

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 Open 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 form 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.

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

Form 4400-237 (R 12/18)

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

The requester listed above: (select all that apply)

- 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 Verburg	First Ben	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (414) 276-7742	Fax # (include area code)	Email Ben.Verburg@arcadis.com	

Environmental Consultant (if applicable)

Contact Last Name Verburg	First Ben	MI	Organization/ Business Name Arcadis
Mailing Address 126 N Jefferson Street, Suite 400		City Milwaukee	State WI
		ZIP Code 53202	
Phone # (include area code) (414) 276-7742	Fax # (include area code)	Email Ben.Verburg@arcadis.com	

Section 2. Property Information

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

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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).

Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form 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: _____

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

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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: Revised Long-Term Potable Well Sampling Plan, v.4

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 (non-emergency) form is available at:

dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

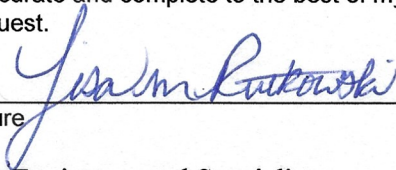
I am the person submitting this request (requester)

I prepared this request for: Scott Wahl

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

9/10/2021

Project Environmental Specialist

Title

(414) 276-7742

Telephone Number (include area code)

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

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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

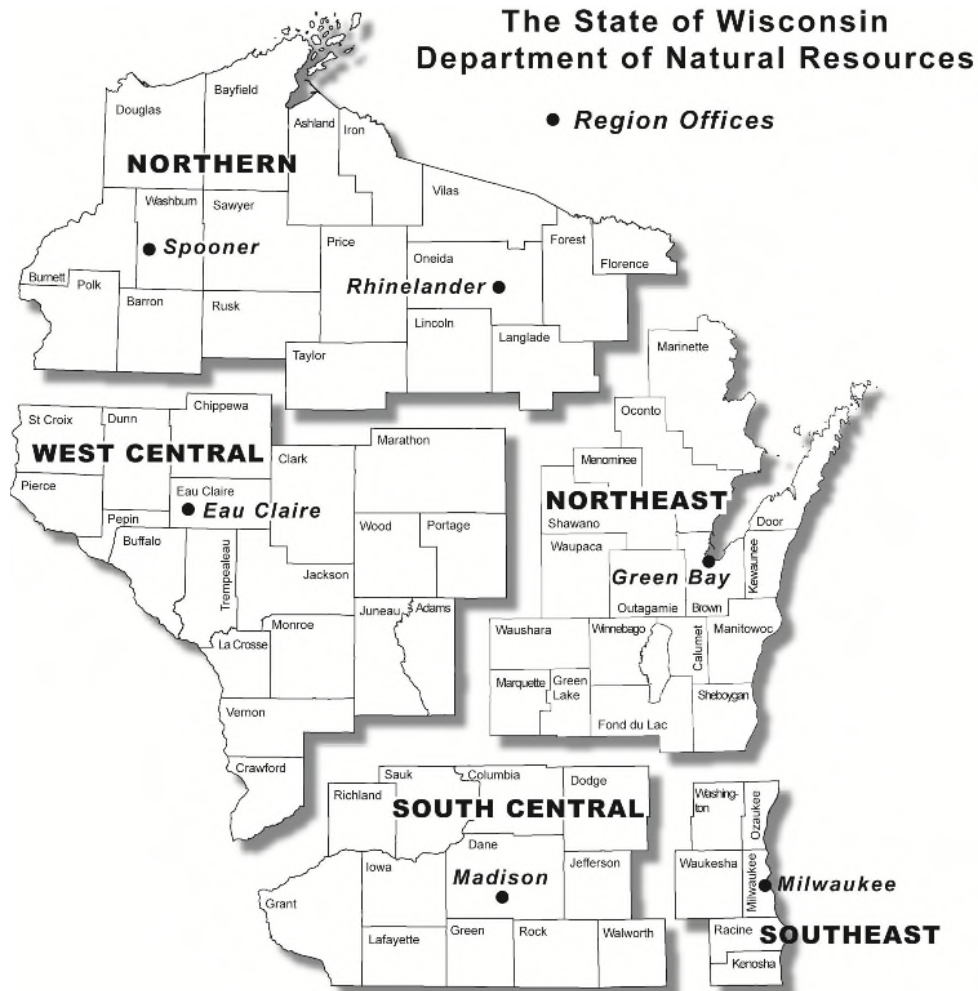
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

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? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Tyco Fire Products LP

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

**Tyco Fire Technology Center
2700 Industrial Parkway South
Marinette, Wisconsin 54143
BRRTS# 02-38-580694**

October 1, 2021

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

**Tyco Fire Technology Center, 2700 Industrial Parkway South
Marinette, Wisconsin 54143 BRRTS# 02-38-580694**

October 1, 2021

Prepared By:

Arcadis U.S., Inc.
126 North Jefferson Street, Suite 400
Milwaukee
Wisconsin 53202
Phone: 414 276 7742
Fax: 414 276 7603

Prepared For:

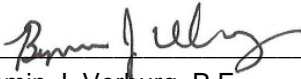
Tyco Fire Products LP
2700 Industrial Parkways South
Marinette, Wisconsin 54143

Our Ref:

30015290, 30015292



Lisa M. Rutkowski
Project Environmental Scientist



Benjamin J. Verburg, P.E.
Principal Engineer



Scott T. Potter
Chief Hydrogeologist

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Version Control

Revision No.	Date Issued	Page No.	Description
0	3/8/2018	All	Initial Release
1	4/20/2018	All	Revisions based on WDNR comment letter dated March 30, 2018
2	4/1/2020	All	Regular update as requested by WDNR
3	3/16/2021	All	Revisions based on WDNR letter dated November 16, 2020
4	10/1/2021	All	Revision based on WDNR comment letter dated June 18, 2021

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Figure

Figure 1. Private Drinking Water Well Sampling Area

Acronyms and Abbreviations

Arcadis	Arcadis U.S., Inc.
COC	chain-of-custody
FOSA	perfluorooctanesulfonamide
FTC	Fire Technology Center
GAC	Granular Activated Carbon
HAL	Health Advisory Level
HDPE	high-density polyethylene
HI	Hazard Index
ID	identification
NEtFOSA	N-ethylperfluorooctanesulfonamide
NetFOSAA	N-ethylperfluorooctanesulfonamidoacetic acid
NEtFOSE	N-ethylperfluorooctanesulfonamidoethanol
ng/L	nanograms per liter
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
POET	point of entry treatment
PTFE	polytetrafluoroethylene
PWSA	private drinking water well sampling area
RL	reporting limit
TOC	total organic carbon
Tyco	Tyco Fire Products LP
USEPA	United States Environmental Protection Agency
WDHS	Wisconsin Department of Health Services
WDNR	Wisconsin Department of Natural Resources

Executive Summary

Arcadis on behalf of Tyco Fire Products LP (Tyco) has prepared this Revised Long-Term Potable Well Sampling Plan (sampling plan) for the Tyco Fire Technology Center (FTC) site located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site). This revised sampling plan addresses and incorporates comments received by Tyco from the Wisconsin Department of Natural Resources (WDNR) on June 18, 2021. This sampling plan outlines the frequency of future sampling events for the Private Well Sampling Program which includes private drinking water wells currently within the private drinking water well sampling area (PWSA) as defined by Tyco. It also outlines the Point of Entry Treatment (POET) System Monitoring Program, a separate program specific to wells that have a POET system installed and maintained by Tyco on their property. This document also provides the rationale for both the Private Well Sampling Program and the POET System Monitoring Program.

