RE: Town Board Meeting 3/19/24

Sellwood, Alyssa A - DNR <alyssa.sellwood@wisconsin.gov>

Thu 3/14/2024 2:47 PM

To:Town of Peshtigo Chair <topchair@townofpeshtigo.org>

Good Afternoon Jennifer - The town residents may be interested in some recent updates we have received from JCI/Tyco, which I have summarized and provide links to below.

- JCI/Tyco provided a quarterly update on the status of installation of deep wells.
- JCI/Tyco provided a letter documenting the final installed locations of surface water advisory signs.
- JCI/Tyco submitted the 2023 Surface Water Foam Characterization Report.

Alyssa Sellwood
Phone: 608-622-8606
Alyssa.Sellwood@wisconsin.gov

From: Town of Peshtigo Chair <topchair@townofpeshtigo.org>
Sent: Tuesday, March 12, 2024 1:19 PM
To: Sellwood, Alyssa A - DNR <alyssa.sellwood@wisconsin.gov>
Subject: Town Board Meeting 3/19/24

Hi Alyssa,

We have a board meeting a week from today if you have any updates for the Town Board and residents 🙂

With appreciation,
Jennifer Friday
Town of Peshtigo Chairperson

Alyssa Sellwood
Complex Sites Project Manager, Remediation and Redevelopment Program
State of Wisconsin Department of Natural Resources
101 South Webster Street
Box 7921
Madison, WI 53707-7921

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

Date: March 1, 2024
Our Ref: 30168807
Subject: Deep Aquifer Bedrock Well Design –
Quarterly Deep Private Well Update
Tyco Fire Technology Center, Marinette, WI
BRRTS# 02-38-580694

Dear Ms. Sellwood,

On behalf of Tyco Fire Products LP (Tyco), Arcadis U.S., Inc. (Arcadis) prepared this Quarterly Deep Private Well Update in response to the Wisconsin Department of Natural Resources (WDNR) letter dated November 17, 2023. This November 2023 WDNR letter commented on the submittal of a quarterly deep private well update starting in February 2024 and lasting through the final deep well installations.

To fulfill the WDNR request, Arcadis is providing the current deep private well installation status update regarding the Potable Well Sampling Area (PWSA). This includes the information requested within the November 2023 WDNR letter.

Tyco continues to investigate per- and poly-fluoroalkyl substances (PFAS) potentially related to the Tyco Fire Technology Center located at 2700 Industrial Parkway South in Marinette, Wisconsin (the Site; **Figure 1**).

Continued Efforts

These attachments support deep wells as a permanent drinking water solution in the PWSA. Tyco continues to install private deep bedrock wells as a drinking water solution for neighbors that request to participate in the program. At the time of this Memo, Tyco has successfully completed private replacements for 28 wells (**Table X.4)** and has agreements to install 84 additional wells.

Tyco also installed 4 deep bedrock sentinel wells to monitor water quality in the aquifer. A report on the construction and sampling of those wells will be provided under separate cover.

The next deep private residential quarterly update will be submitted in second quarter of 2024.

Sincerely,
Arcadis U.S., Inc.

Matt Coleman
Project Communications Manager

CC. Denice Nelson, JCI
Scott Wahl, JCI

Enclosures:
Table X.4 - LTDW Deep Well Installation Progress Update
Figure 1

Table X.4
LTDW Deep Well Installation Progress Update
Tyco Fire Products LP
Marinette, Wisconsin

WI Unique Well ID	Parcel Number	House Number	Street Name	Previous Well ID	Replacement Well ID	Well Depth (ft bgs)	Retrofit Liner[1]	Well Replacement Date	Sampling Date #1	Sampling Date #2	Sampling Date #3
AAW650	024-02229.000	N2881	Shore Drive	WS-072	WS-072R	562	N	12/6/2022	12/12/2022	1/20/2023	3/21/2023
AAW649	024-02253.001	N2713	Shore Drive	WS-132	WS-132R	542	N	12/5/2022	12/12/2022	1/27/2023	6/20/2023
AAV479	024-01345.001	W964	County Road B	WS-037	WS-037R	520	N	1/15/2023	1/16/2023	1/31/2023	5/24/2023
AAV483	024-01855.000	W889	County Road B	WS-133	WS-133R	510	N	2/1/2023	2/2/2023	2/7/2023	6/20/2023
AAT584	024-01856.007	N2816	Stanley Lane	WS-120	WS-120R	480	N	2/15/2023	2/16/2023	2/21/2023	6/21/2023
AAV497	024-01812.007	W716	County Road B	WS-054	WS-054R	600	N	3/22/2023	3/23/2023	5/16/2023	6/22/2023
AAV516	024-01344.001	W959	County Road B	WS-034	WS-034R	540	N	5/19/2023	5/22/2023	5/30/2023	10/31/2023
AAV515	024-01849.001	W905	County Road B	WS-053	WS-053R	520	N	5/18/2023	5/19/2023	6/2/2023	--
AAZ789	024-01851.000	W896	County Road B	WS-126	WS-126R	480	Y	6/16/2023	6/20/2023	9/6/2023	10/31/2023
ABO263	024-01852.000	W877	Madsen Road	WS-122	WS-122R	520	N	9/5/2023	9/7/2023	10/3/2023	--
ABO302	024-02196.000	W461	University Drive	WS-062	WS-062R	540	N	9/7/2023	9/12/2023	10/11/2023	--
AAZ791	024-01354.001	W924	Rader Road	WS-112	WS-112R	484	N	8/28/2023	9/26/2023	9/28/2023	--
AAZ785	024-01856.012	N2778	Stanley Lane	WS-142	WS-142R	522	N	6/26/2023	9/27/2023	10/20/2023	--
ABO946	024-02230.001	N2861	Shore Drive	WS-090	WS-090R	542	N	9/21/2023	10/5/2023	10/10/2023	--
ABO948	024-02231.000	N2849	Shore Drive	WS-068	WS-068R	542	N	9/25/2023	10/5/2023	10/18/2023	--
ABO938	024-01834.000	N2969	Shore Drive	WS-019	WS-019R	542	N	9/27/2023	10/6/2023	10/13/2023	--
ABP340	024-01864.004	Undeveloped	Green Gable Road/Rader Road	--	WS-168R	520	N	10/10/2023	10/10/2023	12/20/2023	--
ABP385	024-01864.005	N2740	Green Gable Road	WS-165	WS-165R	500	N	10/10/2023	10/12/2023	11/8/2023	--
ABP499	024-01864.003	W688	Rader Road	WS-083	WS-083R	500	N	10/16/2023	10/17/2023	12/28/2023	--
ABP486	024-01864.002	N2718	Green Gable Road	WS-166	WS-166R	500	N	10/13/2023	10/17/2023	12/20/2023	--
ABO264	024-01347.000	W907	Madsen Road	WS-167	WS-167R	522	N	9/5/2023	9/8/2023	12/13/2023	--
AAE171	024-01865.001	W691	Rader Road	WS-141	WS-141R	545	N	9/29/2023	12/11/2023	--	--
AAZ790	024-01830.000	N2936	Green Gable Road	WS-052	WS-052R	500	N	10/30/2023	12/7/2023	12/13/2023	--
ABR795	024-02233.000	W536	Weigers Road	WS-097	WS-097R	582	N	1/9/2024	1/23/2024	1/26/2024	--
ABR781	024-02240.000	N2825	Shore Drive	WS-099	WS-099R	602	N	1/8/2024	1/25/2024	--	--
ABR796	024-02236.000	W546	Weigers Road	WS-100	WS-100R	582	N	1/2/2024	1/25/2024	--	--
--	024-01345.002	W966	County Road B	WS-0158	WS-0158R	500	N	2/7/2024	2/8/2024	--	--

Acronyms and Abbreviations:

1 = retrofit line consists of a 4-inch steel liner that has been grouted in place to a depth of approximately 300 feet below ground surface within the existing deep well (Arcadis 2023. Deep Aquifer Bedrock Well Design and Long-Term Monitoring – Interim Response Status Update. August).

-- = not applicable

ID = identification

ft bgs = feet below ground surface

FIRE TECHNOLOGY CENTER PROPERTY

Potable Well Sampling Area

WS-062R
DMW-02
WS-019R
WS-054R
DMW-01
WS-072R
WS-090R
DMW-04
WS-097R
WS-068R
WS-100R
WS-099R
WS-126R
WS-052R
WS-122R
WS-167R
WS-133R
WS-053R
WS-037R
WS-034R
WS-120R
WS-142R
DMW-03
WS-165R
WS-166R
WS-168R
WS-083R
WS-132R
WS-112R
WS-141R

DITCH A
DITCH A-D
DITCH B
DITCH C
DITCH D
DITCH E

Little River

State Highway 64
Malinowski Road
County Road T
Irving Street
McAllister Street
Reines Street
Owena Street
Parkridge Avenue
Park Street
Hall Avenue
Gilbert Street
Harding Street
Jackson Street
Pine Street
Bangs Street
Minnesota Street
Currie Street
Walnut Street
Spruce Street
State Street
Hettie Street
Dunlap Avenue
Liberty Street
Stephenson Street
Wisconsin Street
Ludington Street
Mann Street
Ely Street
Newberry Avenue
Grant Street
Lewis Street
Wells Street
Colfax Street
Merryman Street
Stanton Street
Sherman Street
Thomas Street
Blaine Street
Shields Street
Oakes Street
Alice Lane
Armstrong Street
Church Street
Elizabeth Avenue
Garfield Avenue
Logan Avenue
Carney Avenue
Marinette Avenue
Ridge Street
Mary Street
Badger Parkway
Daggett Street
Parnell Street
Pomrin Street
Miller Street
Hosmer Street
10th Street
9th Street
Mott Street
6th Street
5th Street
4th Street
3rd Street
2nd Street
Main Street
Carney Boulevard
8th Street
7th Street
Water Street
Terrace Avenue
Elizabeth Avenue
West Hosmer Street
Russell Street
Dousman Street
Ogden Street
1st Street
Harbor Drive
Path
Alameda Street
Cushman Street
Chestnut Street
Leonard Street
Hills Court
Bird Street
West Cleveland Avenue
Marinette Avenue
Old Peshtigo Road
Stearns Drive
Cleveland Avenue
Pierce Avenue
Mallard Way
Lake Park Drive
Kati Lane
Prairie Street
Lincoln Street
Woodview Lane
Shingwa Uk Drive
Edwin Street
James Street
Pine Beach Road
Boren Drive
Redpath Drive
West Bay Shore Street
Woleske Road
Industrial Parkway South
Aerial Drive
Cahill Road
Gallagher Road
West Frontage Road
Old Peshtigo Road
Murray Street
Angwall Drive
Parsek Street
University Drive
Roosevelt Road
Shore Drive
Woodland Road
Madsen Road
Green Gable Road
Stanley Lane
Rader Road
County Road B
Spring Lane
Autumn Wood Lane
Edgewood Drive
Krause Road
Heath Lane
Countryside Lane
Kowalski Lane
Edwards Avenue

0 2,000 4,000
SCALE IN FEET

LEGEND:
- POTABLE WELL LOCATION
- DEEP MONITORING WELL LOCATION
- POTABLE WELL SAMPLING AREA
- STANTON STREET FACILITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- WATERBODY
- DITCH OR STREAM
- ROAD

TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

DEEP POTABLE WELL LOCATIONS

ARCADIS

FIGURE 1

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC\Deep_Monitoring_Well\Deep_Monitoring_Well.aprx 2/7/2024 8:17 PM

Alyssa Sellwood
Complex Sites Project Manager, Remediation and Redevelopment Program
State of Wisconsin Department of Natural Resources
101 South Webster Street
Box 7921
Madison, WI 53707-7921

Arcadis U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, WI 53202
United States
Phone: 414 276 7742
Fax: 414 276 7603
www.arcadis.com

Date: February 21, 2024
Our Ref: 30202232.01
Subject: Surface Water Advisory Sign Installation Memo
Tyco Fire Technology Center, Marinette, WI
BRRTS# 02-38-580694

Dear Ms. Sellwood,

On behalf of Tyco Fire Products LP (Tyco), Arcadis U.S., Inc. (Arcadis) prepared this Surface Water Advisory Sign Installation Memo pursuant to the Wisconsin Department of Natural Resources (WDNR) letter dated September 9, 2021. In September 2023, additional advisory sign installation along Ditch B was requested by and for the University of Wisconsin, Green Bay – Marinette (UWGB-M) campus. On November 29, 2023, Arcadis met with Dave Wineburner from UWGB-M to determine and stake out advisory sign locations. On December 29, 2023, six yellow advisory signs with u-channel posts were installed on the UWGB-M campus, noted as SN-34 through SN-39. Table 1 summarizes the Q1 2024 sign inventory, demonstrating all signs were inspected and determined to be in good order on February 8, 2024. The next scheduled sign inventory will be conducted in Q2 2024. Advisory sign locations are shown on Figures 1 and 2, and photographs are provided in Attachment 1.

