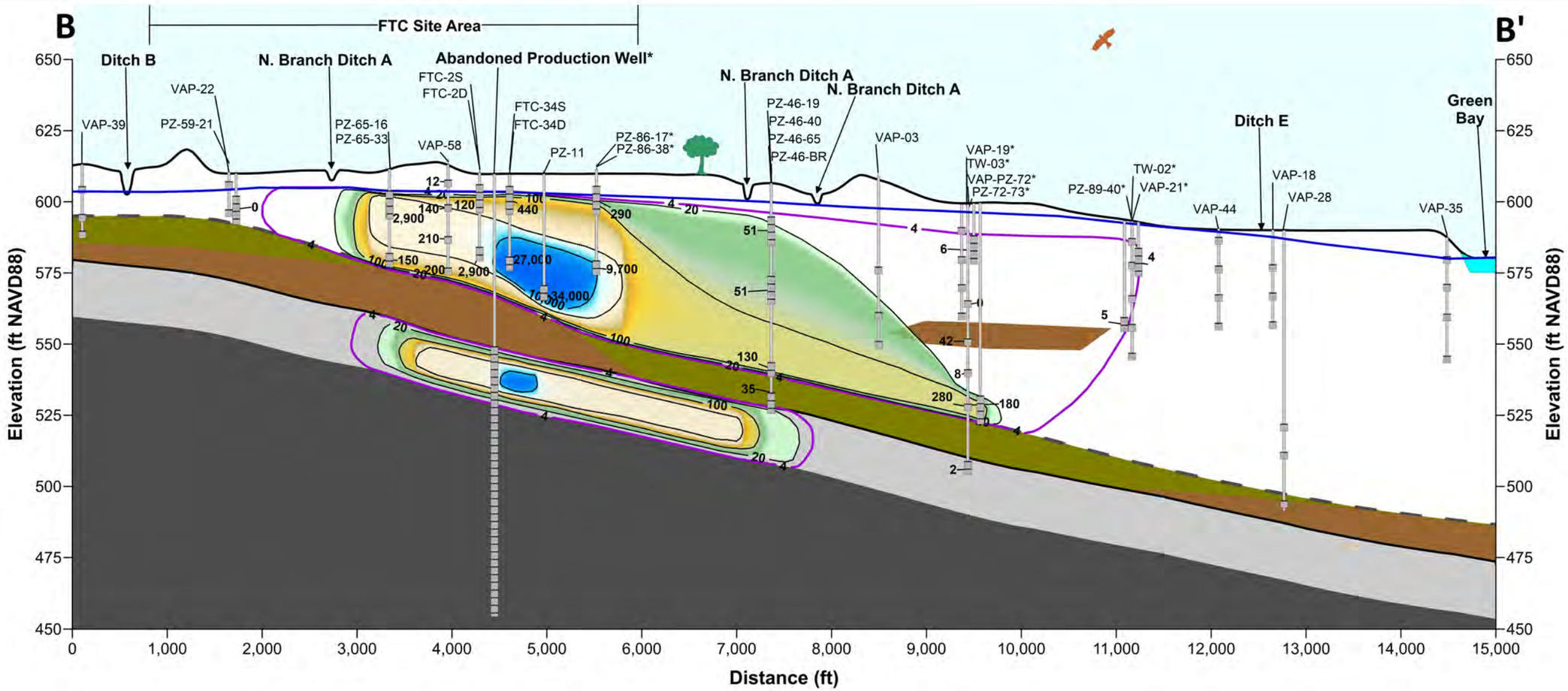
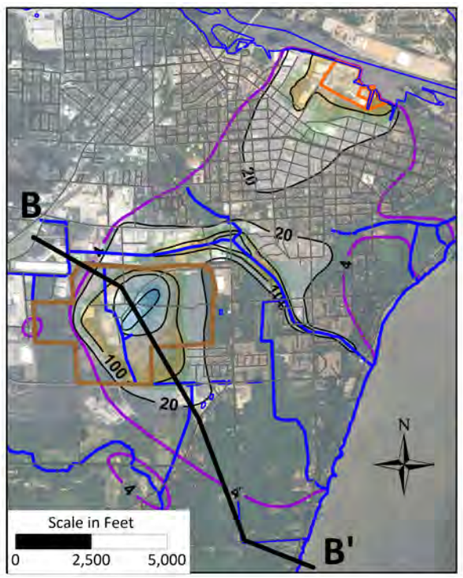
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section A-A'
PFOS Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-8





