

From: Dillon Plamann <DPlamann@fehr-graham.com>
Sent: Thursday, March 5, 2020 11:11 AM
To: Schultz, Josie M - DNR; Matt Dahlem
Subject: RE: PFAS sampling SIWPs
Attachments: 20-185 - Signed 4400-237.pdf

Hi Josie,

Attached is Form 4400-237 for Bay Towel. As we spoke about on the phone, the \$700 check was sent the Denise for Bay Towel.

If you have any other questions please let us know. Thanks!

DILLON PLAMANN | Project Hydrogeologist
Fehr Graham | Engineering & Environmental

909 North 8th Street, Suite 101
Sheboygan, WI 53081
P: 920.453.0700
C: 920.946.2407
fehr-graham.com

From: Schultz, Josie M - DNR <josie.schultz@wisconsin.gov>
Sent: Thursday, March 05, 2020 10:39 AM
To: Dillon Plamann <DPlamann@fehr-graham.com>; Matt Dahlem <mdahlem@fehr-graham.com>
Subject: RE: PFAS sampling SIWPs

Hi Dillon,

I left you a voicemail a little bit ago asking for some clarification regarding the SIWPs when you have a chance.

Form 4400-237 was only filled out for Tidy Cleaners & Laundry, and had the \$700 fee checked. The \$700 check (#104495) was attached to the paper copy of the Bay Towel SIWP, which didn't have a fee review when submitted via the portal.

If you would like a fee review for Bay Towel, please fill out Form [4400-237](#) (can be sent to me via email), and submit a check for \$700. Also, please let me know which site you would like this check (#104495) to be attached to.

Thanks!
Josie

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Josie M. Schultz

Hydrogeologist – Northeast Region Remediation and Redevelopment Team

Wisconsin Department of Natural Resources

2984 Shawano Avenue, Green Bay, WI 54313-6727

Phone: 920-662-5424

Cell: 920-366-5685

Josie.Schultz@Wisconsin.gov



dnr.wi.gov



From: Dillon Plamann <DPlamann@fehr-graham.com>

Sent: Thursday, March 5, 2020 9:41 AM

To: Matt Dahlem <mdahlem@fehr-graham.com>; Schultz, Josie M - DNR <josie.schultz@wisconsin.gov>

Subject: RE: PFAS sampling SIWPs

Hi Josie,

There should be a check for both Bay Towel and Tidy Cleaners, and we would like the fee review for both SIWPs.

Thank you! Sorry for the mix up!

DILLON PLAMANN | Project Hydrogeologist
Fehr Graham | Engineering & Environmental

909 North 8th Street, Suite 101

Sheboygan, WI 53081

P: 920.453.0700

C: 920.946.2407

fehr-graham.com

From: Matt Dahlem <mdahlem@fehr-graham.com>

Sent: Thursday, March 05, 2020 7:49 AM

To: Schultz, Josie M - DNR <josie.schultz@wisconsin.gov>

Cc: Dillon Plamann <DPlamann@fehr-graham.com>

Subject: RE: PFAS sampling SIWPs

Dillon, can you answer Josie's question please?

MATT DAHLEM, PG | Branch Manager
Fehr Graham | Engineering & Environmental

909 North 8th Street, Suite 101

Sheboygan, Wisconsin 53081

P: 920.453.0700

fehr-graham.com

From: Schultz, Josie M - DNR <josie.schultz@wisconsin.gov>
Sent: Thursday, March 5, 2020 7:17 AM
To: Matt Dahlem <mdahlem@fehr-graham.com>
Subject: PFAS sampling SIWPs

Good morning Matt,

I received the paper copies of the SIWPs for both Bay Towel and Tidy Cleaners yesterday. The check was included in the envelope with the SIWP for Bay Towel, and I just wanted to confirm that it's Tidy Cleaners that you want the fee review on before I have Denise enter it into BRRTS.