Should you have any questions, please contact the undersigned.

Sincerely,
Arcadis U.S., Inc.

Shauna M. Johnson
Senior Environmental Specialist

Email: shauna.johnson@arcadis.com
Direct Line: 312-575-3732

CC. Denice Nelson

Alyssa Sellwood
State of Wisconsin Department of Natural Resources
February 21, 2024

Enclosures:

Table

1 Q1 2024 Surface Water Ditch Sign Inventory

Figures

1 Surface Water Ditch Sign Locations

2 Surface Water Ditch Sign Locations – UWGB-M Campus

Attachment 1

1 Photographic Log

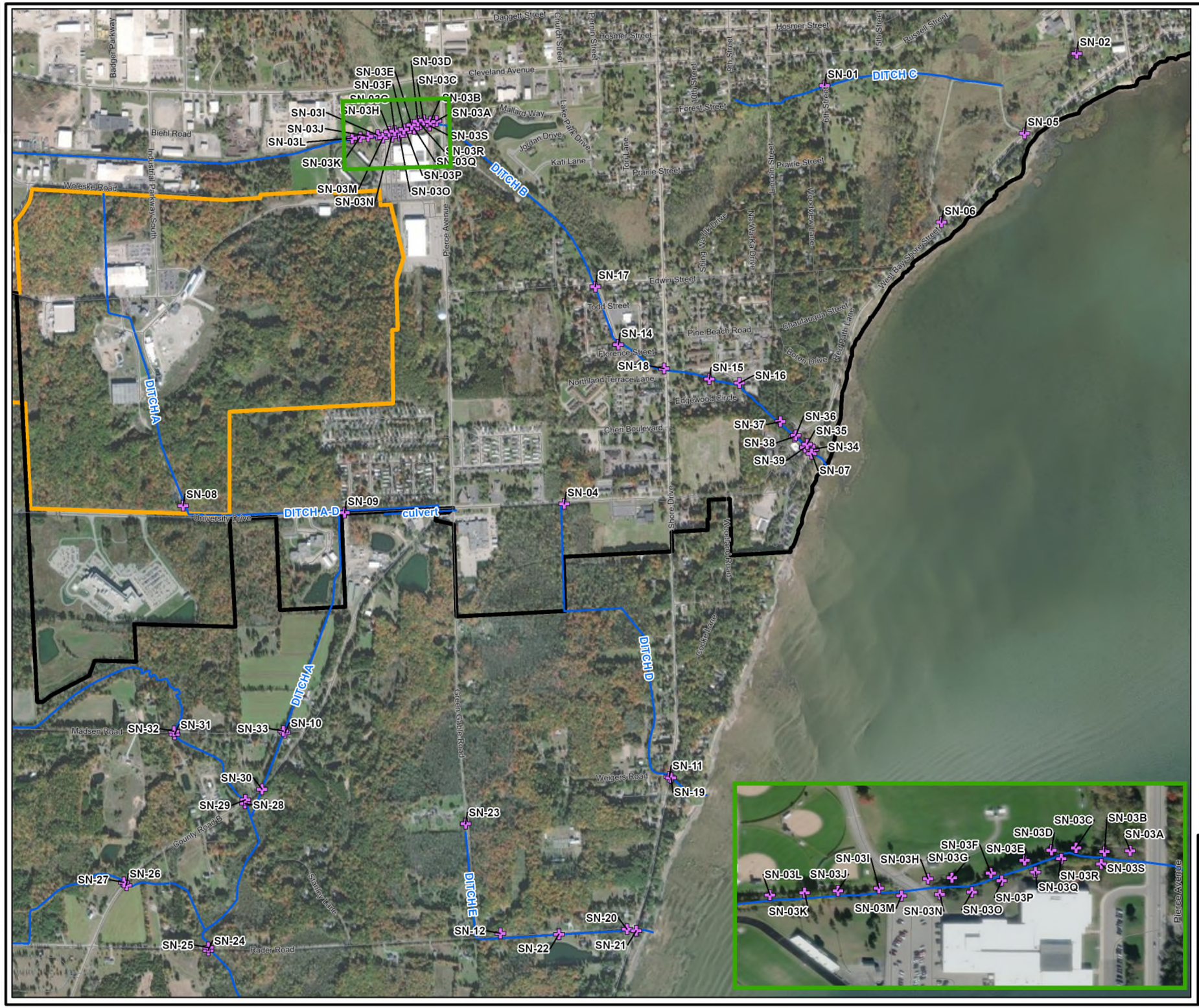
ARCADIS

Table 1
Q1 2024 Surface Water Ditch Sign Inventory
Surface Water Advisory Sign Installation Memo
Tyco Fire Technology Center
Marinette, Wisconsin

Site Information			Inspection Information			Details				
Sign No.	Ditch	Sign Location	Date	Time	Personnel	Conditions of Sign	Condition of Post	Corrective Actions Recommended	Corrective Actions Taken	Observations and Comments
SN-01	C	6th St between Cleveland Ave and Prairie St	02/08/2024	10:57	JT	Good Condition	Good Condition	None	None	N/A
SN-02	C	6th St between Cleveland Ave and Prairie St	02/08/2024	11:19	JT	Good Condition	Good Condition	None	None	N/A
SN-03A	B	Marinette High School	02/08/2024	13:48	AC	Good Condition	Good Condition	None	None	N/A
SN-03B	B	Marinette High School	02/08/2024	13:48	AC	Good Condition	Good Condition	None	None	N/A
SN-03C	B	Marinette High School	02/08/2024	13:51	AC	Good Condition	Good Condition	None	None	N/A
SN-03D	B	Marinette High School	02/08/2024	13:52	AC	Good Condition	Good Condition	None	None	N/A
SN-03E	B	Marinette High School	02/08/2024	13:54	AC	Good Condition	Good Condition	None	None	N/A
SN-03F	B	Marinette High School	02/08/2024	13:55	AC	Good Condition	Good Condition	None	None	N/A
SN-03G	B	Marinette High School	02/08/2024	13:56	AC	Good Condition	Good Condition	None	None	N/A
SN-03H	B	Marinette High School	02/08/2024	13:57	AC	Good Condition	Good Condition	None	None	N/A
SN-03I	B	Marinette High School	02/08/2024	13:58	AC	Good Condition	Good Condition	None	None	N/A
SN-03J	B	Marinette High School	02/08/2024	13:59	AC	Good Condition	Good Condition	None	None	N/A
SN-03K	B	Marinette High School	02/08/2024	14:00	AC	Good Condition	Good Condition	None	None	N/A
SN-03L	B	Marinette High School	02/08/2024	14:01	AC	Good Condition	Good Condition	None	None	N/A
SN-03M	B	Marinette High School	02/08/2024	14:04	AC	Good Condition	Good Condition	None	None	N/A
SN-03N	B	Marinette High School	02/08/2024	14:07	AC	Good Condition	Good Condition	None	None	N/A
SN-03O	B	Marinette High School	02/08/2024	14:08	AC	Good Condition	Good Condition	None	None	N/A
SN-03P	B	Marinette High School	02/08/2024	14:09	AC	Good Condition	Good Condition	None	None	N/A
SN-03Q	B	Marinette High School	02/08/2024	14:10	AC	Good Condition	Good Condition	None	None	N/A
SN-03R	B	Marinette High School	02/08/2024	14:11	AC	Good Condition	Good Condition	None	None	N/A
SN-03S	B	Marinette High School	02/08/2024	14:12	AC	Good Condition	Good Condition	None	None	N/A
SN-04	D	University Dr between Pierce Ave and Shore Dr	02/08/2024	14:30	AC	Good Condition	Good Condition	None	None	N/A
SN-05	C	West Bay Shore St between Dousman St and Edwin St	02/08/2024	11:22	JT	Good Condition	Good Condition	None	None	N/A
SN-06	C	West Bay Shore St between Dousman St and Edwin St	02/08/2024	11:23	JT	Good Condition	Good Condition	None	None	N/A
SN-07	B	University Dr between Shore St and West Bay Shore St	02/08/2024	11:28	JT	Good Condition	Good Condition	None	None	N/A
SN-08	A	FTC property by Ditch A System; University Dr between Roosevelt Rd and Pierce Ave	02/08/2024	14:39	AC	Good Condition	Good Condition	None	None	N/A
SN-09	A	University Dr between Roosevelt Rd and County Rd B	02/08/2024	14:27	AC	Good Condition	Good Condition	None	None	N/A
SN-10	A	Madsen Rd west of County Rd B	02/08/2024	14:33	JT	Good Condition	Good Condition	None	None	N/A
SN-11	D	Shore Dr at Weigers Rd	02/08/2024	13:53	JT	Good Condition	Good Condition	None	None	N/A
SN-12	E	Rader Rd between Green Gable Rd and Shore Dr	02/08/2024	14:05	JT	Good Condition	Good Condition	None	None	N/A
SN-14	B	James St between Todd St and Florence St	02/08/2024	14:45	JT	Good Condition	Good Condition	None	None	N/A
SN-15	B	West of Ditch B System; Shore Dr between Pine Beach Rd and Edgewood Cir	02/08/2024	14:50	JT	Good Condition	Good Condition	None	None	N/A
SN-16	B	West of Ditch B System; Shore Dr between Pine Beach Rd and Edgewood Cir	02/08/2024	14:48	JT	Good Condition	Good Condition	None	None	N/A
SN-17	B	Edwin St between Oak View Rd and James St	02/08/2024	--	JT	Sign Removed	--	Reinstall	None	Sign/post to be reinstalled following completion of construction on Edwin St planned for Spring
SN-18	B	Near Renaissance Assisted Living Center; Shore Dr between Florence St and Northland Ln	02/08/2024	14:54	JT	Good Condition	Good Condition	None	None	N/A
SN-19	D	Shore Dr at Weigers Rd	02/08/2024	13:54	JT	Good Condition	Good Condition	None	None	N/A
SN-20	E	Rader Rd between Green Gable Rd and Shore Dr	02/08/2024	13:57	JT	Good Condition	Good Condition	None	None	N/A
SN-21	E	Rader Rd between Green Gable Rd and Shore Dr	02/08/2024	13:59	JT	Good Condition	Good Condition	None	None	N/A
SN-22	E	Rader Rd between Green Gable Rd and Shore Dr	02/08/2024	14:01	JT	Good Condition	Good Condition	None	None	N/A
SN-23	E	Green Gable Rd between Rader Rd and University Dr	02/08/2024	14:07	JT	Good Condition	Good Condition	None	None	N/A
SN-24	A	Rader Rd between County Rd B and Stanley Ln	02/08/2024	14:11	JT	Good Condition	Good Condition	None	None	N/A
SN-25	A	Rader Rd between County Rd B and Stanley Ln	02/08/2024	14:12	JT	Good Condition	Good Condition	None	None	N/A
SN-26	A	County Rd B between Rader Rd and Madsen Rd	02/08/2024	14:20	JT	Good Condition	Good Condition	None	None	N/A
SN-27	A	County Rd B between Rader Rd and Madsen Rd	02/08/2024	14:21	JT	Good Condition	Good Condition	None	None	N/A
SN-28	A	County Rd B between Rader Rd and Madsen Rd	02/08/2024	14:25	JT	Good Condition	Good Condition	None	None	N/A
SN-29	A	County Rd B between Rader Rd and Madsen Rd	02/08/2024	14:26	JT	Good Condition	Good Condition	None	None	N/A
SN-30	A	County Rd B between Rader Rd and Madsen Rd	02/08/2024	14:27	JT	Good Condition	Good Condition	None	None	N/A