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls

*Projected onto cross-section

PFOA Concentration (ng/L)
1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOA Concentration (ng/L)
>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0
1,200
2,400

Vertical Scale in feet
0
40
80

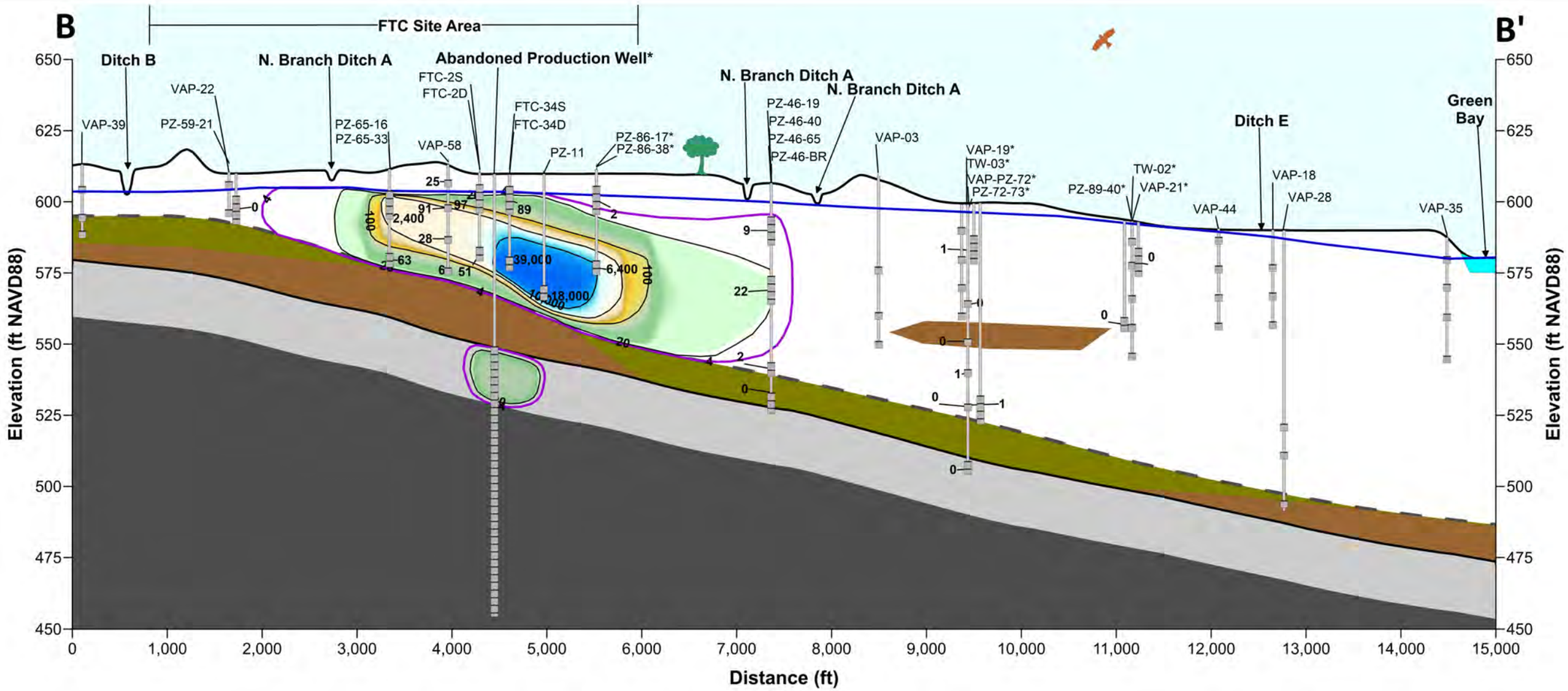
Vertical Exaggeration = 30

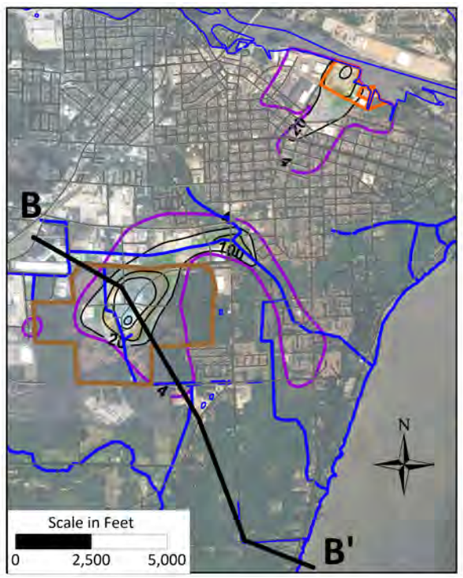
TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section B-B'
PFOA Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-9





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls

*Projected onto cross-section

PFOS Concentration (ng/L) ↓ 1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOS Concentration (ng/L)

>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0 1,200 2,400

Vertical Scale in feet
0 40 80

Vertical Exaggeration = 30

TYCO FIRE TECHNOLOGY CENTER
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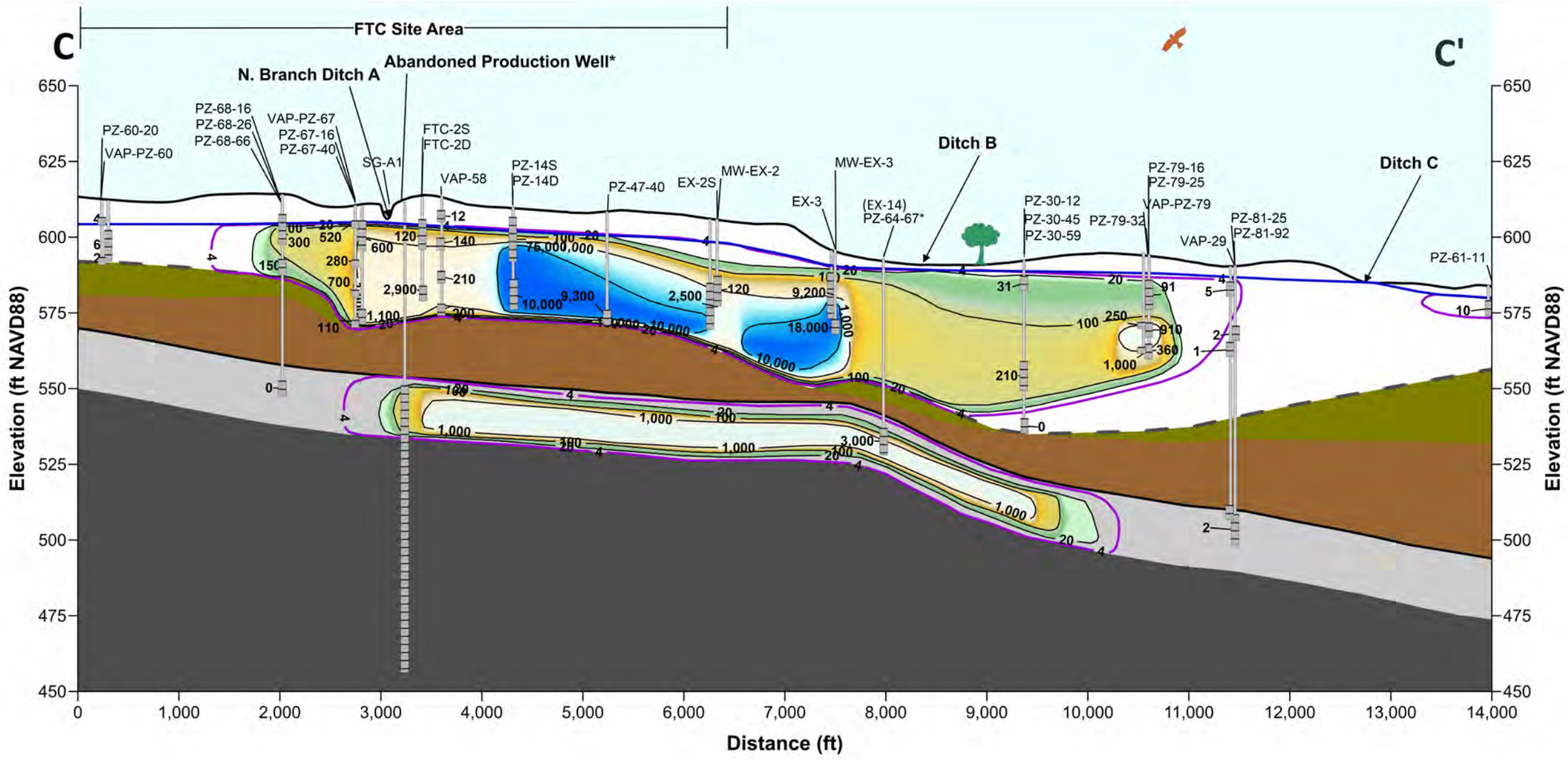
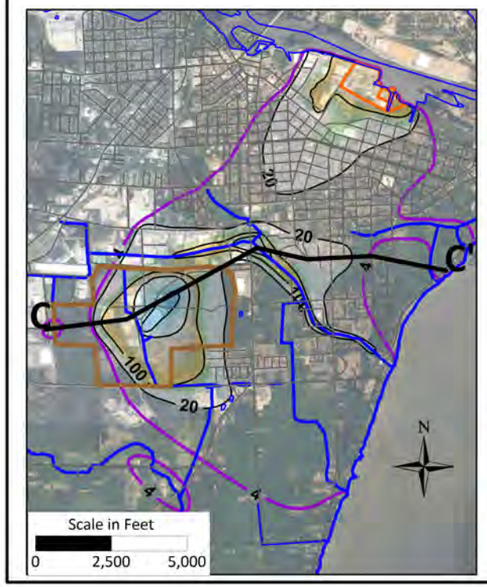
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section B-B'
PFOS Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-10