While Tyco continues to work with the Town of Peshtigo and other stakeholders toward a long-term drinking water solution for the residents of the Town of Peshtigo within the PWSA, free access to bottled water has been offered to every user of a private drinking water well within the PWSA that responded to outreach efforts to date. By providing bottled water regardless of sampling access or results, Tyco is eliminating the primary potential exposure pathway for per- and polyfluoroalkyl substances (PFAS) to enter the body.

Under this plan, Tyco will continue to sample wells within the Private Well Sampling Program at a frequency determined by the number of samples previously collected from the well and the results of those samples. Sampling frequency can range from quarterly for new wells that have not previously been tested, to biennially (every other year) for wells with 4 or more sampling events with results below Wisconsin Department of Health Services Cycle 11 recommended groundwater standards based on data available.

1 Introduction

On behalf of Tyco Fire Products LP (Tyco), Arcadis US, Inc. (Arcadis) has prepared this *Revised Long-Term Potable Well Sampling Plan* (sampling plan) for the Tyco Fire Technology Center (FTC) located at 2700 Industrial Parkway in Marinette, Wisconsin (the Site). Tyco and Arcadis are conducting Site investigation and monitoring activities under the oversight of the Wisconsin Department of Natural Resources (WDNR). As requested by WDNR, this document provides an update to the Revised Long-Term Potable Well Sampling Plan (Arcadis 2021b) that was approved by WDNR. This sampling plan and future versions, to be submitted every 6 months, will be applicable until a permanent water supply is provided to the defined private drinking water well sampling area (PWSA).

Aqueous film-forming foams have been used at the Site as part of research and development, quality control, and firefighting training activities. Per- and polyfluoroalkyl substances (PFAS) such as perfluorooctanoic acid (PFOA) and/or perfluorooctanesulfonic acid (PFOS) have been present in various formulations of these foams. PFAS has been detected in groundwater at the Site and in off-Site potable wells. Results from private drinking water wells are used to inform residents of their specific groundwater conditions relative to PFAS and are not a source of remedial decision-making data. Borings, piezometers, and wells installed for monitoring purposes are used to identify plume conditions over time. Tyco continues to conduct potable water sampling near the Site.

The U.S. Environmental Protection Agency (USEPA) classifies PFAS as a category of "emerging contaminants". In May 2016, the USEPA issued a drinking water Lifetime Health Advisory Level (HAL) for two PFAS, specifically the individual and combined values of PFOA and PFOS, of 70 nanograms per liter (ng/L, or parts per trillion). In June 2019, the Wisconsin Department of Health Services (WDHS) issued in Cycle 10 a recommended groundwater standard of 20 ng/L for PFOA and PFOS, individually and combined. In November 2020, the list of PFAS compounds was expanded and the WDHS recommended groundwater standards for 18 PFAS compounds including a combined standard for six of these compounds (FOSA [perfluorooctanesulfonamide], NEtFOSE [N-ethylperfluorooctanesulfonamidoethanol], NEtFOSA [N-ethylperfluorooctanesulfonamide], NetFOSAA [N-ethylperfluorooctanesulfonamidoacetic acid], PFOS, and PFOA). While the WDHS Cycle 10 and 11 recommended groundwater standards (hereinafter recommended groundwater standards) are potential future groundwater standards under ch. NR 140 Wisc. Admin. Code, they are included for consideration in this sampling plan for discussion purposes.

In a June 18, 2021 comment letter to Tyco, WDNR requested that Tyco "Incorporate the DHS's Hazard Index (HI) into the evaluation of sampling result." Tyco acknowledged that request in a July 16, 2021 Response to Comments letter that further clarified Tyco would only provide HI analysis for new parcels added to the program that were not previously sampled. This HI methodology rests upon a number of unproven assumptions, including linear dose-responses for each PFAS compound, and that health effects are additive and proportionate. Given the lack of scientific consensus on these points, U.S. EPA has not formally adopted HI through guidance or regulations. While HI analyses have been prepared at the request of the Department, Tyco reserves the right to challenge the validity of the method itself as well as the legal basis for its use.

WDNR also requested that Tyco sample effluent water from point of entry treatment (POET) systems prior to changing the granular activated carbon (GAC) (2021). Tyco monitors effluent results for at least 12 months after installation to develop a conservative maintenance plan based on anticipated breakthrough of PFAS compounds; not exceedances of recommended groundwater criteria. This approach eliminates the need to sample system

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

effluent based on historical results. Additional clarifications related to POET sampling protocols are presented in **Section 2.2** and **Section 3.2**.

2 Potable Well Sampling Summary

2.1 Private Well Sampling Program

A potable well sampling program was initiated in December 2017 and continued quarterly for ten events through December 2020. The Private Well Sampling Program is conducted independent of the POET Monitoring Program described below. Private drinking water wells within the PWSA are in one program or the other. The PWSA is illustrated on **Figure 1**. A list of wells within the Private Well Sampling Program is presented in **Table 1**. A list of wells within the POET Monitoring Program is presented in **Table 2**.

Quarterly sampling within the Private Well Sampling Program was suspended for the spring and summer 2020 events due to COVID-19 but resumed for the fall 2020 event. The summer 2021 quarterly event is ongoing and extends through September 30, 2021. During the previous events, Arcadis sampled a total of 173 potable wells located generally to the southeast of the Site where residents rely on private wells for drinking water. A summary of the most conservative results compared to the WDHS recommended groundwater standard Cycle 11 criteria from the previous sampling events is included in the following list:

- Potable wells sampled through June 2021: 173
- Potable wells analyzed for 36 PFAS compound list: 140
- Potable wells with results above the recommended groundwater standards: 37
- Potable wells with results between reporting limit (RL) and recommended groundwater standards: 47
- Potable wells with results below the RL (non-detect): 89

Bottled water is offered by Tyco to users of the private wells that are within the PWSA regardless of sampling participation or results. The only criteria for being eligible for bottled water within the PWSA is that the tenant has a private drinking water well plumbed to the building that is a primary source of drinking water. Bottled water is managed per the Comprehensive Alternative Water Management Plan submitted to WDNR in March 2020.

2.2 POET Monitoring Program

The POET System Monitoring Program was initiated in February 2018 for potable wells with results above the HAL and was expanded in July 2018 to include potable wells with initial results and confirmed results above the RL. Private drinking water wells with POET systems are part of the POET Monitoring Program, managed independent of wells without POET systems, and are not subjected to the same sampling criteria as wells within the Private Well Sampling Program. Forty-seven POET systems have been installed to date to treat groundwater used as drinking water under this program. A list of these wells is included in **Table 2**. Arcadis has collected POET system samples on a regular basis to confirm the effectiveness of PFAS removal and system operations.