Table 1
Q1 2024 Surface Water Ditch Sign Inventory
Surface Water Advisory Sign Installation Memo
Tyco Fire Technology Center
Marinette, Wisconsin

Site Information			Inspection Information			Details				
Sign No.	Ditch	Sign Location	Date	Time	Personnel	Conditions of Sign	Condition of Post	Corrective Actions Recommended	Corrective Actions Taken	Observations and Comments
SN-31	A	Madsen Rd between Roosevelt Rd and County Rd B	02/08/2024	14:36	JT	Good Condition	Good Condition	None	None	N/A
SN-32	A	Madsen Rd between Roosevelt Rd and County Rd B	02/08/2024	14:35	JT	Good Condition	Good Condition	None	None	N/A
SN-33	A	Madsen Rd between Roosevelt Rd and County Rd B	02/08/2024	14:33	JT	Good Condition	Good Condition	None	None	N/A
SN-34	B	UWGB Marinette Campus	02/08/2024	12:16	JT	Good Condition	Good Condition	None	None	N/A
SN-35	B	UWGB Marinette Campus	02/08/2024	12:20	JT	Good Condition	Good Condition	None	None	N/A
SN-36	B	UWGB Marinette Campus	02/08/2024	12:08	JT	Good Condition	Good Condition	None	None	N/A
SN-37	B	UWGB Marinette Campus	02/08/2024	11:52	JT	Good Condition	Good Condition	None	None	N/A
SN-38	B	UWGB Marinette Campus	02/08/2024	11:40	JT	Good Condition	Good Condition	None	None	N/A
SN-39	B	UWGB Marinette Campus	02/08/2024	12:00	JT	Good Condition	Good Condition	None	None	N/A



LEGEND:

- DITCH SIGN LOCATION
- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY
- ROAD
- DITCH OR STREAM

NOTES:

1. AERIAL IMAGERY PROVIDED BY ARCGIS ONLINE DATA.

0 1,200 2,400

GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

SURFACE WATER DITCH SIGN LOCATIONS

ARCADIS

FIGURE
1

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC_DITCHES\SW_Ditch_Sign_Locations.aprx 2/21/2024 3:57 PM

LEGEND

- DITCH SIGN LOCATION
- ROAD
- DITCH OR STREAM
- APPROXIMATE MARINETTE CITY BOUNDARY
- APPROXIMATE SITE PROPERTY BOUNDARY

NOTES:

1. AERIAL IMAGERY PROVIDED BY ARCGIS ONLINE DATA.

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

SURFACE WATER DITCH SIGN LOCATIONS - UWGB, MARINETTE CAMPUS

ARCADIS

FIGURE
2

Path: T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC_DITCHES\SW_Ditch_Sign_Locations.aprx\Fig2_SW_Ditch_Signage_Locations_Marinette_Campus Last Saved By: MEstifanos 2/16/2024

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 1

Date:
02-08-2024

Description:
Advisory Sign SN-34

Location:
UWGB-M Campus

Direction:
Southwest

Photo: 2

Date:
02-08-2024

Description:
Advisory Sign SN-34

Location:
UWGB-M Campus

Direction:
Southwest

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 3

Date:
02-08-2024

Description:
Advisory Sign SN-35

Location:
UWGB-M Campus

Direction:
South

Photo: 4

Date:
02-08-2024

Description:
Advisory Sign SN-35

Location:
UWGB-M Campus

Direction:
South

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 5

Date:
02-08-2024

Description:
Advisory Sign SN-36

Location:
UWGB-M Campus

Direction:
Northeast

Photo: 6

Date:
02-08-2024

Description:
Advisory Sign SN-36

Location:
UWGB-M Campus

Direction:
Northeast

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 7

Date:
02-08-2024

Description:
Advisory Sign SN-37

Location:
UWGB-M Campus

Direction:
Northeast

Photo: 8

Date:
02-08-2024

Description:
Advisory Sign SN-37

Location:
UWGB-M Campus

Direction:
Northeast

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 9

Date:
02-08-2024

Description:
Advisory Sign SN-38

Location:
UWGB-M Campus

Direction:
North

Photo: 10

Date:
02-08-2024

Description:
Advisory Sign SN-38

Location:
UWGB-M Campus

Direction:
North

Project Photographs

Tyco Fire Products LP
Marinette, Wisconsin

Photo: 11

Date:
02-08-2024

Description:
Advisory Sign SN-39

Location:
UWGB-M Campus

Direction:
Southwest

Photo: 12

Date:
02-08-2024

Description:
Advisory Sign SN-39

Location:
UWGB-M Campus

Direction:
Southwest

Alyssa Sellwood
Complex Sites Project Manager – Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, Wisconsin 53703

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

Date: February 16, 2024
Our Ref: 30171092
Subject: 2023 Foam Monitoring Interim Action Report
Tyco Fire Technology Center
BRRTS #: 02-38-580694

Dear Ms. Sellwood,

Arcadis U.S., Inc. (Arcadis) has prepared this 2023 Foam Monitoring Interim Action Report on behalf of Tyco Fire Products LP (Tyco) summarizing foam monitoring and removal activities completed in 2023 on waterways (Ditches A, B, C, D, and E) in the City of Marinette, Wisconsin, and the Town of Peshtigo, Wisconsin. All work related to foam collection activities performed in 2023 was completed per the *2021 Foam Monitoring Interim Action Report and Foam Monitoring Work Plan Modifications* (work plan) submitted to the Wisconsin Department of Natural Resources (WDNR) on February 15, 2022.

Site Location and Contact Information

The Tyco Fire Technology Center is located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site), as shown on **Figure 1**. The Site location is also described as:

- **Public Land Survey System Description:** NE ¼ of the NE ¼ of Section 13, Township 30N, Range 23E.
- **County:** Marinette.
- **Coordinates:** Coordinates describing the approximate locations of the Site boundaries are shown in **Figure 1**.

Contact information for the responsible party (Tyco) is listed below:

- **Name:** Denice Nelson - Senior Director, Remediation and Strategy
- **Address:** 5757 N. Green Bay Avenue, Milwaukee, Wisconsin 53209
- **Telephone Number:** 651-280-7259

Field Implementation

Floating booms were deployed on Ditches A, B, C (East Branch), D, and E on April 3, 2023, and on Ditch C (Southwest Branch) April 10, 2023, after the dissipation of ice at the locations shown in **Figure 2.** Notifications were made to WDNR, U.S. Army Corps. Of Engineers, the Town of Peshtigo, and the City of Marinette prior to implementing the interim action. Per the work plan, inspections of Ditches A, C, D, and E were conducted once per week and inspections of Ditch B were conducted twice per week. For any ditches where foam was observed, daily inspections continued at that location until foam was not observed for 3 consecutive days. Ditch inspections

and foam removal activities concluded on December 15, 2023, and all floating booms were removed from Ditches A-E due to the onset of freezing conditions.

Foam Observations and Removal

No foam accumulation was observed on Ditches A, C, or E during weekly inspections throughout the 2023 monitoring period. Foam was observed and collected 132 times on Ditch B and 5 times on Ditch D. A summary of the daily inspection logs for Ditches A, B, C (East Branch), C (Southwest Branch), D, and E are provided as **Tables 1, 2, 3, 4, 5, and 6**, respectively. Observed foam was collected via manual skimming with a pool skimmer, transferred into sealed, leak-proof 55-gallon drums, and stored at the Tyco Fire Technology Center (FTC) pending disposal, as described in the Waste Characterization and Disposal section below. Per the work plan, the WDNR project manager was notified via email within 2 days of a foam accumulation event.

A cumulative total of approximately 388.5 gallons of uncollapsed foam were removed from Ditch B and approximately 11.75 gallons of uncollapsed foam were removed from Ditch D throughout the 2023 reporting period. The structure of the collected foam naturally collapsed over time reducing to approximately 36 gallons of liquid which were accumulated into three different containers, as discussed below.

Foam observations dates, locations, and foam volume removal estimates are shown on **Figure 2**. Photos and descriptions of the observed foam and descriptions of weather conditions are included as **Attachment 1.**

Waste Characterization and Disposal

Per the work plan, all foam was removed from the site within 90 days of collection. Foam was first collected on April 10, 2023, and was containerized in a leak proof 55-gallon drum for storage at the FTC pending transport offsite on July 7, 2023, by Endpoint Solutions Corporation (Endpoint). Foam collected from all monitored ditches was consolidated into a single drum. One analytical sample was collected from the drum on May 22, 2023 and submitted to Eurofins TestAmerica of West Sacramento, California (Eurofins Sacramento) for analysis of per- and polyfluoroalkyl substances (PFAS) by U.S. Environmental Protection Agency (U.S. EPA) Method 537 Modified under standard chain-of-custody procedures. The drum contained approximately 13 gallons of collapsed foam collected between April 10, 2023 and May 22, 2023 at the time of sampling. The drum was sealed following sampling and no additional material was added.

Foam collection starting May 23, 2023 and ending August 9, 2023 was containerized in a new leak proof 55-gallon drum and stored at the FTC pending transport offsite on August 15, 2023 by Endpoint. Foam collected from all monitored ditches was consolidated into a single drum. One analytical sample was collected from the drum on August 9, 2023 and submitted to Eurofins Sacramento for analysis of PFAS by U.S. EPA Method 537 Modified under standard chain-of-custody procedures. The drum contained approximately 20 gallons of collapsed foam at the time of sampling. The drum was sealed following sampling and no additional material was added.

Foam collection starting August 10, 2023 and ending October 6, 2023 (the last date foam was observed) was containerized in a new leak proof 55-gallon drum and stored at the FTC pending transport offsite on November 7, 2023 by Endpoint. Foam collected from all monitored ditches was consolidated into a single drum. One analytical sample was collected from the drum on October 9, 2023 and submitted to Eurofins Sacramento for analysis of PFAS by U.S. EPA Method 537 Modified under standard chain-of-custody procedures. The drum contained approximately 3 gallons of collapsed foam at the time of sampling. The drum was sealed following sampling and no additional material was added.