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls
- *Projected onto cross-section

PFOA Concentration (ng/L) → 1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOA Concentration (ng/L)

>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0
1,200
2,400

Vertical Scale in feet
0
40
80

Vertical Exaggeration = 30

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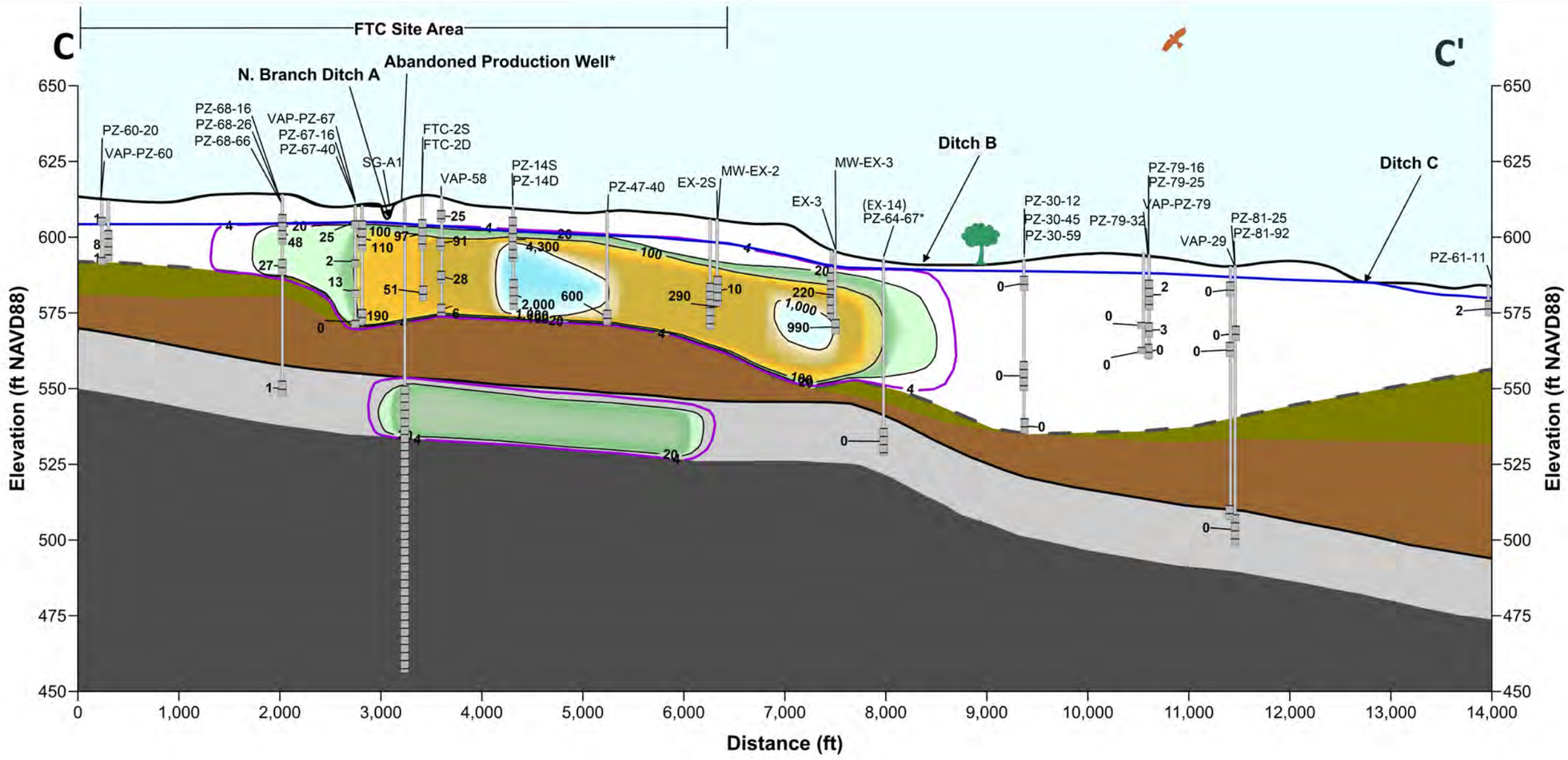
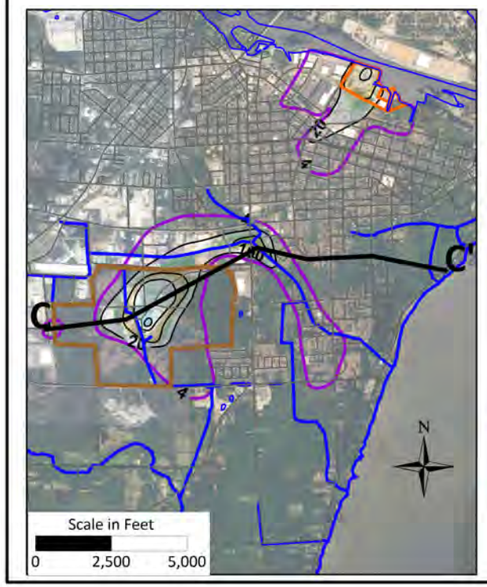
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section C-C'
PFOA Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-11





Legend

- Overburden Aquifer (clastics / sand to sandy silt)
- Overburden Aquitard - Till (silt and clay with gravel)
- Overburden Aquitard - Clay or silt
- Weathered Bedrock (Dolomite)
- Competent Bedrock (Dolomite)
- Top of Overburden Aquitard
- Water Table
- Stanton St. Site Barrier Walls
- *Projected onto cross-section

PFOS Concentration (ng/L) → 1,000

Well / Piezometer / Soil Boring / VAP Location

Well Screen Interval or Sample Location

The groundwater flow direction on the cross-section is left to right.

PFOS Concentration (ng/L)