Thanks!
Josie

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Josie M. Schultz

Hydrogeologist – Northeast Region Remediation and Redevelopment Team

Wisconsin Department of Natural Resources

2984 Shawano Avenue, Green Bay, WI 54313-6727

Phone: 920-662-5424

Cell: 920-366-5685

Josie.Schultz@Wisconsin.gov



dnr.wi.gov



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 Butz	First John	MI	Organization/ Business Name Bay Towel
Mailing Address 2580 South Broadway			City Ashwaubenon
			State WI
			ZIP Code 54304
Phone # (include area code) (920) 497-2000		Fax # (include area code)	Email jbutz@baytowel.com

The requester listed above: (select all that apply)

- | | |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <input checked="" type="checkbox"/> Is currently the owner | <input type="checkbox"/> Is considering selling the Property |
| <input type="checkbox"/> Is renting or leasing the Property | <input type="checkbox"/> Is considering acquiring the Property |
| <input type="checkbox"/> Is a lender with a mortgagee interest in the Property | |
| <input type="checkbox"/> 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 Butz	First John	MI	Organization/ Business Name Tidy Cleaners & Laundry
Mailing Address 2580 South Broadway			City Ashwaubenon
			State WI
			ZIP Code 54304
Phone # (include area code) (920) 497-2000		Fax # (include area code)	Email jbutz@baytowel.com

Environmental Consultant (if applicable)

Contact Last Name Dahlem	First Matt	MI	Organization/ Business Name Fehr Graham
Mailing Address 909 N. 8th Street, Suite 101			City Sheboygan
			State WI
			ZIP Code 53081
Phone # (include area code) (920) 453-0700		Fax # (include area code)	Email mdahlem@fehr-graham.com

Section 2. Property Information

Property Name Bay Towel			FID No. (if known) 405044090	
BRRTS No. (if known) 02-05-237064		Parcel Identification Number 15-23		
Street Address 501 South Adams Street			City Green Bay	State WI
			ZIP Code 54301	
County Brown	Municipality where the Property is located <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Green Bay	Property is composed of: <input checked="" type="radio"/> Single tax parcel <input type="radio"/> Multiple tax parcels	Property Size Acres 1	

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

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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).

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

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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 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/Igu.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: PFAS Site Investigation Work Plan

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: Mr. John Butz
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.

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

Form 4400-237 (R 12/18)

Page 5 of 6



March 5, 2020

Signature

Date Signed

Project Hydrogeologist

(920) 453-0700

Title

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>.

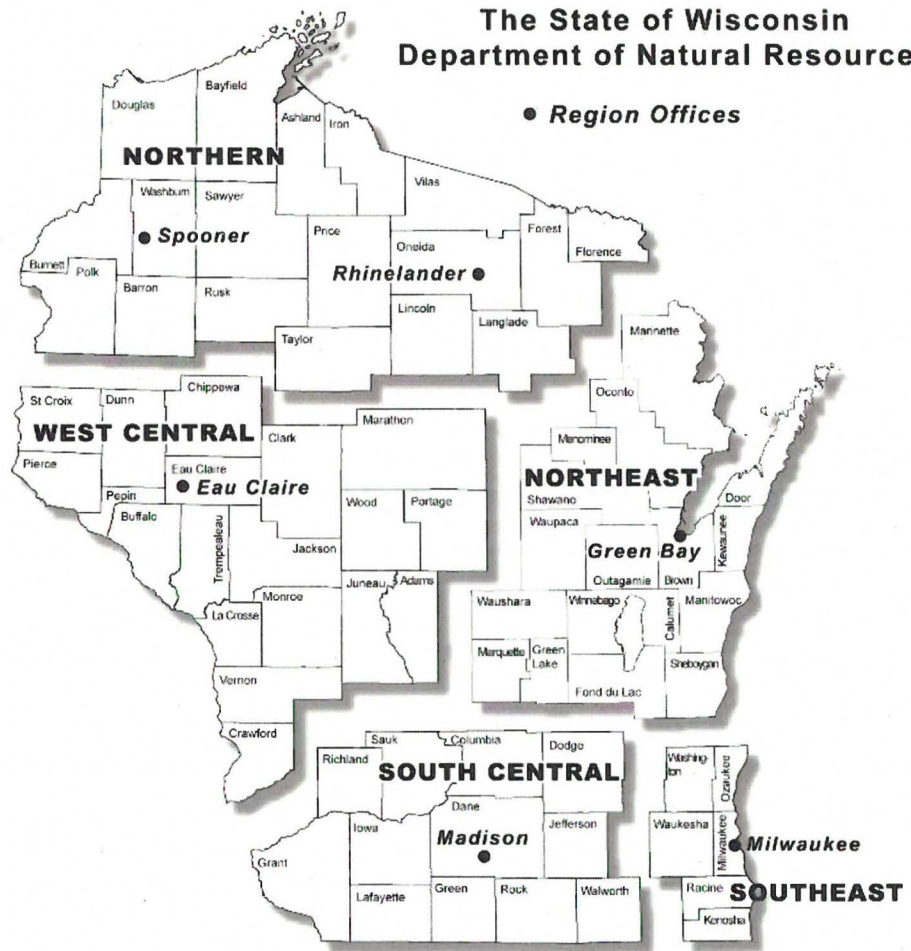
DNR NORTHERN REGION
Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