Drums were transported to Endpoint's waste transfer facility located in Hartford, Wisconsin. All collected foam is staged at Endpoint's facility pending transport to Waste Management in Arlington, Oregon (WM Arlington), for disposal. Spent booms from the 2023 season were transferred to drums and are being stored at the FTC pending disposal. Transportation documentation for the collected foam and spent booms is included in **Attachment 2**.

Analytical Results and Significance

Analytical results of the characterization samples are presented in **Table 7**. Laboratory analytical reports are included in **Attachment 3**.

Historically, aqueous film-forming foams were used as part of the firefighting, development, and quality testing activities conducted at the Site. Outdoor use of PFAS-containing foam was discontinued at the Site in 2017. Surface water foam is generated by turbulence caused by naturally occurring elements such as stream obstructions, changes in stream flow direction, and wind. Furthermore, natural decomposition of plants in surface water bodies release organic compounds which make it easier for foam to form[1]. Foam observed on surface water as part of this ongoing foam monitoring program is naturally generated foam, it is not aqueous film-forming foam (AFFF).

PFAS concentrations in foam are predictably higher than the concentrations in groundwater or surface water due to the physical properties of PFAS at the molecular level. PFAS will accumulate in foam, and amplification of PFAS concentrations in foam will occur regardless of the source of PFAS[2,3]. In instances where PFAS are present in water, the foam has been found to accumulate PFAS at 100 to 1000 times higher concentrations than is present in the water[4,5]. Accordingly, the concentrations of PFAS in surface water cannot be used to accurately estimate the concentrations of PFAS in foam.

The significance of these results include:

1. Foam is naturally occurring in the environment, and foam observed in the ditches as part of this monitoring program is natural foam, not AFFF foam.
2. PFAS concentrations amplify in foam, regardless of their source.
3. Collecting and properly disposing of foam also removes PFAS from the environment because PFAS aggregates in foam.

Future Activities

Tyco will continue to inspect and remove observed foam from Ditches A-E in 2024 using the same methods approved in the work plan and outlined below.

- Inspections of Ditches A, C, D, and E will be conducted on a weekly basis
- Inspections of Ditch B will be conducted twice per week (i.e., once every 3 to 5 days)

[1] PFAS Response - PFAS Foam on Lakes and Streams (michigan.gov)
[2] https://www.epa.gov/sciencematters/understanding-pfas-environment
[3] Rankin, K., Mabury, S.A., Jenkins, T.M. and Washington, J.W., 2016. A North American and global survey of perfluoroalkyl substances in surface soils: Distribution patterns and mode of occurrence. Chemosphere, 161, pp.333-341
[4] https://dnr.wi.gov/topic/Contaminants/documents/pfas/Starkweather20191219.pdf (accessed 2/8/2022)
[5] https://dnr.wisconsin.gov/sites/default/files/topic/PFAS/jci/PeshtigoRiver20191030.pdf (access 2/8/2022)

- If foam observations are reported to Tyco by others prior to a routine inspection, Tyco will collect the foam as soon as possible and daily inspections will continue at the location where the foam was sighted until foam is not observed for 3 consecutive days.
- Foam from all ditches will be combined, stored in leak-proof containers, and removed from the site within 90 days of collection.
- One sample will be collected from each container and analyzed for PFAS (36 compounds) for waste characterization and disposal purposes.
- Tyco will provide an email to the WDNR Project Manager within 2 business days of a foam accumulation event that includes a photo of the foam and a summary of the date, location, weather conditions, and volume of foam recovered.
- Tyco will submit an Annual Foam Monitoring Interim Action Report, in accordance with Wisconsin Administrative Code Chapter NR 708 by February 15, 2025 for the previous calendar year.

Closing

Tyco has completed the foam monitoring and removal tasks for 2023. Floating booms were removed from Ditches A, B, C, D, and E on December 15, 2023 due to the onset of freezing conditions. In 2024, new booms will be deployed and inspection and foam removal activities will resume as outlined above when allowed by ambient weather conditions.

Please do not hesitate to contact me if there are any questions.

Sincerely,
Arcadis U.S., Inc.

Jim Ziska, PE
Principal Engineer

Email: James.Ziska@arcadis.com
Direct Line: 612-339-9434

CC.

Denice Nelson (Tyco)
Scott Potter (Arcadis)

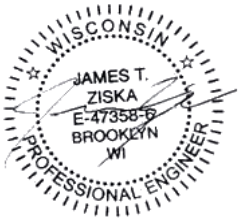
Enclosures:

NR 712.09 Certification

Tables
1 Ditch A Inspection Summary

NR 712.09 Certification

I, James Ziska, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wisconsin Administrative Code; that this document has been prepared in accordance with the rules of Professional Conduct in ch. A-E 8, Wisconsin Administrative Code; and that all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wisconsin Administrative Code.



Principal Engineer, E-47358-6
Signature, title, and P.E. number

P.E. stamp

Tables

Table 1
Ditch A Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch A									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	New	No flow observed	No foam observed	No foam observed	No foam collected	Booms deployed
4/10/2023	0	4.5	South	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
4/18/2023	0	11.7	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/22/2023	0	2	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/30/2023	0	3.3	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/16/2023	0	0.9	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/19/2023	0	0	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/29/2023	0	4	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/7/2023	0	3	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/13/2023	0.09	2	West-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/18/2023	0.06	3	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/25/2023	0	4	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/4/2023	0.01	3	North-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/8/2023	1	0	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/14/2023	0.16	5	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/21/2023	0	2	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/28/2023	0	1	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/5/2023	0	0	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/12/2023	0.04	4	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/21/2023	0	0	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/25/2023	0	0	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/2/2023	0	0	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/23/2023	0.27	0	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
							Total:	**0**	

Notes:
Booms were deployed at Ditch A on 4/3/23.
Booms were removed at Ditch A on 12/15/23 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch B									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	New	Downstream	No foam observed	No foam observed	No foam collected	Booms deployed
4/6/2023	0.01	11	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/7/2023	0	0	None	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/10/2023	**0**	**4.5**	**South**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**10**	**--**
4/11/2023	**0**	**5.3**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**15.5**	**--**
4/12/2023	**0**	**5.7**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**4**	**--**
4/13/2023	**0**	**4.7**	**South**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**5**	**--**
4/14/2023	**0**	**2.5**	**South-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**9**	**--**
4/15/2023	**0**	**1**	**Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**5**	**--**
4/16/2023	**0.6**	**6**	**Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
4/17/2023	**0.08**	**11.5**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White, frothy**	**3**	**--**
4/18/2023	**0**	**11.7**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**7**	**--**
4/19/2023	**0.13**	**2.5**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**7**	**--**
4/20/2023	**0.26**	**9.5**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**3.5**	**--**
4/21/2023	**0**	**6**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, some froth**	**10**	**--**
4/22/2023	**0**	**6**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**5**	**--**
4/23/2023	**0**	**0**	**None**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**5**	**--**
4/24/2023	**0**	**2.5**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**13**	**--**
4/25/2023	**0**	**5**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White, frothy**	**10**	**--**
4/26/2023	**0**	**2**	**West-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**10**	**--**
4/27/2023	**0.02**	**4.3**	**South**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**10**	**--**
4/28/2023	**0**	**4.5**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**9**	**--**
4/29/2023	**0.04**	**1.5**	**East-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**5**	**--**
4/30/2023	**0.18**	**5.3**	**West-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**3**	**--**
5/1/2023	**0.4**	**9**	**West-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White, frothy**	**0.5**	**--**
5/2/2023	**0**	**11**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White, frothy**	**4**	**--**
5/3/2023	**0**	**6**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, frothy**	**9**	**--**
5/4/2023	**0.01**	**2**	**East-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**10**	**--**
5/5/2023	**0.13**	**4**	**East-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**1**	**--**
5/6/2023	**0.19**	**3**	**South-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**1**	**--**
5/7/2023	0.96	2	North-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	High stream flow rate, booms submerged
5/8/2023	**0**	**1.7**	**Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**11**	**--**
5/9/2023	**0**	**0**	**None**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**14**	**--**
5/10/2023	**0**	**2**	**South**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**13**	**--**
5/11/2023	**0**	**0**	**None**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**12**	**--**
5/12/2023	**0**	**2**	**East**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**4**	**--**
5/13/2023	**0**	**8**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**2**	**--**
5/14/2023	**0**	**8**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**4**	**--**
5/15/2023	**0**	**4**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**6**	**--**
5/16/2023	**0**	**6**	**West-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**3**	**--**
5/17/2023	**0**	**4**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**7**	**--**
5/18/2023	0.07	4.5	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
5/19/2023	**0.16**	**4**	**West-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**2**	**--**
5/20/2023	**0**	**8.5**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**2**	**--**