Routine maintenance is conducted on each POET system. Sediment filters are typically replaced every 3 months; UV lights and the quartz sleeves are replaced once every year; and GAC tanks are replaced when initial breakthrough is observed or as appropriate based on a conservative analysis of previous results for the specific POET system over the course of at least 12 months. Those analyses indicate breakthrough varies based on water usage, concentrations of PFAS for each well, and concentration of total organic carbon (TOC). The water available or yield from a driven point well also causes variability in when breakthrough is observed. POET system monitoring data noted just below has been provided to WDNR.

3 Long-Term Sampling Plan

3.1 Potable Wells

It is important to note that all well owners/users within the PWSA have been offered bottled water though not all residents accepted. Those with confirmed results above the laboratory RL for PFOA and/or PFOS have been offered POET systems though not all POET system offers were accepted. This sampling plan takes into consideration the WDHS Cycle 10 and Cycle 11 recommended groundwater standards. The PWSA is roughly defined to the north by University Drive, to the west by County Road B, to the south by Rader Road and to the east by the Bay of Green Bay. A community water system is being planned and designed by Tyco effectively eliminating the drinking water exposure pathway and the need for continued testing of private wells for PFAS. The extent of groundwater contamination will be monitored through a network of monitoring wells and piezometers already in place or planned.

The potable well sampling plan criteria were established based on data collected to date that indicate most wells in the PWSA do not have detections above the reporting limit and all wells were offered bottled water to eliminate the drinking water exposure pathway regardless of sampling results. Results from private drinking water wells are used to inform residents of their specific groundwater conditions relative to PFAS and are not a source of remedial decision-making data. Borings, piezometers, and wells installed for monitoring purposes are used to monitor groundwater quality over time.

3.1.1 New Potable Well Samples

When potable wells are sampled for the first time for PFAS under this program, the wells will be sampled a total of four times in consecutive quarterly events if access is granted by the well owner/user. Based on the results of these four events, subsequent sampling events will occur as follows:

- Semi-annual sampling (every six months) will be offered if concentrations of PFAS remain below the recommended groundwater standards for all events for the first year. If concentrations remain below recommended groundwater standards after the first year of semi-annual sampling (two years from the first sampling event), the potable wells will then be sampled annually. After the second year of annual sampling, if concentrations remain below recommended groundwater standards, the wells will be sampled biennially (every two years).
- Quarterly sampling will continue to be offered for an additional year if the concentrations of PFAS are above recommended groundwater standards. After two years of quarterly sampling, new wells with results above recommended groundwater standards will be sampled annually.

3.1.2 Previously Sampled Potable Wells

Laboratory methods for analyzing samples have evolved over the course of this project. Wells sampled prior to the fall 2020 sampling event were analyzed for less than 36 analytes which makes comparisons to all WDHS Cycle 11 recommended groundwater standards impossible. Results from samples taken that were not evaluated for 36 analytes were compared against WDHS Cycle 11 recommended groundwater standards to the extent

possible with those results reported in the Private Drinking Water Well Sampling Program Annual Summary Reporting (Arcadis 2021d).

Potable wells that have been sampled previously four or more times as part of the ongoing sampling program, or potable wells that have been subject to sampling four or more times using the criteria presented in Section 3.1.1, will be sampled as follows:

- Biennial sampling (every two years) will be conducted if the PFAS concentrations are below WDHS recommended groundwater enforcement standards.
- Annual sampling will be conducted if the PFAS concentrations are above WDHS recommended Cycle 11 criteria for one or more prior events.

Potable wells that have been sampled less than four times will be sampled bi-annually, (every six months) until they reach the four-sampling event threshold.

As noted in **Section 1**, this sampling plan will be updated every six months.

3.2 POET Systems

3.2.1 Proposed POET Maintenance Schedule for Existing POET Systems

Systems installed for less than one year will continue to be sampled on a quarterly basis in order to determine POET system efficiency. After a minimum of one year of monitoring, POET systems will be transitioned to the maintenance program described below. The POET system maintenance program uses sampling data from each POET over the course of at least one year to determine a conservative GAC vessel change out schedule. POET users are not required to forfeit their bottled water service.

Any POET systems with original GAC tanks that have been in operation for a year or more without exhibiting any signs of PFAS break-through will be maintained by replacing the GAC tanks once per year without the collection of additional samples. Over two years' worth of data supports that the following POET systems had non-detect concentrations at the mid-carbon and post-carbon sampling locations over the span of a year or more:

- POET Systems –13, 14, 15, 16, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 40

Any POET systems that have shown PFAS breakthrough between 9 months and 1 year will be maintained by replacing the GAC tanks every 9 months without the collection of additional samples. This applies to the following systems:

- POET Systems – 1, 2, 10, 36

Any POET systems that have shown PFAS breakthrough between six months and nine months will be maintained by replacing the GAC tanks every six months without the collection of additional samples. This applies to the following systems:

- POET Systems – 11, 17, 30, 39

Any POET systems that have shown varying influent or PFAS breakthrough before six months will continue to be monitored on a quarterly basis and the sampling frequency may be increased or decreased based on new results. This applies to the following systems:

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

- POET Systems – 4, 6, 12, 37

Any POET systems that have shown PFAS breakthrough before three months will be maintained by replacing the GAC tanks every two to three months without the collection of additional samples. This applies to the following systems:

- POET Systems – 5, 7, 19

Any POET systems that have not operated for at least a year will be monitored quarterly for at least 12 months to determine the future GAC maintenance schedule, at which point sampling will be discontinued. This applies to the following systems:

- POET Systems – 8, 38, 41, 42, 43, 44, 45, 46, 47

Any POET system that is in operation for less than 12 months because of planned service disruption due to extended vacations or absence for the winter will be winterized and then reinstalled with new GAC upon the homeowner's return without the collection of additional samples. Any POET system that has an unplanned service disruption due to vacancy, death, or home for sale will be winterized and reinstalled when needed without the collection of additional samples. Winterization consists of bypassing the system, removing the GAC tanks and filters, and removing residual water from the system.

- POET systems 3 and 9 have been removed as requested by the owner.

Sediment filters and UV/Quartz maintenance will continue to be changed out based on the schedule defined in Section 2.2.

After the first year of operation, POET systems' influent water will be sampled every two years if the results remain below WDHS recommended standards, and annually if the most recent results are above WDHS recommended standards.

3.2.2 Proposed POET Maintenance Schedule for New POET Systems

New POET systems will be monitored quarterly for one year to determine the GAC maintenance schedule and monitor any fluctuation of potable well results. Sediment filters will continue to be changed out every three months and the UV light and quartz sleeves will continue to be changed out once per year. These timeframes are based on evaluation of data from more than two years of performance monitoring data collected from POET systems within the PWSA.

POET system performance monitoring samples will be collected at the inlet, mid-carbon and outlet locations according to the following schedule:

- Initial Sampling – Upon system installation and start-up
- Month 3 (Week 12) – After 3 months or 12 weeks of system operation
- Month 6 – After 6 months of system operation
- Month 9 – After 9 months of system operation
- Month 12 – After 12 months of system operation.