>20,000
10,000
5,000
2,000
1,000
500
200
100
50
20

Horizontal Scale in feet
0
1,200
2,400

Vertical Scale in feet
0
40
80

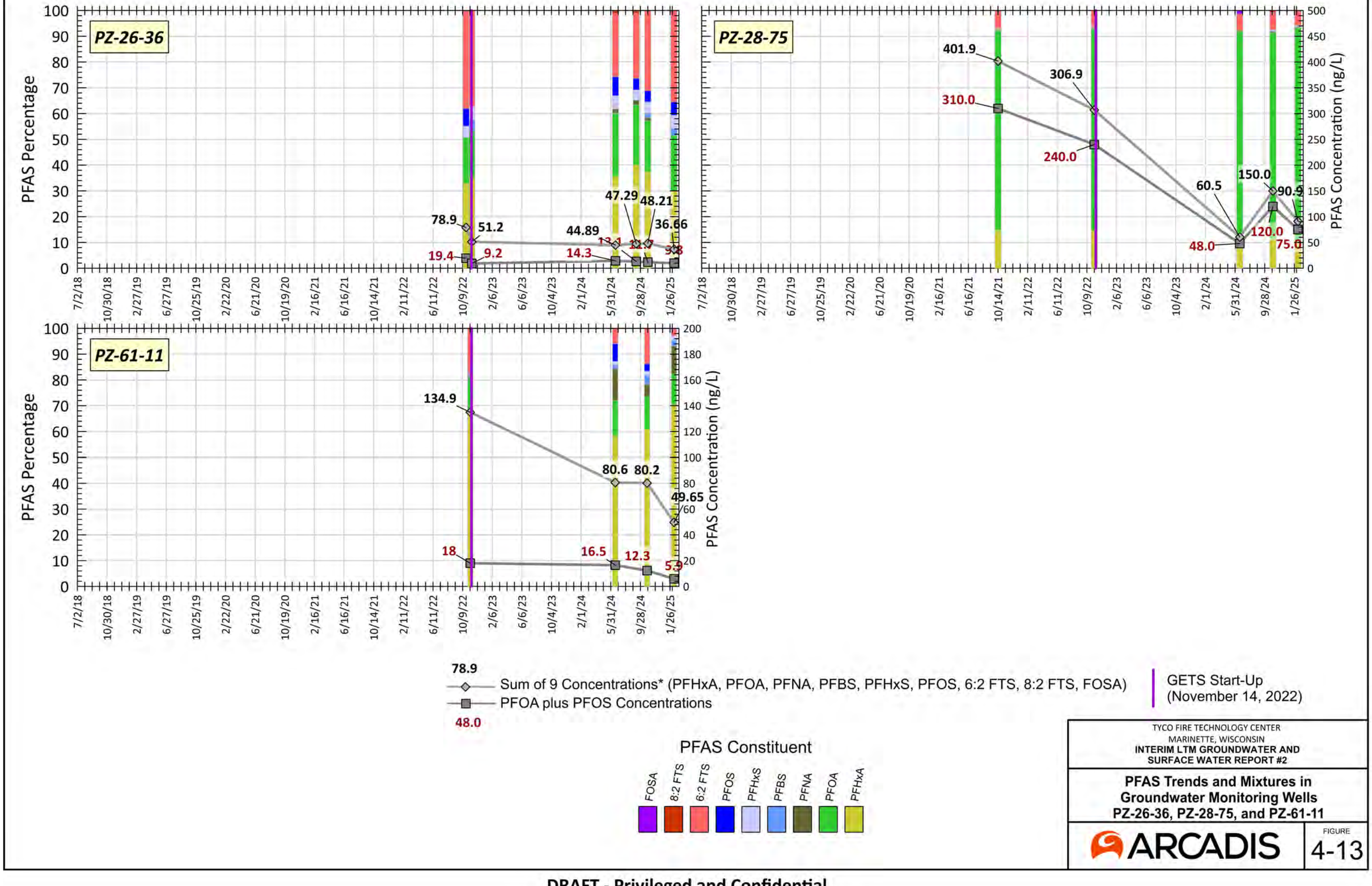
Vertical Exaggeration = 30

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

Cross Section C-C'
PFOS Plume Contours of Recent Sampling Results through February 2025