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch B									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
5/21/2023	0	1	East-Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	4	--
5/22/2023	0	2	East-Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	6	--
5/23/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	White/brown, some froth	5	--
5/24/2023	0	8.3	North	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
5/25/2023	0	5	Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	5	--
5/26/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	7	--
5/27/2023	0	7	Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
5/28/2023	0	3	East-Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2	--
5/29/2023	0	5.3	North	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
5/30/2023	0	3.3	South-Southwest	Good	Downstream	West Bay Shore St. crossing	White/brown, some froth	3	--
5/31/2023	0	4.7	Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	4	--
6/1/2023	0	1.5	East-Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
6/2/2023	0	1	Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
6/3/2023	0	4	North-Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2	--
6/4/2023	0	4	Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2	--
6/5/2023	0	2	Southwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	5	--
6/6/2023	0	8	North-Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2.5	--
6/7/2023	0	4.5	Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1.5	--
6/8/2023	0	1.5	North-Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2	--
6/9/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
6/10/2023	0	5	East	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
6/11/2023	0	5	North-Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/12/2023	0	2	West-Southest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/13/2023	0.65	4	West-Southwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2.5	--
6/14/2023	0	1.3	Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
6/15/2023	0	8	Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
6/16/2023	0	0.9	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
6/17/2023	0	5	East-Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
6/18/2023	0	1	Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2	--
6/19/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/20/2023	0	5	North-Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/21/2023	0	2	Northeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
6/22/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1.5	--
6/23/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	3	--
6/24/2023	0	2.3	South-Southwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1.5	--
6/25/2023	0.38	3.5	East-Southeast	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/26/2023	0.7	7.5	North-Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	2.5	--
6/27/2023	0	6	North-Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1.5	--
6/28/2023	0	0	None	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1.5	--
6/29/2023	0	4	Southwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	1	--
6/30/2023	0	4	West-Northwest	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
7/1/2023	0	1	East	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
7/2/2023	0	3	Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/3/2023	0	2.3	East	Good	Downstream	West Bay Shore St. crossing	Brown, some froth	0.5	--
7/4/2023	0	1	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch B									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
7/5/2023	**0.63**	**2**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown/white, some froth**	**0.5**	**--**
7/6/2023	**0.64**	**6**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**3**	**--**
7/7/2023	**0**	**3**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**2**	**--**
7/8/2023	**0.16**	**2**	**North**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Tan, some froth**	**0.5**	**--**
7/9/2023	**0.16**	**2**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/10/2023	**0.58**	**1.5**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/11/2023	0.8	3	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/12/2023	**0.08**	**2**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/13/2023	**0.09**	**2**	**West-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/14/2023	**0.04**	**6**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/15/2023	**0.07**	**3**	**West-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/16/2023	0.11	4	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/17/2023	**0.11**	**4**	**West-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White, some froth**	**0.5**	**--**
7/18/2023	0.06	3	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/19/2023	**0.06**	**3**	**Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/20/2023	**0.09**	**2**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/21/2023	**0.08**	**3**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/22/2023	**0.03**	**2**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/23/2023	0.04	1.5	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/24/2023	**0**	**4**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**White/tan, frothy**	**0.5**	**--**
7/25/2023	0	4	East-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/26/2023	**0.05**	**5**	**South**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/27/2023	2	0	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/28/2023	**0.37**	**0**	**None**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/29/2023	**0.15**	**7**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/30/2023	**0.03**	**3**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
7/31/2023	0	3	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/1/2023	**0**	**1**	**North**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/2/2023	**0.89**	**4.5**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/3/2023	0.89	4	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/4/2023	**0.01**	**3**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**2**	**--**
8/5/2023	**0**	**4**	**East**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/6/2023	**0**	**2.7**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/7/2023	**0**	**3**	**North**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/8/2023	1	0	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/9/2023	0	1	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/10/2023	0	7.3	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/11/2023	4	0	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/14/2023	**0.16**	**5**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/15/2023	0.16	5.7	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/16/2023	0	4	Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/17/2023	0.31	3	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/18/2023	0.02	1	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/21/2023	**0**	**2**	**North**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/22/2023	0.03	3	East-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/23/2023	0	1	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch B									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
8/24/2023	0	1	North	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/28/2023	**0**	**1**	**Southwest**	**Good**	**No flow observed**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
8/29/2023	**0.12**	**3**	**West-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
8/30/2023	0.01	3	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/31/2023	0	0	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/1/2023	0	0	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/5/2023	**0**	**0**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
9/6/2023	0.29	3	Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/7/2023	**0.09**	**5**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/8/2023	**0**	**3.5**	**North**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
9/9/2023	0	2	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/10/2023	**0.29**	**2**	**Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/11/2023	**0.04**	**2**	**North-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/12/2023	**0.04**	**4**	**Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
9/13/2023	**0.01**	**1**	**West-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/14/2023	**0**	**0**	**Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1**	**--**
9/15/2023	**0**	**3**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/16/2023	**0**	**2**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/17/2023	**0**	**5**	**North-Northwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/18/2023	0	1	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/19/2023	**0**	**0**	**South-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1.5**	**--**
9/20/2023	**0**	**0**	**East-Southeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/21/2023	**0**	**0**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/22/2023	0	0	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/23/2023	0	2	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/24/2023	0	3.8	Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
9/25/2023	**0**	**0**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**1.5**	**--**
9/26/2023	**0**	**3**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/27/2023	**0.19**	**0**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/28/2023	**0.03**	**2**	**East**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/29/2023	**0**	**0**	**East-Northeast**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
9/30/2023	0.04	4	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/1/2023	0.12	5	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/2/2023	**0**	**0**	**West**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
10/3/2023	0	0	Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/4/2023	0	7	Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/5/2023	0	4.1	Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/6/2023	**0**	**4.4**	**South-Southwest**	**Good**	**Downstream**	**West Bay Shore St. crossing**	**Brown, some froth**	**0.5**	**--**
10/7/2023	0	5.9	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/8/2023	0	5.9	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/10/2023	0	2	North-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/11/2023	0	1	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/17/2023	0	2	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/20/2023	0.06	9	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--

Table 2
Ditch B Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch B									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
10/23/2023	0.27	0	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/25/2023	1.27	1	Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/27/2023	0.32	2	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/1/2023	0	0	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/3/2023	0	6	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/8/2023	0	6	East	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/10/2023	0	0	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/16/2023	0	5	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/17/2023	0	0	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/21/2023	0	2	East-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/22/2023	0	3	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/29/2023	0	4	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/1/2023	0	0	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/6/2023	0	2	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/8/2023	0	4	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/13/2023	0	3	Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
							Total:	**388.5**	

Notes:
Booms were deployed at Ditch B on 4/3/23.
Booms were removed at Ditch B on 12/15/23 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 3
Ditch C (East Branch) Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch C (East Branch)									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	New	Downstream	No foam observed	No foam observed	No foam collected	Booms deployed
4/10/2023	0	4.5	South	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
4/18/2023	0	11.7	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/22/2023	0	2	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/30/2023	0	3.3	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/16/2023	0	0.9	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/19/2023	0	0	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/29/2023	0	4	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/7/2023	0	3	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/13/2023	0.09	2	West-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/18/2023	0.06	3	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/25/2023	0	4	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/4/2023	0.01	3	North-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/8/2023	1	0	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/14/2023	0.16	5	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/21/2023	0	2	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/28/2023	0	1	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/5/2023	0	0	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/12/2023	0.04	4	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/21/2023	0	0	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/25/2023	0	0	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/2/2023	0	0	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/23/2023	0.27	0	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
							Total:	**0**	

Notes:
Booms were deployed at Ditch C on 4/3/23.
Booms were removed at Ditch C on 12/15/23 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 4
Ditch C (Southwest Branch) Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch C (Southwest Branch)									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	No boom deployed	No flow observed	No foam observed	No foam observed	No foam collected	Ditch frozen/snowed in
4/10/2023	0	4.5	South	New	No flow observed	No foam observed	No foam observed	No foam collected	Booms deployed
4/18/2023	0	11.7	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/22/2023	0	2	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/30/2023	0	3.3	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/16/2023	0	0.9	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/19/2023	0	0	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/29/2023	0	4	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/7/2023	0	3	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/13/2023	0.09	2	West-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/18/2023	0.06	3	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/25/2023	0	4	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/4/2023	0.01	3	North-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/8/2023	1	0	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/14/2023	0.16	5	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/21/2023	0	2	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/28/2023	0	1	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/5/2023	0	0	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/12/2023	0.04	4	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/21/2023	0	0	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/25/2023	0	0	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/2/2023	0	0	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/23/2023	0.27	0	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	No flow, frozen	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
							Total:	**0**	

Notes:
Booms were deployed at Ditch C on 4/10/23.
Booms were removed at Ditch C on 12/15/23 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 5
Ditch D Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch D									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	New	Downstream	No foam observed	No foam observed	No foam collected	Booms deployed
4/10/2023	0	4.5	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/18/2023	0	11.7	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/19/2023	**0.13**	**2.5**	**Northwest**	**Good**	**Downstream**	**Shore Dr. crossing**	**White, frothy**	**0.75**	**Includes 0.25 gal collected along University Dr.**
4/20/2023	0.26	9.5	East-Northeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/21/2023	**0**	**6**	**South-Southwest**	**Good**	**Downstream**	**Shore Dr. crossing**	**Tan, frothy**	**5**	**--**
4/22/2023	**0**	**6**	**West**	**Good**	**Downstream**	**Shore Dr. crossing**	**Tan, frothy**	**2**	**--**
4/23/2023	**0**	**0**	**None**	**Good**	**Downstream**	**Shore Dr. crossing**	**Tan, frothy**	**2**	**--**
4/24/2023	**0**	**2.5**	**Northwest**	**Good**	**Downstream**	**Shore Dr. crossing**	**White/tan, frothy**	**2**	**--**
4/25/2023	0	5	North-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/26/2023	0	2	West-Southwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/27/2023	0.02	4.3	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
5/22/2023	0	2	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
5/30/2023	0	3.3	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/16/2023	0	0.9	East-Southeast	Good	Downstream	No foam observed	No foam observed	No foam collected	--
6/19/2023	0	0	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/29/2023	0	4	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/7/2023	0	3	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/13/2023	0.09	2	West-Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
7/18/2023	0.06	3	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/25/2023	0	4	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/4/2023	0.01	3	North-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/8/2023	1	0	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/14/2023	0.16	5	Northwest	Good	Downstream	No foam observed	No foam observed	No foam collected	--
8/21/2023	0	2	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/28/2023	0	1	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/5/2023	0	0	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/12/2023	0.04	4	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/21/2023	0	0	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/25/2023	0	0	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/2/2023	0	0	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/23/2023	0.27	0	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	No flow, frozen	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
							Total:	**11.75**	

Notes:
Booms were deployed at Ditch D on 4/3/23.
Booms were removed at Ditch D on 12/15/23 due to the onset of freezing conditions.

Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 6
Ditch E Inspection Summary
Tyco Fire Products LP
Marinette, Wisconsin

Ditch E									
	Weather Conditions			Inspection Summary					
Date	Precipitation (inches)	Wind Speed (miles per hour)	Wind Direction	Boom Condition	Ditch Flow Observations	Foam Observation Location	Foam Description	Uncollapsed Foam Volume Collected (gal)	Comments
4/3/2023	0	4	Southwest	New	Downstream	No foam observed	No foam observed	No foam collected	Booms deployed
4/10/2023	0	4.5	South	Good	Downstream	No foam observed	No foam observed	No foam collected	--
4/18/2023	0	11.7	West	Good	Downstream	No foam observed	No foam observed	No foam collected	--
5/22/2023	0	2	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
5/30/2023	0	3.3	South-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/16/2023	0	0.9	East-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/19/2023	0	0	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
6/29/2023	0	4	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/7/2023	0	3	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/13/2023	0.09	2	West-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/18/2023	0.06	3	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
7/25/2023	0	4	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/4/2023	0.01	3	North-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/8/2023	1	0	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/14/2023	0.16	5	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/21/2023	0	2	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
8/28/2023	0	1	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/5/2023	0	0	Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/12/2023	0.04	4	Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
9/25/2023	0	0	East-Northeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/2/2023	0	0	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/9/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/16/2023	0	6	North	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/23/2023	0.27	0	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
10/30/2023	0	0	North-Northwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/6/2023	0	10	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/14/2023	0	7	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/20/2023	0	4	South-Southeast	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
11/30/2023	0	2	South-Southwest	Good	No flow, frozen	No foam observed	No foam observed	No foam collected	--
12/4/2023	0	2	None	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/12/2023	0	10	West	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
12/15/2023	0	4	West-Southwest	Good	No flow observed	No foam observed	No foam observed	No foam collected	--
							Total:	**0**	

Notes:
Booms were deployed at Ditch E on 4/3/23.
Booms were removed at Ditch E on 12/15/23 due to the onset of freezing conditions.
Foam volumes are approximate based on the visual observation at the time of collection
Bold = Foam Observed