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
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		

PFAS SITE INVESTIGATION WORK PLAN

Bay Towel
501 S. Adams Street
Green Bay, WI 54301

Project No.: 20-185
BRRTS # 02-05-237064
FID # 405044090

February 28, 2020



909 N. 8th Street, Suite 101

Sheboygan, Wisconsin 53081

Prepared for:

Ms. Josie Schultz

Wisconsin Department of Natural Resources

Department of Remediation and
Redevelopment

2984 Shawano Avenue

Green Bay, Wisconsin 54313-6727

www.fehr-graham.com

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Figures

Figure 1 - Groundwater Chemistry June 28, 2019

Appendices

Appendix A - Pace Analytical PFAS Field Sampling Guide

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I, Matt Dahlem, PG, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



Matt Dahlem, PG
Branch Manager

February 28, 2020

Date



1.0 INTRODUCTION

Bay Towel (Site) received a letter from the Wisconsin Department of Natural Resources (WDNR) on January 2, 2020, stating that the Bay Towel site has been identified as a potential source for per- and polyfluoroalkyl substances (PFAS).

This Site has conducted dry-cleaning and fabricare operations at the facility from 1953 to 1989. An open contamination case with the WDNR's Remediation and Redevelopment Program titled "Bay Towel - Solvent Investigation" is tracked as Bureau of Remediation and Redevelopment Tracking System (BRRTS) #02-05-237064. Soil and groundwater contamination resulted from a discharge of chlorinated volatile organic compounds (CVOCs). The use of PFAS has been associated with dry-cleaning and fabricare operations both nationally and in Wisconsin; this Site may be a source of PFAS contamination.

This Site Investigation Work Plan (SIWP) presents available information on whether any products containing PFAS were used in any process services, the duration of PFAS use, the type of PFAS used, and any areas of the site where PFAS may have been used, stored, or discarded. The SIWP also includes a groundwater sampling program for evaluating PFAS compounds at the site.

1.1 Contacts

The project contacts are as follows:

Responsible Party:

Mr. John Butz
Bay Towel
P.O. Box 12115
2580 S. Broadway Avenue
Ashwaubenon, WI 54304
920.497.2000
jbutz@baytowel.com

Regulatory Project Manager:

Ms. Josie Schultz
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
920.662.5424
josie.schultz@wisconsin.gov

Consultant:

Mr. Matt Dahlem, PG
Fehr Graham
909 N. 8th Street, Suite 101
Sheboygan, WI 53081
920.453.0700
mdahlem@fehr-graham.com

Laboratory:

Mr. Chris Hyska
Pace Analytical Services
1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920.469.2436

1.2 Site Location

The Site is located at 501 S. Adams Street in Green Bay, Wisconsin. The Site is bounded on the southeast and southwest by vacant lots, to the northwest by S. Adams Street and a fire station, and to northeast by Chicago Street and a commercial building.

The site is in Brown County in the City of Green Bay, Wisconsin at the NW ¼ of the SE ¼ of Section 36, T24N, R20E. The Wisconsin Transverse Mercator coordinates for the release location from the WDNR BRRTS on the web are 677549 X and 450271 Y.

The site elevation is approximately 590-feet above mean sea level and the ground surface slopes slightly to the north.

1.3 Site Description and History and PFAS Use at the Site

The approximately 1.33 acre site is located on the south corner of S. Adams Street and Chicago Street. The parcel is zoned as D1 (Downtown One) by the City of Green Bay.

Historically, prior to the dry-cleaning structure, the property was developed with residences and was later occupied by a post office. The Bay Towel building was constructed in 1953, where dry-cleaning operations commenced until 1983. The building was vacated in 1989 following a building fire. The building interior was gutted of offices and most interior walls but remained functional. The building was used for storage and parking by a few nearby businesses in recent years, until demolition in 2016 prior to the large soil excavation.