ARCADIS

FIGURE
4-12



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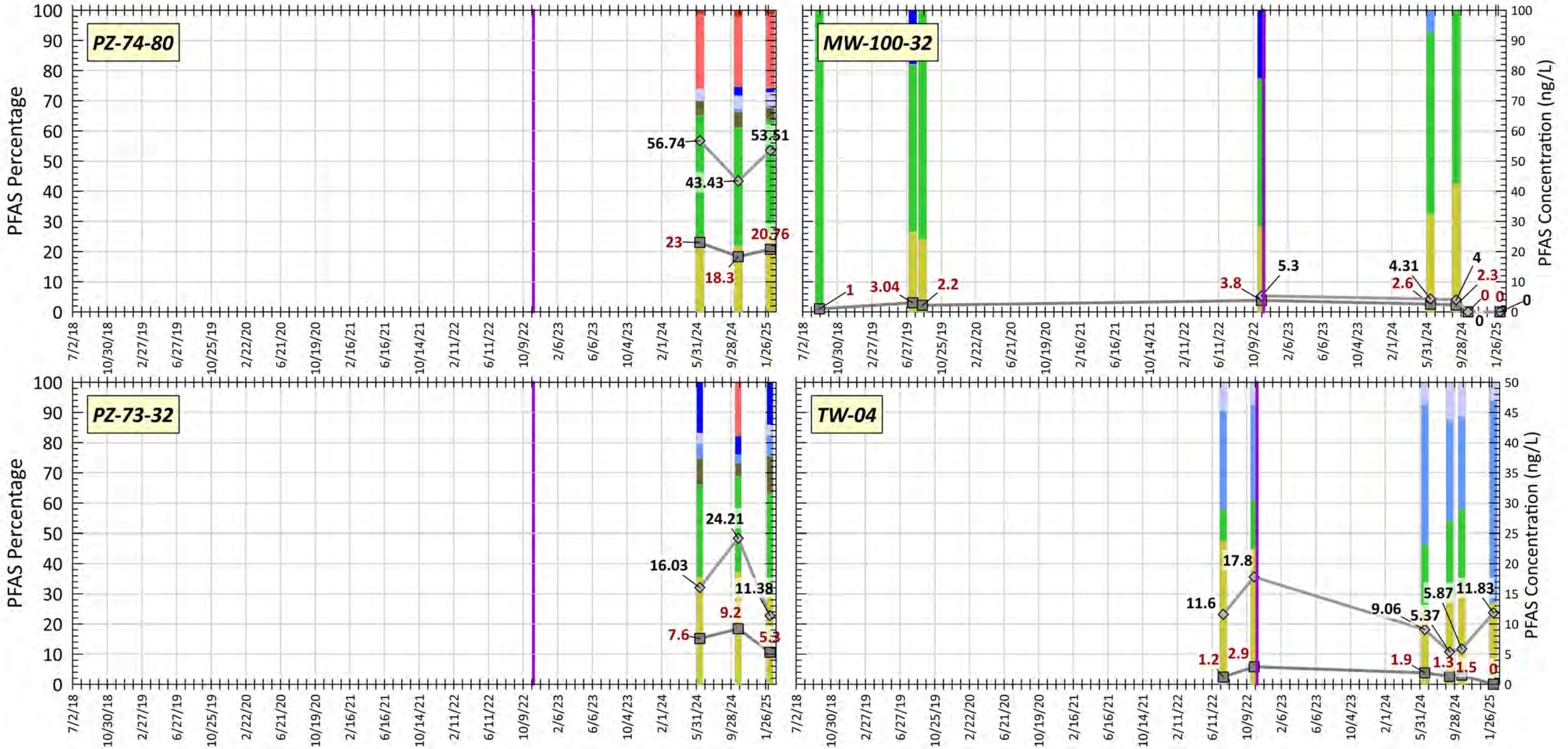
MARINETTE, WISCONSIN
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

PFAS Trends and Mixtures in Groundwater Monitoring Wells PZ-26-36, PZ-28-75, and PZ-61-11

ARCADIS

FIGURE 4-13

DRAFT - Privileged and Confidential



Note:
The sum of nine compounds for 2018 and 2019 sampling is not shown as all 9 compounds were not included on the analyte list.