Table 7
Laboratory Analytical Results
Tyco Fire Products LP
Marinette, Wisconsin

	Sample ID	COLLAPSED SW FOAM (5-22-23)	COLLAPSED SW FOAM (8-9-23)	COLLAPSED SW FOAM (10-9-23)
	Sample Date	5/22/2023	8/9/2023	10/9/2023
Per- and Polyfluoroalkyl Substances	Units			
PFBA	ng/L	180	290	540
PFPeA	ng/L	390	440	2,200
PFHxA	ng/L	3,500	1,500	3,700
PFHpA	ng/L	1,400	240	970
PFOA	ng/L	370,000 D	2,600	8,100 D
PFNA	ng/L	180,000 D	1,400	6,800 D
PFDA	ng/L	17,000 D	500	1,400
PFUnA	ng/L	5,000 D	160	460
PFDoA	ng/L	240	18 J	53
PFTriA	ng/L	37	< 20 U	< 20 U
PFTeA	ng/L	26	< 20 U	9.8 J
PFHxDA	ng/L	< 20 U	< 20 U	< 20 U
PFODA	ng/L	< 20 U	< 20 UJ	< 20 UJ
PFBS	ng/L	9.0 J	11 J	31
PFPeS	ng/L	8.4 J	< 20 U	< 20 U
PFHxS	ng/L	2,000	63	200
PFHpS	ng/L	2,500	14 J	110
PFOS	ng/L	360,000 D	6,700 D	27,000 D
PFNS	ng/L	110	< 20 U	19 J
PFDS	ng/L	200	8.4 J	26
PFDoS	ng/L	< 20 U	< 20 U	< 20 U
4:2 FTS	ng/L	90	20	38
6:2 FTS	ng/L	82,000 DJ-	4,700 D	8,400 D
8:2 FTS	ng/L	79,000 DJ-	8,800 D	26,000 D
10:2 FTS	ng/L	610	34	91
FOSA	ng/L	29,000 D	560	2,200
NMeFOSA	ng/L	24	< 20 U	< 20 U
NEtFOSA	ng/L	44	< 20 U	< 20 U
NMeFOSAA	ng/L	500 J	13 J	45 J
NEtFOSAA	ng/L	16,000 D	260	900
NMeFOSE	ng/L	< 40 U	< 40 U	< 40 U
NEtFOSE	ng/L	25	< 20 U	18 J
HFPO-DA	ng/L	< 40 U	< 40 U	< 40 U
DONA	ng/L	< 20 U	< 20 U	< 20 U
9Cl-PF3ONS	ng/L	< 20 U	< 20 U	< 20 U
11Cl-PF3OUdS	ng/L	< 20 U	< 20 U	< 20 U

Table 7
Laboratory Analytical Results
Tyco Fire Products LP
Marinette, Wisconsin

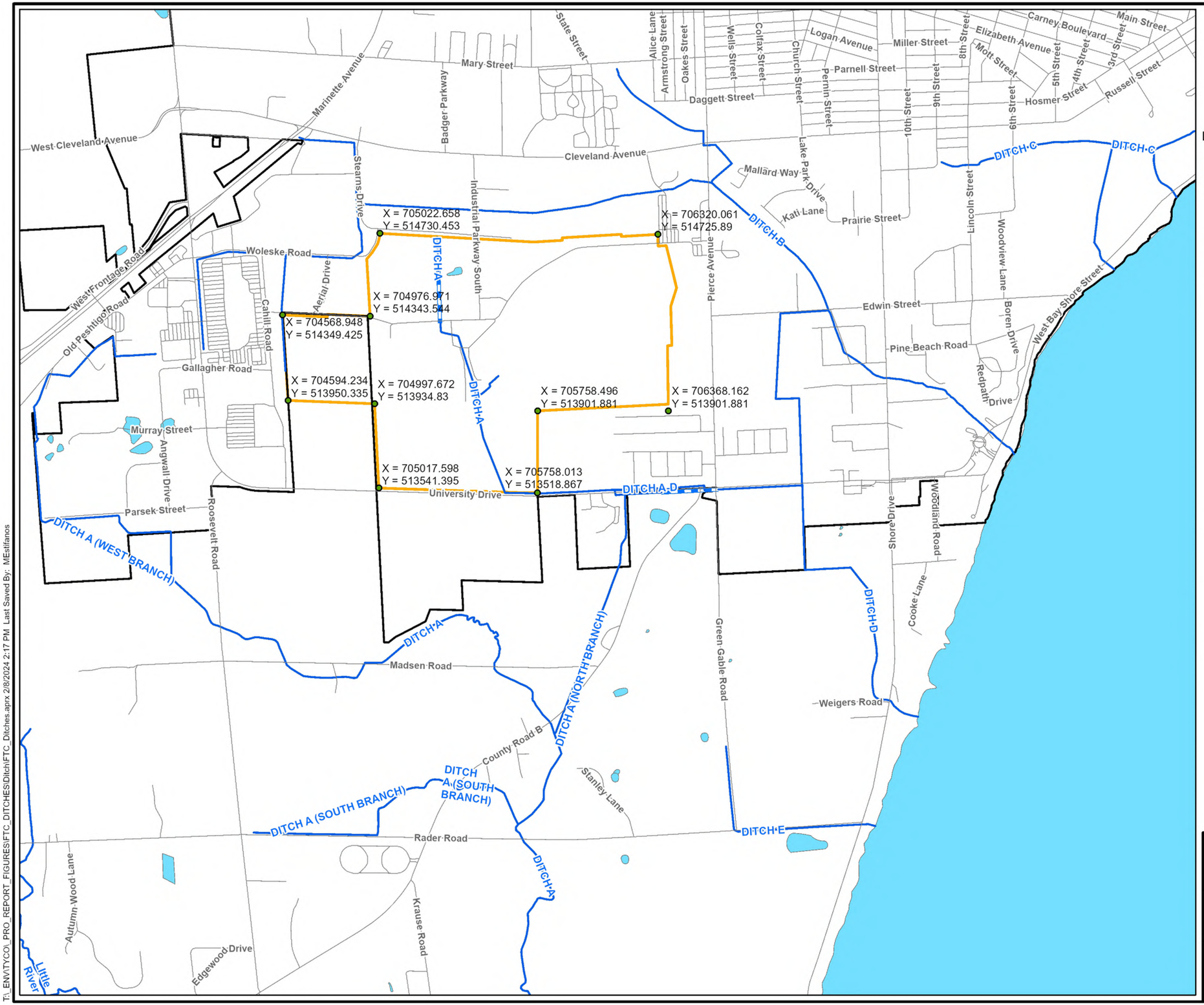
Notes:
<= Compound not detected at method detection limit
-- = Not sampled
ng/L = Nanograms per liter
µg/L = Micrograms per liter

Data Qualifiers:
D = Dilution required for sample analysis
J = The result is an estimated quantity. The associated numberical value is the approximate concentration of the analyte in the sample
U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

Analyte Abbreviations:

PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeA	Perfluorotetradecanoic acid
PFHxDA	Perfluorohexadecanoic acid
PFODA	Perfluorooctadecanoic acid
PFBS	Perfluorobutanesulfonic acid
PFPeS	Perfluoropentanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHpS	Perfluoroheptanesulfonic acid
PFOS	Perfluorooctanesulfonic acid
PFNS	Perfluorononanesulfonic acid
PFDS	Perfluorodecanesulfonic acid
PFDoS	Perfluorododecanesulfonic acid
4:2 FTS	4:2 Fluorotelomer sulfonic acid
6:2 FTS	6:2 Fluorotelomer sulfonic acid
8:2 FTS	8:2 Fluorotelomer sulfonic acid
10:2 FTS	10:2 Fluorotelomer sulfonic acid
FOSA	Perfluorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
HFPO-DA	Hexafluoropropylene oxide dimer acid
DONA	4,8-Dioxa-3H-perfluorononanoic acid
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid

Figures



LEGEND:

- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- DITCH OR STREAM
- CULVERT
- WATERBODY

NOTES:

1. CITY BOUNDARY DATA SOURCE: WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU, WISCONSIN COUNTY CLERKS AND LAND INFORMATION OFFICES, ACCESSED FALL 2017.
2. DITCH/STREAM AND WATERBODY DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
3. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
4. COORDINATES ARE PRESENTED USING WISCONSIN TRANSVERSE MERCATOR 91 METERS AND LATITUDE/LONGITUDE COORDINATE SYSTEMS.

0 1,500 3,000

GRAPHIC SCALE IN FEET

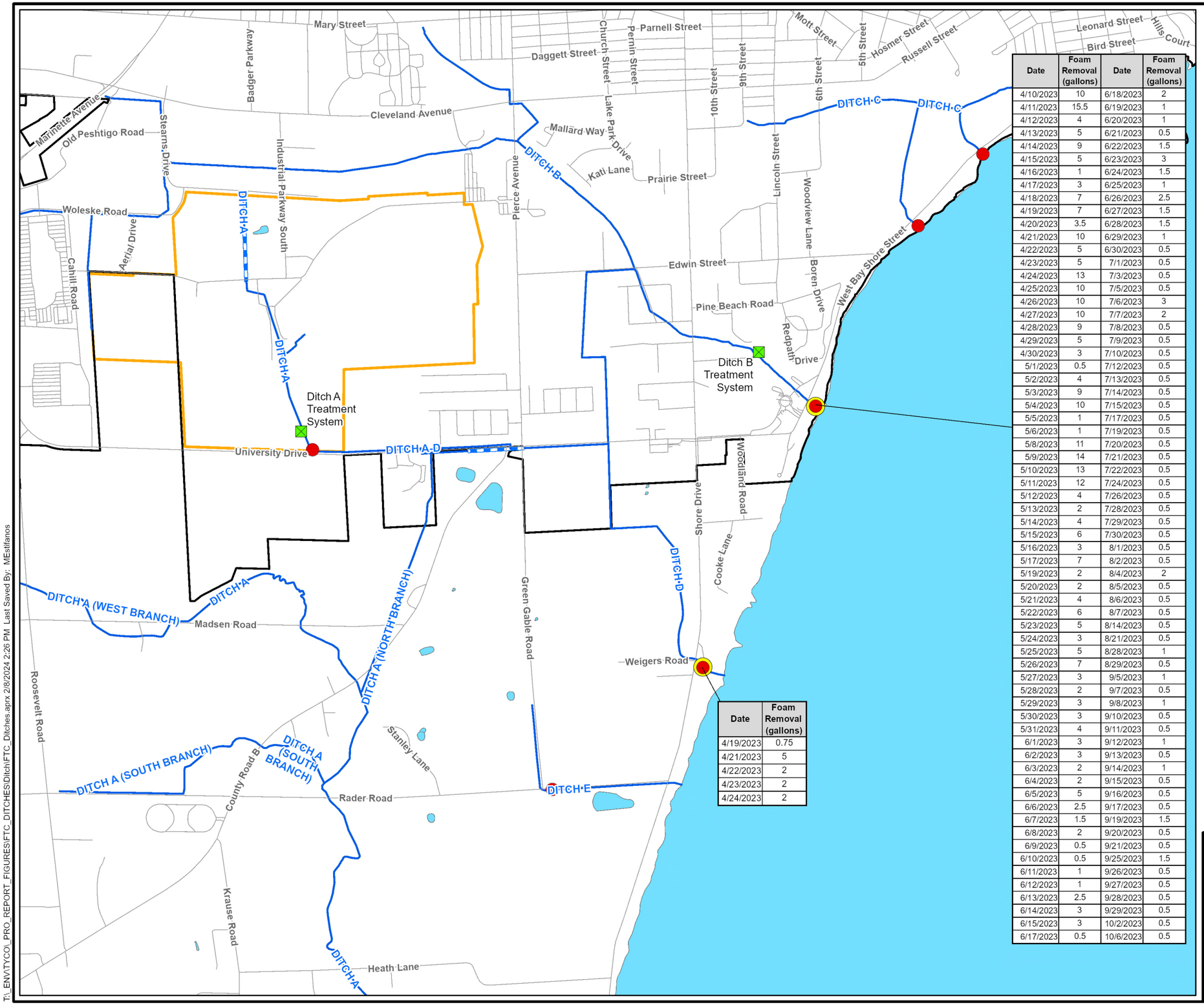
TYCO FIRE PRODUCTS LP
FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

SITE LOCATION MAP

ARCADIS

FIGURE 1

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC_DITCHES\Ditch\FTC_Ditches.aprx 2/8/2024 2:17 PM Last Saved By: MEstifanos