The future GAC change schedule will be determined based on the data obtained from the sampling activities described in this section. The POET systems will be scheduled for GAC changes without additional sampling based on this data.

3.2.3 GAC Change Schedule

The conservative sampling schedule that was established for the POET program when systems were first installed starting in early 2018 resulted in a large amount of data available to help predict when POET systems would show breakthrough. In addition to analyzing inlet, mid-carbon and outlet samples for PFAS, TOC was collected from the well prior to POET system installation and flow meter readings were collected during each sampling event to determine weekly or monthly water usage. This information as well as the inlet concentrations and regular sampling to identify when initial breakthrough occurred resulted in the ability to reduce the sampling frequency for well-established POET systems and move them to a maintenance only program.

The GAC change schedule was established by looking at all data relevant to each system. The GAC will be changed in every system at least once per year, even if breakthrough was observed two years or more after installation. Systems where breakthrough was observed earlier than 12 months will be changed out more frequently. Section 3.2.1 describes the various scenarios that are relevant to determining the GAC changeout schedule. The observed breakthrough and GAC change frequency for each POET is included in **Table 2**. The GAC changeout schedule is based on when initial breakthrough was observed, not when detections of PFAS exceeded a WDHS recommended ES. This conservative approach to establishing the GAC changeout schedule in conjunction with the offer of bottled water to users of the private wells, eliminates the drinking water exposure pathway.

All outlet samples collected from the POET systems had results below the WDHS recommended ESs, with the exception of one sample. Tyco samples certain POET systems quarterly due to varying levels of PFAS or variances in observed breakthrough. One of those regularly monitored POET systems demonstrated PFOA above the WDHS recommended ES immediately following a GAC change. Upon receiving this result, Tyco immediately replaced the GAC tanks. This POET system continues to be monitored on a quarterly basis.

4 Sample Procedure

The sections that follow provide an overview of the potable well and POET system sample procedures.

4.1 Prior to Sample Collection

Arcadis staff will coordinate a sample date and time with each well's contact person. Upon arrival, Arcadis will provide introductions and let the resident/property owner know the purpose is to collect a potable well sample for PFAS analysis in accordance with previous correspondence provided to them regarding the sampling. Arcadis will request information from the property owner regarding the water system at each property. Information that will be recorded includes presence of water softeners, sediment traps, filters, etc., and the location of these items.

On March 16, 2020, Arcadis and Tyco suspended field sampling operations after the "Safer at Home" executive order by the Governor of Wisconsin and "Social Distancing" guidelines were enacted by the State of Wisconsin and the federal government. Those recommendations were extended by Wisconsin Governor Tony Evers on April 16, 2020 to remain active until at least May 26, 2020. Arcadis contacted the owners who were scheduled to have their drinking water well sampled and canceled the appointments. Arcadis offered to call the owners when sampling resumed to reschedule the appointments.

The toll-free number remained operational throughout the suspension of sampling activities. Homeowners interested in having their private drinking water well sampled could call in to request a call back when sampling resumed. Sampling resumed for the fall 2020 quarterly event and for the POET systems discussed in Section 3.2.1.

Additional activities to be performed and procedures to be followed by the sampling team prior to potable well sample collection include:

- Don a new set of nitrile gloves immediately prior to sampling.
- Do not use gloved hands to subsequently handle papers, pens, clothes, etc., before collecting samples.
- Use the 2-250 milliliter high-density polyethylene (HDPE) bottles that are supplied by the laboratory for each sample location.
- Samples bottle caps must remain on the bottle until immediately prior to sample collection, and the bottle must be sealed immediately after sample collection.

With the resumption of sampling, additional COVID-related precautions were implemented to protect homeowners and the sampling team, which include:

- Sampling team personnel will practice established social distancing protocols when interacting with homeowners.
- Sampling team personnel will don individual protective masks.
- Sampling team personnel will request verbal sampling permission from each of the homeowners and sign the homeowner acceptance, on behalf of the homeowner, of such verbal agreement on the electronic tablet.
- Sampling locations will be prioritized to outdoor spigots, instead of indoor locations, when possible, weather permitting.

4.2 During Sample Collection

Potable water outfalls and taps are likely to vary. If possible, the team will avoid sampling from any taps fitted with Teflon tape or other PFAS-containing materials. Stainless steel and polyvinyl chloride materials are acceptable. The sampling team will collect unfiltered samples from a tap or port, as follows:

- Initiate flow from the water source and allow the system to flush for at least three minutes.
- Collect the sample into the HDPE bottle until the sample bottle is full (leaving slight headspace in the bottle is acceptable).
- Tightly screw on the polypropylene or HDPE cap.

4.3 After Sample Collection

Upon collection, the sample bottles will be placed in a sealed Ziploc® or similar bag. Sample collection information will be recorded including the sample identification (ID) and time of sampling on the sample bottle label, in the field notes, and on the chain-of-custody (COC) form. The COC form will be marked for analysis with a standard turnaround time (approximately two weeks). Samples will be placed in coolers, with enough ice to keep the sample temperature between 0 and 4°C until delivered to the laboratory. Only “wet” ice will be used, with no use of “blue ice” or similar cold storage packets. PFAS sample coolers will be shipped via Federal Express Priority Overnight delivery to:

Sample Receiving
Eurofins TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, California 95605-1500

Samples will be analyzed for the 36 PFAS compounds reportable using Method 537 Modified.

All disposable sampling materials will be treated as single use and disposed appropriately after sampling at each location. Samples from each residence will be kept in their own dedicated cooler with the appropriate quality assurance samples.

4.4 Quality Assurance/Quality Control

Avoiding cross-contamination from PFAS-containing materials during this sampling will be of utmost importance given the very low detection limits for the analyses that will be conducted for these compounds. As such, materials with the potential to contain PFAS will not be used during the sampling (including polytetrafluoroethylene [PTFE] pipe tape, pipe thread pastes that contain PTFE, PTFE sample tubing, food wrappers, water resistant/proof clothing, waterproof field books, etc.)

Sample information, including sample ID and date/time collected, will be recorded on the provided bottle labels and attached to the sample bottles immediately after sealing the bottles. This information also will be recorded on the COC form provided by the laboratory, in a Potable Water Supply Sample Log, and in the sampling team’s field notes. A signed copy of the COC form will be provided to the laboratory whenever a sample cooler is delivered to the laboratory. A copy of each COC form will be kept with the field notes and sample logs.

REVISED LONG-TERM POTABLE WELL SAMPLING PLAN

After receipt from the laboratory, Arcadis will conduct a preliminary data quality review (Level 2 data validation). The sample results will be communicated to well owners/users after completion of the preliminary data quality review, as outlined in the “Project Communication” section below. After completion of the preliminary data quality review, Arcadis will conduct a more comprehensive validation of the data (Level 4 data validation). The timeframe for the Level 4 validation may vary based on the amount of time required for the laboratory to send additional Quality Assurance/Quality Control information to Arcadis, and the number of samples under review. The anticipated timeframe for completion of Level 4 validation is approximately four weeks after receipt of the complete Level 4 data package from the laboratory. If any changes to the reported sampling results become necessary after completion of the Level 4 validation, the well owners/users and WDNR will be notified of those changes.