Following the dry-cleaning building demolition in 2016, the property has no structures and serves as a gravel parking lot.

1.4 Available Information on PFAS Use at the Site

Information about dry cleaning chemical use at the Site was shared with Fehr Graham by Mr. John Butz. The site has not been used by Bay Towel for nearly 31 years but Mr. Butz was able to provide a brief history of chemical use and chemical storage information dating back to 1953. The following summarizes the use of PFAS at the site:

- The building was constructed in 1953, with initial dry-cleaning operations using Stoddard solvents (“TrucLeen”) in three underground storage tanks (USTs) that were

located immediately adjacent to the building's southeast wall. The three Stoddard solvent USTs were removed in approximately 1988.

- In the early 1960's, the Stoddard solvents were replaced with a perc (tetrachloroethene - PCE) to continue dry-cleaning operations. The perc was stored in an aboveground storage tank (AST) located immediately adjacent to the building's south corner, just south of the Stoddard solvents tanks. Dry-cleaning solvent was run into the building through the wall and used in machines located in the adjacent room.
- Dry-cleaning operations ceased at the Site in 1983 and the building was vacated in 1989 following a building fire. The building interior was gutted of offices and most interior walls but remained functional.

In an attempt to provide background information on the use of PFAS at the Site, Fehr Graham has reviewed available information on the general use of PFAS at dry-cleaning facilities, on a scale similar to that of Bay Towel. The following provides details on the information reviewed:

- Historically, the first widely used solvents in the dry-cleaning industry were petroleum-based solvents, used as early as 1855, followed by Stoddard solvent (white spirit). Both products are highly flammable and explosive, which lead to the widespread use of chlorinated solvents to replace these due to the more strict regulations imposed on the industry from the many fires and explosions occurring at dry-cleaning facilities. These highly flammable substances were phased out starting circa 1930 and were replaced by those containing PCE, which the industry calls "perc," as well as trichloroethane (TCE). PCE is a highly stable substance, which volatilizes, and is nonflammable, making it a desirable dry-cleaning agent, as well as a safer option for facilities to use in their processes. Due to the molecular structure, the nonflammable nature, and the highly lipophilic characteristics of the PCE compounds generally used in dry-cleaning detergents, these are suspect to contain PFAS-related compounds that should fall under the same requirements of the new PFAS emerging contaminants listed, including the requirements of the sampling guidance document included in this report (Appendix A).
- Due to the limited amount of product-specific information used at the Site, these products shall be considered and sampled as being included in the class of emerging contaminants falling under the PFAS class of chemicals.
- Both products provided by Mr. Butz, historically having regular use at the facility, including regular process use (diffusion/dispersion via surface water) as well as transport possibilities (dispersion via air emissions) and disposal considerations (infiltration to soils and transformation of precursors via biotic-abiotic interaction) (USEPA CLU-IN, PFASs, 2019), and being reported as in-use throughout the history of the facility as a drycleaner (circa 1953), shall be treated as inclusions to the PFAS sampling plan, and should be handled as such, as well as considered when determining future remedial activities or data analysis of trends or defining and characterizing "plumes" of these and the studied co-contaminants (PCE, TCE, CVOCs, etc.) seen at this site (Merina et al 2016).

2.0 GROUNDWATER SAMPLING PROGRAM AND SCOPE

Sampling of the groundwater will be performed for laboratory analysis of PFAS at three source locations at the Site, SMW-1 (inside former building), MW-2R (inside former building), and MW-3R (former dumpster location). Per conversations with the WDNR, sampling in this manner is sufficient to satisfy Wis. Admin. Code § NR 716.07 (4) for this Site. Monitoring well locations and most current chemistry (June 2019) is shown on Figure 1.

The proposed investigation consists of the following tasks:

1. Project Management
2. Field Investigation: Groundwater Sampling
3. Data Evaluation, Interpretation, and Letter Report

Depending on the findings, there may be a need for additional phases of investigation to define the site conditions. More than one round of groundwater monitoring may prove necessary.

2.1 Project Management and Correspondence and SIWP Submittal to WDNR

Project management and correspondence with Bay Towel and the WDNR Project Manager will be completed.

Also under this task are project management duties, including completion of occasional correspondence and status updates to the WDNR.