Date	Foam Removal (gallons)	Date	Foam Removal (gallons)
4/10/2023	10	6/18/2023	2
4/11/2023	15.5	6/19/2023	1
4/12/2023	4	6/20/2023	1
4/13/2023	5	6/21/2023	0.5
4/14/2023	9	6/22/2023	1.5
4/15/2023	5	6/23/2023	3
4/16/2023	1	6/24/2023	1.5
4/17/2023	3	6/25/2023	1
4/18/2023	7	6/26/2023	2.5
4/19/2023	7	6/27/2023	1.5
4/20/2023	3.5	6/28/2023	1.5
4/21/2023	10	6/29/2023	1
4/22/2023	5	6/30/2023	0.5
4/23/2023	5	7/1/2023	0.5
4/24/2023	13	7/3/2023	0.5
4/25/2023	10	7/5/2023	0.5
4/26/2023	10	7/6/2023	3
4/27/2023	10	7/7/2023	2
4/28/2023	9	7/8/2023	0.5
4/29/2023	5	7/9/2023	0.5
4/30/2023	3	7/10/2023	0.5
5/1/2023	0.5	7/12/2023	0.5
5/2/2023	4	7/13/2023	0.5
5/3/2023	9	7/14/2023	0.5
5/4/2023	10	7/15/2023	0.5
5/5/2023	1	7/17/2023	0.5
5/6/2023	1	7/19/2023	0.5
5/8/2023	11	7/20/2023	0.5
5/9/2023	14	7/21/2023	0.5
5/10/2023	13	7/22/2023	0.5
5/11/2023	12	7/24/2023	0.5
5/12/2023	4	7/26/2023	0.5
5/13/2023	2	7/28/2023	0.5
5/14/2023	4	7/29/2023	0.5
5/15/2023	6	7/30/2023	0.5
5/16/2023	3	8/1/2023	0.5
5/17/2023	7	8/2/2023	0.5
5/19/2023	2	8/4/2023	2
5/20/2023	2	8/5/2023	0.5
5/21/2023	4	8/6/2023	0.5
5/22/2023	6	8/7/2023	0.5
5/23/2023	5	8/14/2023	0.5
5/24/2023	3	8/21/2023	0.5
5/25/2023	5	8/28/2023	1
5/26/2023	7	8/29/2023	0.5
5/27/2023	3	9/5/2023	1
5/28/2023	2	9/7/2023	0.5
5/29/2023	3	9/8/2023	1
5/30/2023	3	9/10/2023	0.5
5/31/2023	4	9/11/2023	0.5
6/1/2023	3	9/12/2023	1
6/2/2023	3	9/13/2023	0.5
6/3/2023	2	9/14/2023	1
6/4/2023	2	9/15/2023	0.5
6/5/2023	5	9/16/2023	0.5
6/6/2023	2.5	9/17/2023	0.5
6/7/2023	1.5	9/19/2023	1.5
6/8/2023	2	9/20/2023	0.5
6/9/2023	0.5	9/21/2023	0.5
6/10/2023	0.5	9/25/2023	1.5
6/11/2023	1	9/26/2023	0.5
6/12/2023	1	9/27/2023	0.5
6/13/2023	2.5	9/28/2023	0.5
6/14/2023	3	9/29/2023	0.5
6/15/2023	3	10/2/2023	0.5
6/17/2023	0.5	10/6/2023	0.5

Date	Foam Removal (gallons)
4/19/2023	0.75
4/21/2023	5
4/22/2023	2
4/23/2023	2
4/24/2023	2

LEGEND:

- APPROXIMATE BOOM DEPLOYMENT LOCATIONS
- APPROXIMATE FOAM REMOVAL LOCATION
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- ROAD
- CULVERT
- DITCH OR STREAM
- WATERBODY
- SURFACE WATER TREATMENT SYSTEM

NOTES:

1. CITY BOUNDARY DATA SOURCE: WISCONSIN LEGISLATIVE TECHNOLOGY SERVICES BUREAU, WISCONSIN COUNTY CLERKS AND LAND INFORMATION OFFICES, ACCESSED FALL 2017.
2. DITCH/STREAM AND WATERBODY DATA SOURCE: U.S. GEOLOGICAL SURVEY NATIONAL HYDROGRAPHY DATASET, ACCESSED FALL 2017.
3. ROAD DATA SOURCE: OPEN STREET MAP, ACCESSED FALL 2017.
4. FOAM REMOVAL VOLUMES ARE APPROXIMATE BASED ON VISUAL OBSERVATION AT THE TIME OF COLLECTION.
5. BOOMS WERE DEPLOYED ON DITCHES A, B, C, D, AND E BETWEEN 4/3/23 AND 4/10/23.
6. BOOMS WERE REMOVED FROM DITCHES A, B, C, D, AND E ON 12/15/23.

0 1,500 3,000

GRAPHIC SCALE IN FEET

TYCO FIRE PRODUCTS LP
MARINETTE, WISCONSIN

BOOM DEPLOYMENT AND FOAM REMOVAL LOCATIONS

ARCADIS

FIGURE 2

T:_ENV\TYCO_PRO_REPORT_FIGURES\FTC_DITCHES\Ditch\FTC_Ditches.aprx 2/8/2024 2:26 PM Last Saved By: MEstifanos

Attachment 1

Foam Observation Photo Log

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 1

Date: 4/10/2023

Weather: Cloudy, 4.5 mph wind (S), No precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 2

Date: 4/11/2023

Weather: Cloudy, 5.3 mph wind (SW), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 15.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 3

Date: 4/12/2023

Weather: Sunny, 5.7 mph wind (SSW), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 4

Date: 4/13/2023

Weather: Sunny, 4.7 mph wind (S), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 5

Date: 4/14/2023

Weather: Sunny, 2.5 mph wind (SSE), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 9 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 6

Date: 4/15/2023

Weather: Cloudy, 1.0 mph wind (SE), No precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 7

Date: 4/16/2023

Weather: Rain, 6.0 mph wind (NE), 0.6 inches precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 8

Date: 4/17/2023

Weather: Cloudy, 11.5 mph wind (NW), 0.08 inches precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 9

Date: 4/18/2023

Weather: Partly cloudy, 11.7 mph wind (W), No precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 7 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 10

Date: 4/19/2023

Weather: Cloudy, 2.5 mph wind (NW), 0.13 inches precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 7 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 11

Date: 4/20/2023

Weather: Cloudy, 9.5 mph wind (ENE), 0.26 inches precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 3.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 12

Date: 4/19/2023

Weather: Cloudy, 2.5 mph wind (NW), 0.13 inches precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch D. Shore Drive crossing

Photograph: 13

Date: 4/19/2023

Weather: Cloudy, 2.5 mph wind (NW), 0.13 inches precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 0.25 gal

Location: South ditch along University Drive (approximately 600 ft east of Pierce Avenue intersection)

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 14

Date: 4/21/2023

Weather: Sunny, 6 mph wind (SSW), No precipitation

Foam Description: White/tan, some froth

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 15

Date: 4/22/2023

Weather: Cloudy, 6 mph wind (W), No precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 16

Date: 4/23/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 17

Date: 4/24/2023

Weather: Cloudy, 2.5 mph wind (NW), No precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 13 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 18

Date: 4/25/2023

Weather: Cloudy, 5 mph wind (NNW), No precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 19

Date: 4/21/2023

Weather: Sunny, 6 mph wind (SSW), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch D. Shore Drive crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 20

Date: 4/22/2023

Weather: Cloudy, 6 mph wind (W), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch D. Shore Drive crossing

Photograph: 21

Date: 4/23/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch D. Shore Drive crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 22

Date: 4/24/2023

Weather: Cloudy, 2.5 mph wind (NW), No precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch D. Shore Drive crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 23

Date: 4/26/2023

Weather: Sunny, 2.0 mph wind (WSW), No precipitation

Foam Description: White/tan, frothy

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 24

Date: 4/27/2023

Weather: Cloudy, 4.3 mph wind (S), 0.02 inches precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 25

Date: 4/28/2023

Weather: Partly cloudy, 4.5 mph wind (NNE), No precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 9 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 26

Date: 4/29/2023

Weather: Cloudy, 1.5 mph wind (ESE), 0.04 inches precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 27

Date: 4/30/2023

Weather: Rain, 5.3 mph wind (WNW), 0.18 inches precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 28

Date: 5/1/2023

Weather: Snow, 9 mph wind (WNW), 0.4 inches precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 29

Date: 5/2/2023

Weather: Cloudy, 11 mph wind (NW), No precipitation

Foam Description: White, frothy

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 30

Date: 5/3/2023

Weather: Partly Cloudy, 6 mph wind (NNW), No precipitation

Foam Description: Tan, frothy

Uncollapsed Foam Volume Collected: 9 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 31

Date: 5/4/2023

Weather: Cloudy, 2 mph wind (ESE), 0.01 inches precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 10 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 32

Date: 5/5/2023

Weather: Cloudy, 4 mph wind (ESE), 0.13 inches precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 33

Date: 5/6/2023

Weather: Partly cloudy, 3 mph wind (SSE), 0.19 inches precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 34

Date: 5/7/2023

Weather: Cloudy, 2 mph wind (NNE), 0.96 inches precipitation

Foam Description: No foam observed

Uncollapsed Foam Volume Collected: No foam collected

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 35

Date: 5/8/2023

Weather: Cloudy, 1.7 mph wind (NE), No precipitation

Foam Description: White/Tan, frothy

Uncollapsed Foam Volume Collected: 11 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 36

Date: 5/9/2023

Weather: Sunny, No wind, No precipitation

Foam Description: White/Tan, frothy

Uncollapsed Foam Volume Collected: 14 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 37

Date: 5/10/2023

Weather: Sunny, 2 mph wind (S), No precipitation

Foam Description: White/Tan, frothy

Uncollapsed Foam Volume Collected: 13 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 38

Date: 5/11/2023

Weather: Cloudy, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 12 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 39

Date: 5/12/2023

Weather: Cloudy, 2 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 40

Date: 5/13/2023

Weather: Cloudy, 8 mph wind (NNE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 41

Date: 5/14/2023

Weather: Cloudy, 8 mph wind (NNE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 42

Date: 5/15/2023

Weather: Partly cloudy, 4 mph wind (SW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 6 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 43

Date: 5/16/2023

Weather: Cloudy, 6 mph wind (WSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 44

Date: 5/17/2023

Weather: Sunny, 4 mph wind (NNE) wind, No precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 7 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 45

Date: 5/19/2023

Weather: Cloudy, 4 mph wind (WSW), 0.16 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 46

Date: 5/20/2023

Weather: Sunny, 8.5 mph wind (NW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 47

Date: 5/21/2023

Weather: Cloudy, 1 mph wind (ENE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 48

Date: 5/22/2023

Weather: Cloudy, 2 mph wind (ESE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 6 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 49

Date: 5/23/2023

Weather: Cloudy, No wind, No precipitation

Foam Description: White/Brown, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 50

Date: 5/24/2023

Weather: Cloudy, 8.3 mph wind (N), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 51

Date: 5/25/2023

Weather: Cloudy, 5 mph wind (NE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 52

Date: 5/26/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 7 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 53

Date: 5/27/2023

Weather: Sunny, 7 mph wind (SE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 54

Date: 5/28/2023

Weather: Cloudy, 3 mph wind (ESE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 55

Date: 5/29/2023

Weather: Sunny, 5.3 mph wind (N), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 56

Date: 5/30/2023

Weather: Sunny, 3.3 mph wind (SSW), No precipitation

Foam Description: White/Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 57

Date: 5/31/2023

Weather: Sunny, 4.7 mph wind (SE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 4 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 58