5 Project Communication

Results letters will be provided to the applicable well owners/users and WDNR within 10 business days of Arcadis receiving results from the laboratory. If the PFAS concentrations at a well were below the WDHS recommended groundwater standard based on data available for past sampling events but are above those criteria for the current sampling event, then a phone call will be placed to the well owner/user within two days of completing the preliminary data quality review for the laboratory results for that sample to alert the owner or tenant of their results and confirm their bottled water status or offer bottled water as appropriate. A comprehensive list of all private wells and their category based on comparison to WDHS recommended groundwater standard for available data is included in **Table 3**.

In a June 18, 2021 comment letter to Tyco, WDNR requested that Tyco “incorporate the DHS’s Hazard Index (HI) into the evaluation of sampling result.” Tyco acknowledged that request in a July 16, 2021 Response to Comments letter that further clarified Tyco would only provide HI analysis for new parcels added to the program that were not previously sampled. This HI methodology rests upon a number of unproven assumptions, including linear dose-responses for each PFAS compound, and that health effects are additive and proportionate. Given the lack of scientific consensus on these points, U.S. EPA has not formally adopted HI through guidance or regulations. While HI analyses have been prepared at the request of the Department, Tyco reserves the right to challenge the validity of the method itself as well as the legal basis for its use.

Tyco will provide WDNR copies of the letters provided to well owners/users within 10 business days of Arcadis receiving results from the laboratory. Letters will include a summary table of the sample analytical results with a comparison to the WDHS recommended groundwater standard, and a copy of the laboratory analytical report, which is consistent with the August 12, 2020 WDNR recommendations. An annual report summarizing the drinking water results from April 1, 2021 through March 31, 2022 will be provided to the WDNR by July 31, 2022. Validated results have been and will continue to be included in the bi-weekly database submission.

6 Closing

This sampling plan presents the approach for sampling private wells and POET systems, bottled water service, and POET system operation and maintenance. Tyco continues to work directly with residents, community leaders and other federal, state and local agencies on this important sampling work, and will continue to keep the community informed of these activities.

7 References

- Arcadis 2018. Revised Long-Term Potable Well Sampling Plan. Tyco Fire Technology Center, 2700 Industrial Parkway, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. Revision 1. April 20, 2018.
- Arcadis 2020a. Revised Long-Term Potable Well Sampling Plan. Tyco Fire Technology Center, 2700 Industrial Parkway, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. Revision 2. April 1, 2020.
- Arcadis 2020b. Potable Well Sampling Program Summary Report. Tyco Fire Technology Center, 2700 Industrial Parkway South, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. June 1, 2020.
- Arcadis 2021a. Response to Wisconsin Department of Natural Resources Revised Long-Term Potable Well Sampling Plan. JCI/TYCO FTC (PFAS), 2700 Industrial Parkway, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. January 12, 2021.
- Arcadis 2021b. Revised Long-Term Potable Well Sampling Plan. Tyco Fire Technology Center, 2700 Industrial Parkway South, Marinette, Wisconsin 54143. BRRTS# 02-38-580694. Revision 3. March 16, 2021
- Arcadis 2021c. Response to Comments – Response to 3rd Revised Long-Term Potable Well Sampling Plan. Tyco FTC PFAS, 2700 Industrial Parkway South, Marinette, WI. BRRTS# 02-38-580694. July 16, 2021.
- Arcadis 2021d. Private Drinking Water Well Sampling Program Annual Summary Report – FTC Sampling Area. Tyco Fire Technology Center, 2700 Industrial Parkway, Marinette, WI 54143. BRRTS# 02-38-580694. August 2021.
- State of Wisconsin. 2020a. Geographical Information System Safer at Home Order. March 24.
- State of Wisconsin. 2020b. Emergency Order #28 Safer at Home Order. April 16.
- Wisconsin Department of Natural Resources. 2020. Response to Revised Long-Term Potable Well Sampling Plan. JCI/TYCO FTC (PFAS), 2700 Industrial Parkway, Marinette, WI. BRRTS Activity #02-38-580694. November 16, 2020.
- Wisconsin Department of Natural Resources. 2021. Response to 3rd Revised Long-Term Potable Well Sampling Plan. JCI/TYCO FTC (PFAS), 2700 Industrial Parkway South, Marinette, WI. BRRTS #02-38-580694. June 18, 2021.

Tables

Table 1
Private Drinking Water Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	# of Quarterly Samples Collected	Most Conservative Category ⁽³⁾	Next Sampling Event ⁽⁴⁾
WS-001	9	< RL	Winter 2023
WS-002	2	< RL	Well no longer in use
WS-004	1	< RL	Well no longer in use
WS-005	10	< RL	Winter 2023
WS-005B	2	< RL	Not a drinking water well
WS-006	4	< RL	Spring 2023
WS-007B ⁽¹⁾	2	> ES	Summer 2021
WS-010	6	< RL	Winter 2023
WS-011	8	< RL	Winter 2023
WS-012	7	< RL	Winter 2023
WS-014	10	< RL	Winter 2023
WS-015	5	RL < ES	Winter 2023
WS-016	7	< RL	Winter 2023
WS-020	8	< RL	Winter 2023
WS-021	2	< RL	Summer 2021
WS-022	8	< RL	Winter 2023
WS-026	9	< RL	Winter 2023
WS-027	6	< RL	Winter 2023
WS-028	4	< RL	Summer 2021
WS-029	8	< RL	Winter 2023
WS-031	10	RL < ES	Winter 2023
WS-033	10	< RL	Winter 2023
WS-034	10	< RL	Winter 2023
WS-035	6	RL < ES	Winter 2023
WS-036	8	> ES	Summer 2021
WS-039	8	< RL	Winter 2023
WS-040	8	RL < ES	Winter 2023
WS-043	7	< RL	Summer 2021
WS-044	10	RL < ES	Winter 2023
WS-045	10	< RL	Winter 2023
WS-046	5	RL < ES	Winter 2023
WS-047	2	< RL	Summer 2021
WS-048 ⁽¹⁾	9	> ES	Winter 2022
WS-050	10	< RL	Winter 2023
WS-051	10	< RL	Spring 2023
WS-055	7	RL < ES	Winter 2023
WS-056	5	< RL	Winter 2023
WS-059	5	RL < ES	Spring 2023
WS-061A	3	< RL	Summer 2021
WS-063	10	< RL	Winter 2023
WS-064	8	RL < ES	Winter 2023
WS-065	10	< RL	Winter 2023
WS-066	8	RL < ES	Winter 2023
WS-069A	8	RL < ES	Winter 2023
WS-069B ⁽¹⁾	8	> ES	Winter 2022
WS-070 ⁽¹⁾	1	> ES	Summer 2021
WS-071	7	RL < ES	Winter 2023
WS-072	10	< RL	Winter 2023