This document serves as the SIWP, which will be submitted to the WDNR project manager for review and input. A formal WDNR review of the SIWP has been requested. Slight adjustments to the scope may be informally discussed via phone calls or email during the review process. Since a formal agency review and response is expected, a \$700 WDNR review fee will be submitted with the SIWP. Upon agreement of the SIWP from the WDNR, the field work will be initiated.

2.2 Field Investigation: Groundwater Sampling

At the time of this SIWP, WDNR methods and guidance are not available for sampling groundwater for PFAS. Fehr Graham has been provided a “PFAS Field Sampling Guide” by Pace Analytical Services (Pace) for general guidance. A copy of this guide is included in Appendix A.

Due to the potential presence of PFAS in common consumer products and in equipment typically used to collect groundwater samples, as well as the need for very low reporting limits, special handling and care must be taken when collecting samples for PFAS analysis to avoid sample contamination.

If groundwater is sampled for PFAS in conjunction with sampling for other parameters, all PFAS samples will be collected prior to any other parameters. All downhole equipment (water level indicator, YSI multiparameter probe) will be disinfected with Alconox® between wells.

Each groundwater sample will be collected in High density polyethylene or Polypropylene laboratory containers, using new disposable nitrile gloves, a peristaltic pump, and silicon tubing.

Additional practices and clothing/personal protective equipment choices that will be followed during PFAS sample collection include:

- Use of loose paper (non-water resistant)
- Use of Aluminum field clipboards
- Use of sharpies and pens for field notes
- Well-laundered clothing, defined as clothing that has been washed six or more times after purchase, made of synthetic or natural fibers (preferable cotton)
- Avoidance of fabric softener
- Polyurethane or polyvinyl (PVC) boots
- Use of only natural sunscreens or insect repellents
- Avoidance of cosmetics, moisturizers, hand creams, or other related products as part of personal cleaning routine the morning of sampling

Collected sample bottles will be placed in individual sealed plastic bags separate from all other sample parameter bottles. Samples will be brought directly to the lab in a cooler containing ice (no chemical ice packs). Laboratory analysis of PFAS will include the 36-compound list requested by the WDNR using Environmental Protection Agency Method 537M with Isotope Dilution.

2.3 Data Evaluation, Interpretation, and Reporting

After evaluation of the groundwater laboratory analytical results, a formal letter report including tables and figures will be submitted to Bay Towel and the WDNR summarizing the PFAS assessment conducted at the Site.

Comments will be made by the WDNR on the need for additional actions. If appropriate, the WDNR will recommend no further action regarding the assessment of PFAS at the Site.

3.0 REFERENCES

Merino, N., et al. 2016. "Degradation and removal methods for perfluoroalkyl and polyfluoroalkyl substances in water". *Environmental Engineering Science* 33(9):615-649.