TYCO FIRE TECHNOLOGY CENTER
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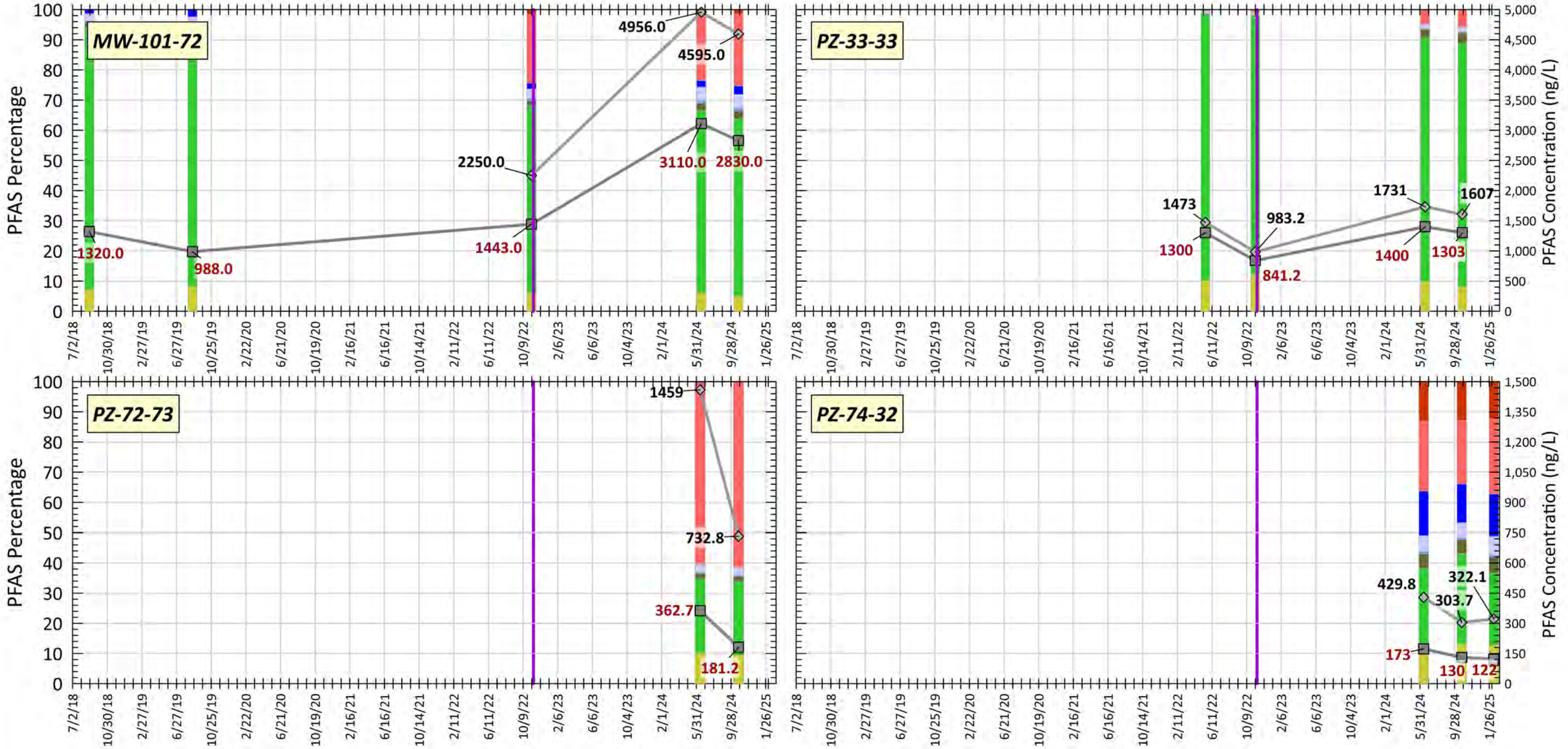
INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

PFAS Trends and Mixtures in Groundwater Monitoring Wells PZ-74-80, MW-100-32, PZ-73-32, and TW-04

ARCADIS

FIGURE
4-14

DRAFT - Privileged and Confidential



78.9
Sum of 9 Concentrations* (PFHxA, PFOA, PFNA, PFBS, PFHxS, PFOS, 6:2 FTS, 8:2 FTS, FOSA)
PFOA plus PFOS Concentrations
48.0

GETS Start-Up (November 14, 2022)

PFAS Constituent

FOSA | 8:2 FTS | 6:2 FTS | PFOS | PFHxS | PFBS | PFNA | PFOA | PFHxA

Note:
The sum of nine compounds for 2018 and 2019 sampling is not shown as all 9 compounds were not included on the analyte list.

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INTERIM LTM GROUNDWATER AND SURFACE WATER REPORT #2

PFAS Trends and Mixtures in Groundwater Monitoring Wells MW-101-72, PZ-33-33, PZ-72-73, and PZ-74-32

ARCADIS

FIGURE 4-15

DRAFT - Privileged and Confidential