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Table 1
Private Drinking Water Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	# of Quarterly Samples Collected	Most Conservative Category ⁽³⁾	Next Sampling Event ⁽⁴⁾
WS-073	10	< RL	Winter 2023
WS-074	2	RL < ES	Summer 2021
WS-075	10	< RL	Winter 2023
WS-076	3	< RL	Summer 2021
WS-077	6	RL < ES	Winter 2023
WS-078	10	< RL	Winter 2023
WS-079	10	RL < ES	Winter 2023
WS-080	4	< RL	Summer 2021
WS-081	3	< RL	Summer 2021
WS-082	3	< RL	Summer 2021
WS-082B	2	> ES	Not a drinking water well
WS-082C	2	> ES	Not a drinking water well
WS-082D ⁽¹⁾	3	> ES	Summer 2021
WS-083	7	< RL	Winter 2023
WS-084	10	< RL	Summer 2023
WS-085	8	< RL	Winter 2023
WS-086	6	< RL	Summer 2021
WS-087	10	RL < ES	Winter 2023
WS-088	9	< RL	Summer 2021
WS-089	4	< RL	Summer 2021
WS-091	4	< RL	Summer 2021
WS-093	6	RL < ES	Winter 2023
WS-094 ⁽¹⁾	7	RL < ES	Winter 2023
WS-095	3	< RL	Summer 2021
WS-098	6	< RL	Spring 2023
WS-101 ⁽²⁾	3	> ES	Summer 2021
WS-102	9	RL < ES	Winter 2023
WS-103	6	RL < ES	Winter 2023
WS-104	9	< RL	Winter 2023
WS-105	1	< RL	Summer 2021
WS-107	7	RL < ES	Winter 2023
WS-108	9	< RL	Winter 2023
WS-110A	10	< RL	Winter 2023
WS-112	9	< RL	Winter 2023
WS-113	10	< RL	Winter 2023
WS-114	6	< RL	Spring 2023
WS-116	7	< RL	Summer 2023
WS-117	8	< RL	Winter 2023
WS-118A	6	< RL	Winter 2023
WS-118B	5	< RL	Winter 2023
WS-119	10	< RL	Winter 2023
WS-120	7	RL < ES	Winter 2023
WS-122	10	< RL	Winter 2023
WS-123	6	RL < ES	Winter 2023
WS-124 ⁽¹⁾	6	RL < ES	Summer 2021
WS-125	7	< RL	Winter 2023
WS-127	3	< RL	Fall 2021
WS-128	4	< RL	Summer 2021

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Table 1
Private Drinking Water Well Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	# of Quarterly Samples Collected	Most Conservative Category ⁽³⁾	Next Sampling Event ⁽⁴⁾
WS-130	10	< RL	Winter 2023
WS-131	7	< RL	Winter 2023
WS-132	9	< RL	Winter 2023
WS-134	5	< RL	Summer 2021
WS-135	4	RL < ES	Winter 2023
WS-136	6	RL < ES	Winter 2023
WS-137	7	< RL	Spring 2023
WS-138	8	< RL	Winter 2023
WS-139	8	< RL	Summer 2021
WS-140	4	RL < ES	Summer 2021
WS-141	8	< RL	Winter 2023
WS-142	4	RL < ES	Winter 2023
WS-143	6	RL < ES	Spring 2023
WS-144	6	< RL	Spring 2023
WS-145	5	< RL	Spring 2023
WS-146B	4	> ES	Not a drinking water well
WS-147 ⁽²⁾	3	> ES	Summer 2021
WS-148	2	< RL	Abandoned by owner
WS-149	3	< RL	Fall 2021
WS-150	3	RL < ES	Summer 2021
WS-151	5	< RL	Spring 2023
WS-153	7	< RL	Winter 2023
WS-154	5	< RL	Spring 2023
WS-155	3	< RL	Summer 2021
WS-156	7	< RL	Winter 2023
WS-157	6	RL < ES	Winter 2023
WS-158	3	> ES	Summer 2021
WS-159 ⁽¹⁾	3	> ES	Summer 2021
WS-160	4	< RL	Winter 2023
WS-161	3	< RL	Summer 2021
WS-162	1	< RL	Summer 2021
WS-164	1	< RL	Fall 2021

Notes:

⁽¹⁾ = POET offer extended

⁽²⁾ = POET offer declined

⁽³⁾ = Data represents highest historical results from well; data compared against Cycle 11 recommended groundwater standards; not all compounds with recommended criteria were analyzed