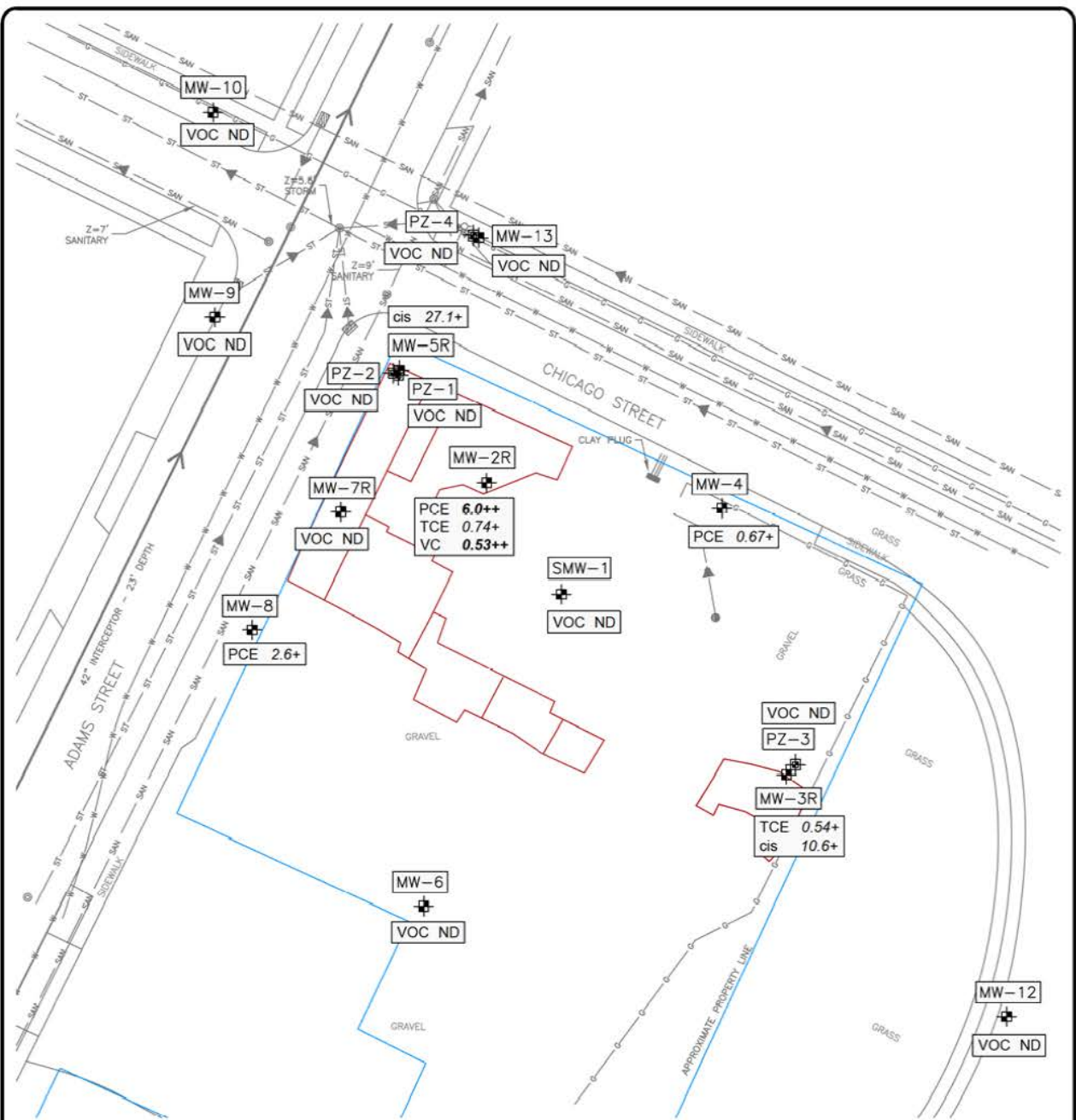
"Per- and Polyfluoroalkyl Substances (PFASs), Remediation Technologies". November 8, 2019. United States Environmental Protection Agency Contaminated Site Clean-Up Information. [https://clu-in.org/contaminantfocus/default.focus/sec/Per-_and_Polyfluoroalkyl_Substances_\(PFASs\)/cat/Remediation_Technologies/](https://clu-in.org/contaminantfocus/default.focus/sec/Per-_and_Polyfluoroalkyl_Substances_(PFASs)/cat/Remediation_Technologies/)

"Site Investigation Scoping: Identifying Contaminants of Concern". Wis. Stat. 292.63; Wis. Admin. Code NR 747 (September 16, 2019): RR-19-0101-D.

Figures

Figure 1

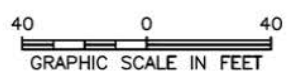
Groundwater Chemistry June 28, 2019



LEGEND

- MONITORING WELL
- PIEZOMETER
- SOIL EXCAVATION (FEHR GRAHAM 2018)

- PCE TETRACHLOROETHENE (ug/L)
- TCE TRICHLOROETHENE (ug/L)
- cis cis-1,2-DICHLOROETHENE (ug/L)
- VC VINYL CHLORIDE (ug/L)
- ND NO DETECT
- DBS DETECTIONS BELOW STANDARDS
- VOC VOLATILE ORGANIC COMPOUNDS
- ITALICS+* EXCEEDS NR140 PREVENTIVE ACTION LIMIT
- BOLD++** EXCEEDS NR140 ENFORCEMENT STANDARD
- BOLDITALICS++** EXCEEDS BOTH ES & PAL



FEHR GRAHAM ENGINEERING & ENVIRONMENTAL
 BAY TOWEL-SOLVENT INVESTIGATION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 DRWN: MKH DATE: 10/21/15 APPD: KE

TITLE: **GROUNDWATER CHEMISTRY**
JUNE 28, 2019
 BRRTS: 02-05-237064
 JOB NO.: 16-1304
 PLOT DATE: 7/8/19

Appendices

Appendix A

Pace Analytical PFAS Field Sampling Guide

PFAS Field Sampling Guide



Due to the potential presence of Per- and Polyfluoroalkyl Substances (PFAS) in common consumer products and in equipment typically used to collect soil, groundwater, surface water, sediment, and drinking water samples, as well as the need for very low reporting limits, **special handling and care must be taken when collecting samples for PFAS analysis to avoid sample contamination.**

Best Practices

- Wash hands and use new nitrile gloves for each sample collected
- Groundwater, surface water, or drinking water samples should not be filtered as the glass fiber on the filter can potentially absorb PFAS
- Collect the PFAS sample first, prior to collecting samples for any other parameters into any other containers; this avoids contact with any other type of sample container, bottles or package materials
- Do not place the sample bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap
- When the **labeled** sample is collected, place the samples in an individual sealed plastic bag separate from **all** other sample parameter bottles
- Samples must be chilled during shipment and should arrive at the lab at $<6\text{ C } \pm 2$

Field Reagent Blanks (FRB) - When sampling for PFAS, it is recommended that field reagent blanks be collected during sampling to check for residual PFAS during the sample collection process. The purpose of the FRB is to ensure that PFAS measured in the field samples were not inadvertently introduced into the sample during sample collection/handling.

Analysis of the FRB is required only if a field sample contains a method analyte or analytes at or above the MRL. The FRB is processed, extracted, and analyzed in exactly the same manner as a field sample. FRBs include a container filled with preserved water and an empty unpreserved container (per EPA methodology). To collect the FRB, simply pour the preserved water into the empty unpreserved container at the time a sample is collected in the field.

FRBs are required by EPA Method 537, but the number of FRBs to collect (for each site, for each representative sample, or not at all) is at the discretion of the customer and/or regulator overseeing the project.

SAMPLE COLLECTION

Matrix	Container	Preservative	Method	Notes
Drinking Water	2 x 250 ml HDPE or PP	Trizma	EPA Method 537 or EPA Method 537M	Trizma is a buffer and removes free chlorine.
Groundwater, surface water, waters	2 x 250 ml HDPE or PP	none	EPA Method 537M	
Effluent	2 x 250 ml HDPE or PP	Trizma	EPA Method 537M	Finished samples may require Trizma.
Soil, sediment, bio-solids	1 x 250 ml (or 4 ounce) HDPE or PP	none	EPA Method 537M	

Sample extraction = 14 days Sample analysis = 28 days



Best Practices



What to Avoid

Sample Container Items

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • HDPE or Polypropylene (PP) • Lined or unlined HDPE or polypropylene caps | <ul style="list-style-type: none"> • No glass or LDPE containers • No Teflon™-lined caps |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|

Field Equipment

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • High density polyethylene (HDPE) or polypropylene materials • Silicon tubing • Loose paper (non-water resistant) • Aluminum field clipboards or Masonite • Sharpies, pens • Regular Ice | <ul style="list-style-type: none"> • No Teflon™ containing materials • No Teflon™ tubing • No waterproof field books • No plastic clipboards, binders, or spiral notebooks • No Post-It Notes • No chemical (blue) ice packs |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Field Clothing and Personal Protection Equipment

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Well-laundered clothing, defined as clothing that has been washed six or more times after purchase, made of synthetic or natural fibers (preferable cotton) • No fabric softener • Cotton Clothing • Boots made with polyurethane and polyvinyl chloride (PVC) • Sunscreens – All Organic Natural Sunscreen, that are “free” or “natural” Check the label. Insect Repellents – Various natural one, DEET, check the label | <ul style="list-style-type: none"> • No new clothing or water resistant, waterproof, or stain-treated clothing, clothing containing Gore-Tex™ • No clothing laundered using fabric softener • No Tyvek® • No boots containing Gore-Tex™ • No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Field Equipment Decontamination Items

- | | |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <ul style="list-style-type: none"> • Alconox® and/or Liquinox® | <ul style="list-style-type: none"> • No Decon 90 |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------|

Food Items

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Bottled water and hydration drinks (i.e. Gatorade® and Powerade®) to be brought and consumed only in the staging area | <ul style="list-style-type: none"> • No food and drink, with exceptions hydrating items listed on the left |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|

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