⁽⁵⁾ = Assumes no change in results category with Summer 2021 results

Categories current through Spring 2021 Sampling Event

ES = Wisconsin Department of Health Services recommended Enforcement Standard

ID = Identification

< RL = Not detected above the laboratory Reporting Limit

RL = Reporting Limit

Table 2
Private Drinking Water Wells in POET OM&M Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	POET ID	Most Conservative Category ⁽¹⁾	Breakthrough Observed	GAC Change Frequency	Residency Status	Next Maintenance or Sampling Event ⁽²⁾
WS-007A	POET-43	> ES	TBD	TBD		Maintenance and Sampling, October 2021
WS-008	POET-7	> ES	3 months	2-3 months		Maintenance, December 2021
WS-009	POET-26	RL < ES	14 months w/o breakthrough	12 months		Maintenance, December 2021
WS-013	POET-10	RL < ES	9 months w/o breakthrough	TBD	Occasionally winterized	Maintenance and Sampling, October 2021
WS-017	POET-40	RL < ES	15 months w/o breakthrough	12 months		Maintenance, December 2021
WS-018	POET-29	> ES	17 months w/o breakthrough	12 months		Maintenance, December 2021
WS-019	POET-5	> ES	2-3 months	2-3 months		Maintenance, November 2021
WS-023	POET-14	RL < ES	15 months w/o breakthrough	12 months		Maintenance, December 2021
WS-024	POET-11	> ES	8 months w/o breakthrough	TBD	Winterized 4 months each year	Maintenance, December 2021
WS-025	POET-28	> ES	16 months w/o breakthrough	12 months		Maintenance, December 2021
WS-030	POET-31	> ES	18 months w/o breakthrough	12 months		Maintenance, December 2021
WS-032	POET-25	< RL	18 months w/o breakthrough	12 months		Maintenance, October 2021
WS-037	POET-32	> ES	12 months w/o breakthrough	12 months		Maintenance, November 2021
WS-038	POET-19	> ES	2 months, 3 months, 5 months	2-3 months		Maintenance, November 2021
WS-041	POET-46	RL < ES	TBD	TBD		Maintenance and Sampling, December 2021
WS-042	POET-45	RL < ES	TBD	TBD		Maintenance and Sampling, December 2021
WS-049	POET-35	RL < ES	16 months w/o breakthrough	12 months		Maintenance, December 2021
WS-052	POET-2	> ES	11 months, 11 months w/o breakthrough	9 months		Maintenance, November 2021
WS-053	POET-21	RL < ES	18 months w/o breakthrough	12 months		Maintenance, November 2021
WS-054	POET-30	> ES	8 months, 9 months	6 months		Maintenance, October 2021
WS-057	POET-34	> ES	16 months w/o breakthrough	12 months		Maintenance, November 2021
WS-058	POET-1	> ES	12 months, 12 months w/o breakthrough	9 months		Maintenance, December 2021
WS-060	POET-47 ⁽³⁾	RL < ES	TBD	TBD		Maintenance and Sampling, January 2021 ⁽⁴⁾
WS-061B	POET-27	> ES	16 months w/o breakthrough	12 months		TBD; Vacant
WS-062	POET-44	> ES	TBD	TBD		Maintenance and Sampling, December 2021
WS-067	POET-39	RL < ES	7 months w/o breakthrough	TBD		Maintenance and Sampling, December 2021
WS-068	POET-12	> ES	13 months	Observed breakthrough		Maintenance and Sampling, December 2021
WS-090	POET-4	> ES	2 mo, 4 mos, 7 mos w/o breakthrough	Observed breakthrough		Maintenance and Sampling, November 2021
WS-092	POET-22	< RL	15 months	12 months	Occasionally winterized	Maintenance, November 2021
WS-096	POET-6	> ES	4 months, 5 months, 8 months	3 months		Maintenance, December 2021
WS-097	POET-13	RL < ES	18 months w/o breakthrough	12 months		Maintenance, November 2021
WS-099	POET-15	RL < ES	19 months w/o breakthrough	12 months		Maintenance, December 2021
WS-100	POET-24	RL < ES	12 months	12 months		Maintenance, December 2021
WS-106R	POET-37	> ES	14 months w/o breakthrough	Observed breakthrough		Maintenance and Sampling, November 2021
WS-109	POET-17	> ES	6 months, 8 months	6 months		Maintenance, November 2021
WS-111	POET-18	RL < ES	17 months w/o breakthrough	12 months		Maintenance, December 2021
WS-115	POET-20	< RL	18 months w/o breakthrough	12 months		Maintenance, November 2021
WS-121A	POET-16	> ES	15 months w/o breakthrough	12 months		Maintenance, November 2021
WS-121B	POET-36	RL < ES	11 months w/o breakthrough	TBD	Occasionally winterized	Maintenance, November 2021
WS-126	POET-23	< RL	16 months w/o breakthrough	12 months	Occasionally winterized	Maintenance, November 2021
WS-129	POET-38	RL < ES	3 months w/o breakthrough	TBD		Maintenance and Sampling, December 2021
WS-133	POET-33	RL < ES	12 months w/o breakthrough	12 months		Maintenance, October 2021

Table 2
Private Drinking Water Wells in POET OM&M Program
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Well Sample ID	POET ID	Most Conservative Category ⁽¹⁾	Breakthrough Observed	GAC Change Frequency	Residency Status	Next Maintenance or Sampling Event ⁽²⁾
WS-146AR	POET-8	> ES	TBD	TBD		Maintenance and sampling, December 2021
WS-152	POET-42	RL < ES	TBD	TBD		Maintenance and sampling, December 2021
WS-163	POET-41	> ES	TBD	TBD		Maintenance and sampling, December 2021

Notes:

⁽¹⁾ = Data represents highest historical results from well; data compared against Cycle 11 recommended groundwater standards; not all compounds with recommended criteria were analyzed

⁽²⁾ = This program is operated independent of the private drinking water well sampling program

⁽³⁾ = This POET system expected to be installed October 2021

⁽⁴⁾ = Assuming POET installed in October 2021

Effluent from POETs not sampled for 12 months are still eligible for quarterly sampling until 12 months of data has been collected

Categories current through Spring 2021 Sampling Event

ES = Wisconsin Department of Health Services recommended Enforcement Standard

OM&M = Operations, Maintenance and Monitoring

POET = Point of Entry Treatment

ID = Identification

< RL = Not detected above the laboratory Reporting Limit

RL = Reporting Limit

Table 3
Private Drinking Water Well Results By Category - All Private Wells
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Private Wells Not Detected Above the Reporting Limit		Private Wells with Results Between RL and Recommended ES	Private Wells with Results Exceeding the Recommended ES
WS-001	WS-089	WS-009	WS-007A
WS-002	WS-091	WS-013	WS-007B
WS-004	WS-092	WS-015	WS-008
WS-005	WS-095	WS-017	WS-018
WS-005B	WS-098	WS-023	WS-019
WS-006	WS-104	WS-031	WS-024
WS-010	WS-105	WS-035	WS-025
WS-011	WS-108	WS-040	WS-030
WS-012	WS-110A	WS-041	WS-036
WS-014	WS-112	WS-042	WS-037
WS-016	WS-113	WS-044	WS-038
WS-020	WS-114	WS-049	WS-048
WS-021	WS-115	WS-053	WS-052
WS-022	WS-116	WS-055	WS-054
WS-026	WS-117	WS-059	WS-057
WS-027	WS-118A	WS-064	WS-058
WS-028	WS-118B	WS-066	WS-060
WS-029	WS-119	WS-067	WS-061B
WS-032	WS-122	WS-069A	WS-062
WS-033	WS-125	WS-071	WS-068
WS-034	WS-126	WS-074	WS-069B
WS-039	WS-127	WS-077	WS-070
WS-043	WS-128	WS-079	WS-082B
WS-045	WS-130	WS-087	WS-082C
WS-046	WS-131	WS-093	WS-082D
WS-047	WS-132	WS-094	WS-090
WS-050	WS-134	WS-097	WS-096
WS-051	WS-137	WS-099	WS-101
WS-056	WS-138	WS-100	WS-106R
WS-061A	WS-139	WS-102	WS-109
WS-063	WS-141	WS-103	WS-121A
WS-065	WS-144	WS-107	WS-146AR
WS-072	WS-145	WS-111	WS-146B
WS-073	WS-148	WS-120	WS-147
WS-075	WS-149	WS-121B	WS-158
WS-076	WS-151	WS-123	WS-159
WS-078	WS-153	WS-124	WS-163
WS-080	WS-154	WS-129	
WS-081	WS-155	WS-133	
WS-082	WS-156	WS-135	
WS-083	WS-160	WS-136	

Notes on Page 2.

Table 3
Private Drinking Water Well Results By Category - All Private Wells
Revised Long-Term Potable Well Sampling Plan
Marinette, Wisconsin

Private Wells Not Detected Above the Reporting Limit		Private Wells with Results Between RL and Recommended ES	Private Wells with Results Exceeding the Recommended ES
WS-084	WS-161	WS-140	
WS-085	WS-162	WS-142	
WS-086	WS-164	WS-143	
WS-088		WS-150	
		WS-152	
		WS-157	
89		47	37

Notes:

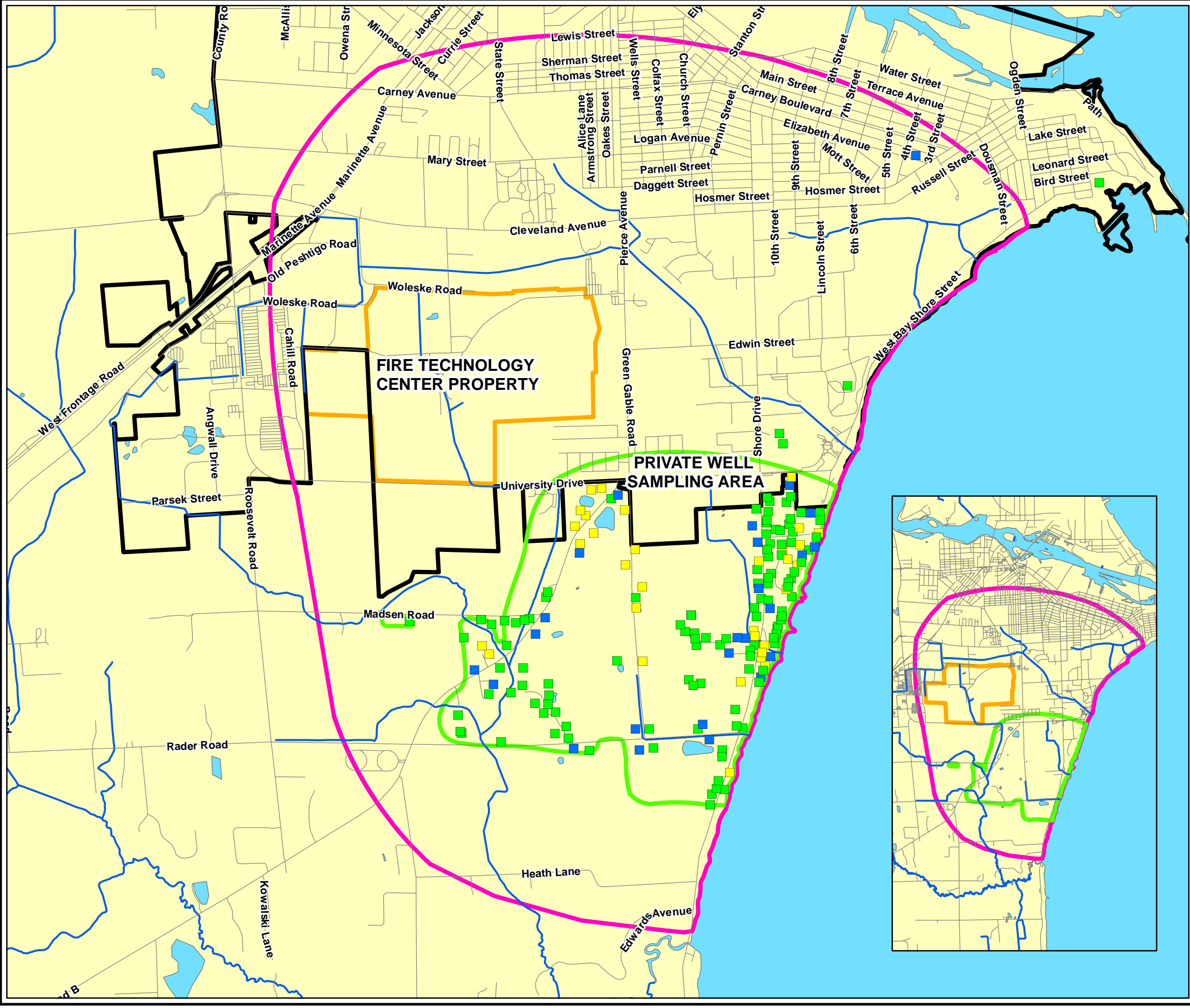
Data compared against Cycle 11 recommended groundwater standards;
 not all compounds with recommended criteria were analyzed
 Categories current through Fall 2020 Sampling Event
 ES = Wisconsin Department of Natural Resources proposed Enforcement Standard
 ND = Not detected above the laboratory Reporting Limit
 RL = Reporting Limit

Table 4
Private Drinking Water Wells Not Sampled for 36 PFAS Compounds
Revised Long-Term Potable Sampling Plan
Marinette, Wisconsin

Well Sample ID	Comments
WS-002	Hospital well, not in use
WS-004	Hospital well, not in use
WS-005B	Not a drinking water well
WS-007B	Well not accessible
WS-021	Non-responsive to outreach
WS-028	Non-responsive to outreach
WS-036	Homeowner declined sample
WS-043	Non-responsive to outreach
WS-047	Non-responsive to outreach
WS-049	Homeowner declined sample
WS-061B	Non-responsive to outreach
WS-070	Non-responsive to outreach
WS-076	Non-responsive to outreach
WS-080	Well not accessible
WS-081	Non-responsive to outreach
WS-086	Non-responsive to outreach
WS-088	House vacant and winterized
WS-089	Non-responsive to outreach
WS-091	Non-responsive to outreach
WS-095	Non-responsive to outreach
WS-105	Sample delayed by FedEx; non-responsive to rescheduling effort
WS-115	Sample delayed by FedEx; non-responsive to rescheduling effort
WS-116	To be sampled in summer 2021 event
WS-124	Non-responsive to outreach
WS-129	Homeowner declined sample
WS-134	Non-responsive to outreach
WS-139	Non-responsive to outreach
WS-140	Non-responsive to outreach
WS-146AR	To be sampled in summer 2021 event
WS-146B	Not a drinking water well
WS-148	Abandoned by owner
WS-155	Non-responsive to outreach
WS-162	Non-responsive to outreach

Figure

T:\ENV\TYCO\MXD\FTCP\WSP\POTABLE WELL SAMPLING AREA.mxd 9/17/2021 1:51:47 PM Last Saved By: MEstifanos



LEGEND:

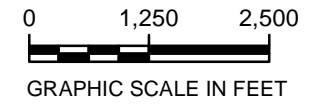
DRINKING WATER WELL LOCATION

- PFAS NOT DETECTED ABOVE RL
- PFAS DETECTION BETWEEN RL AND ES
- PFAS DETECTION GREATER THAN ES
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- PRIVATE WELL SAMPLING AREA
- INVESTIGATION AREA
- WATERBODY
- DITCH/STREAM
- ROAD

NG/L = NANOGRAMS PER LITER
 ES = WDHS RECOMMENDED ENFORCEMENT STANDARD
 RL = REPORTING LIMIT
 WDHS = WISCONSIN DEPARTMENT OF HEALTH SERVICES
 WDNR = WISCONSIN DEPARTMENT OF NATURAL RESOURCES

9/17/2021

- NOTES:**
1. THE DATA REFLECTED IS THE HIGHEST VALUE DETECTED FROM THE VARIOUS EVENTS THROUGH SPRING 2021.
 2. WELL LOCATIONS ARE APPROXIMATE
 3. DATA REPRESENTS HIGHEST HISTORICAL RESULTS FROM WELL; DATA COMPARED AGAINST CYCLE 11 PROPOSED GROUNDWATER STANDARDS; NOT ALL COMPOUNDS WITH PROPOSED CRITERIA WERE ANALYZED.



TYCO FIRE PRODUCTS LP
 MARINETTE, WISCONSIN

**PRIVATE DRINKING WATER
 WELL SAMPLING AREA**

ARCADIS | **FIGURE 1**

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