Date: 6/1/2023

Weather: Sunny, 1.5 mph wind (ESE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 59

Date: 6/2/2023

Weather: Sunny, 1 mph wind (SE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 60

Date: 6/3/2023

Weather: Sunny, 4 mph wind (NNE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 61

Date: 6/4/2023

Weather: Sunny, 4 mph wind (NE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 62

Date: 6/5/2023

Weather: Sunny, 2 mph wind (SW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 63

Date: 6/6/2023

Weather: Sunny, 8 mph wind (NNE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 64

Date: 6/7/2023

Weather: Sunny, 4.5 mph wind (NE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 65

Date: 6/8/2023

Weather: Sunny, 1.5 mph wind (NNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 66

Date: 6/9/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 67

Date: 6/10/2023

Weather: Sunny, 5 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 68

Date: 6/11/2023

Weather: Sunny, 5 mph wind (NNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 69

Date: 6/12/2023

Weather: Cloudy, 2 mph wind (WSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 70

Date: 6/13/2023

Weather: Rainy, 4 mph wind (WSW), 0.65 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 71

Date: 6/14/2023

Weather: Cloudy, 1.3 mph wind (NW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 72

Date: 6/15/2023

Weather: Cloudy, 8 mph wind (NW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 73

Date: 6/17/2023

Weather: Sunny, 5 mph wind (ESE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 74

Date: 6/18/2023

Weather: Sunny, 1 mph wind (SE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 75

Date: 6/19/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 76

Date: 6/20/2023

Weather: Sunny, 5 mph wind (NNE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 77

Date: 6/21/2023

Weather: Sunny, 2 mph wind (NE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 78

Date: 6/22/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 79

Date: 6/23/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 80

Date: 6/24/2023

Weather: Sunny, 2.3 mph wind (SSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 81

Date: 6/25/2023

Weather: Cloudy, 3.5 mph wind (ESE), 0.38 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 82

Date: 6/26/2023

Weather: Rain, 7.5 mph wind (NNW), 0.7 inches precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 83

Date: 6/27/2023

Weather: Sunny, 6 mph wind (NNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 84

Date: 6/28/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 85

Date: 6/29/2023

Weather: Cloudy, 4 mph wind (SW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 86

Date: 6/30/2023

Weather: Sunny, 4 mph wind (WNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 87

Date: 7/1/2023

Weather: Sunny, 1 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 88

Date: 7/3/2023

Weather: Partly Cloudy, 2.3 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 89

Date: 7/5/2023

Weather: Sunny, 2 mph wind (W), 0.63 in precipitation

Foam Description: Brown/white, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 90

Date: 7/6/2023

Weather: Sunny, 6 mph wind (NW), 0.64 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 3 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 91

Date: 7/7/2023

Weather: Sunny, 3 mph wind (NW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 92

Date: 7/8/2023

Weather: Sunny, 2 mph wind (N), 0.16 in precipitation

Foam Description: Tan, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 93

Date: 7/9/2023

Weather: Sunny, 2 mph wind (NNW), 0.16 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 94

Date: 7/10/2023

Weather: Partly Cloudy, 1.5 mph wind (SW), 0.58 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 95

Date: 7/12/2023

Weather: Cloudy, 2 mph wind (SSW), 0.08 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 96

Date: 7/13/2023

Weather: Cloudy, 2 mph wind (WNW), 0.09 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 97

Date: 7/14/2023

Weather: Sunny, 6 mph wind (W), 0.04 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 98

Date: 7/15/2023

Weather: Sunny, 3 mph wind (WSW), 0.07 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 99

Date: 7/17/2023

Weather: Sunny, 4 mph wind (WSW), 0.11 in precipitation

Foam Description: White, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 100

Date: 7/19/2023

Weather: Sunny, 3 mph wind (NE), 0.06 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 101

Date: 7/20/2023

Weather: Partly Cloudy, 2 mph wind (NW), 0.09 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 102

Date: 7/21/2023

Weather: Sunny, 3 mph wind (ENE), 0.08 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 103

Date: 7/22/2023

Weather: Sunny, 2 mph wind (SW), 0.03 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 104

Date: 7/24/2023

Weather: Sunny, 4 mph wind (NNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 105

Date: 7/26/2023

Weather: Cloudy, 5 mph wind (S), 0.05 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 106

Date: 7/28/2023

Weather: Sunny, No wind, 0.37 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 107

Date: 7/29/2023

Weather: Sunny, 7 mph wind (NNE), 0.15 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 108

Date: 7/30/2023

Weather: Sunny, 3 mph wind (W), 0.03 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 109

Date: 8/1/2023

Weather: Sunny, 1 mph wind (N), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 110

Date: 8/2/2023

Weather: Sunny, 4.5 mph (SW) wind, 0.89 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 111

Date: 8/4/2023

Weather: Sunny, 3 mph wind (NNE), 0.01 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 2 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 112

Date: 8/5/2023

Weather: Sunny, 4 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 113

Date: 8/6/2023

Weather: Sunny, 2.7 mph wind (ENE), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 114

Date: 8/7/2023

Weather: Sunny, 3 mph wind (N), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 115

Date: 8/14/2023

Weather: Rainy, 5 mph wind (NW), 0.16 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 116

Date: 8/21/2023

Weather: Cloudy, 2 mph wind (N), No precipitation

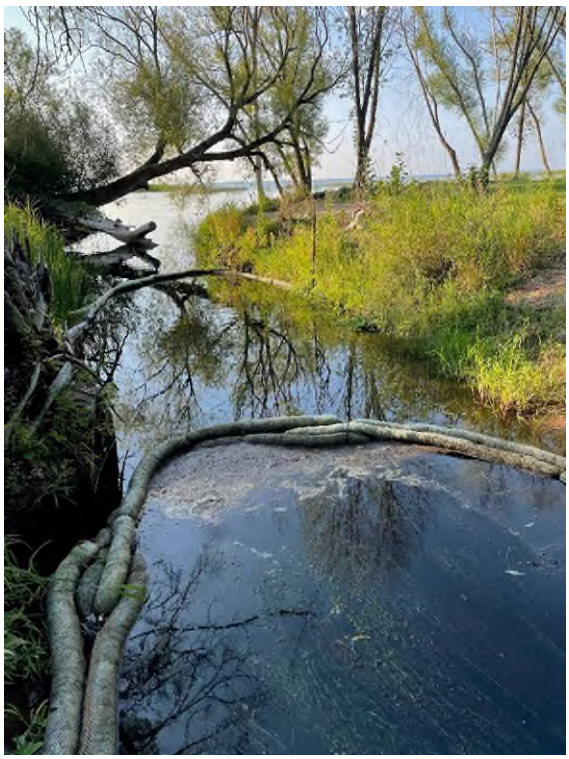
Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin



Photograph: 117

Date: 8/28/2023

Weather: Sunny, 1 mph wind (SW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 118

Date: 8/29/2023

Weather: Partly Cloudy, 3 mph wind (WNW), 0.12 inches precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 119

Date: 9/5/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 120

Date: 9/7/2023

Weather: Cloudy, 5 mph (NNW) wind, 0.09 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 121

Date: 9/8/2023

Weather: Cloudy, 3.5 mph wind (N), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 122

Date: 9/10/2023

Weather: Sunny, 1 mph wind (ENE), 0.29 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 123

Date: 9/11/2023

Weather: Cloudy, 2 mph wind (NNE), 0.04 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 124

Date: 9/12/2023

Weather: Sunny, 4 mph wind (NW), 0.04 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 125

Date: 9/13/2023

Weather: Cloudy, 1 mph wind (WNW), 0.01 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 126

Date: 9/14/2023

Weather: Cloudy, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1 gal

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 127

Date: 9/15/2023

Weather: Partly Cloudy, 3 mph wind (SSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 128

Date: 9/16/2023

Weather: Sunny, 2 mph wind (W), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 129

Date: 9/17/2023

Weather: Cloudy, 5 mph wind (NNW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 130

Date: 9/19/2023

Weather: Cloudy, no wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 131

Date: 9/20/2023

Weather: Cloudy, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 132

Date: 9/21/2023

Weather: Cloudy, 1 mph (SSW) wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 133

Date: 9/25/2023

Weather: Cloudy, 1 mph wind (E), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 1.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 134

Date: 9/26/2023

Weather: Cloudy, 3 mph wind (ENE), 0.14 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 135

Date: 9/27/2023

Weather: Cloudy, 3 mph wind (ENE), 0.19 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 136

Date: 9/28/2023

Weather: Sunny, 2 mph wind (E), 0.03 in precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 137

Date: 9/29/2023

Weather: Sunny, No wind, No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Photograph: 138

Date: 10/2/2023

Weather: Sunny, 4 mph wind (SSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Photograph Log

Tyco Fire Products LP
Marinette, Wisconsin

Photograph: 139

Date: 10/6/2023

Weather: Cloudy, 4 mph wind (WSW), No precipitation

Foam Description: Brown, some froth

Uncollapsed Foam Volume Collected: 0.5 gal

Location: Ditch B. West Bay Shore Street crossing

Attachment 2

Transportation and Disposal Documentation

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
WIT560011850	1	(262) 339-8762	W026-001-23-06

5. Generator's Name and Mailing Address
Att: Ryan Suennen
JCI/Tyco
1 Stanton Street
Marinette WI 54143
Generator's Phone: 715 753-7411 Ext. 84025

Generator's Site Address (if different than mailing address)
JCI/Tyco
2700 Industrial Parkway S
Marinette WI 54143

6. Transporter 1 Company Name — **U.S. EPA ID Number**
Endpoint Waste Solutions Corp. — WIR000170027

7. Transporter 2 Company Name — **U.S. EPA ID Number**

8. Designated Facility Name and Site Address — **U.S. EPA ID Number**
Endpoint Waste Solutions Corp.
1024 Western Drive
Hartford WI 53027
Facility's Phone: 414 427-1200
License 4704

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-RCRA, Non-DOT	0001	DF	15	G	
2.	Non-RCRA, Non-DOT	0002	TP	200	P	
3.						
4.						

13. Special Handling Instructions and Additional Information
1. Skimmed Surface Water/Foam Profile# 05162022TIP-01
2. RCRA Empty Totes

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: X Tim Hanson — Signature: X [signature] — Month 7 Day 7 Year 23

INT'L
15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER
16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Steven Bachtell — Signature: [signature] — Month 7 Day 7 Year 23
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY
17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Fred J Ringle — Signature: Fred J Ringle — Month 07 Day 10 Year 23

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DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
WIT560011850	1	(800)-424-9300	W026-001-23-13

5. Generator's Name and Mailing Address
JCI/Tyco
1 Stanton Street
Marinette WI 54143
Att: Ryan Suennen
Generator's Phone: 715 753-7411 Ext. 84025

Generator's Site Address (if different than mailing address)
JCI/Tyco
2700 Industrial Parkway S
Marinette WI 54143

6. Transporter 1 Company Name
Endpoint Waste Solutions Corp.
U.S. EPA ID Number: WIR000170027

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Endpoint Waste Solutions Corp.
S83 W18781 Saturn Drive
Muskego WI 53150
Facility's Phone: 414 858-2104
U.S. EPA ID Number: License 4704

GENERATOR

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-RCRA, Non-DOT	0001	DF	0015	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
1. Skimmed Surface Water/Foam Profile# 05162022TIP-01 1x55 gal

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Trevor Roubal
Signature: Trevor Roubal
Month: 8 Day: 15 Year: 23

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tim Hanson
Signature:
Month: 8 Day: 15 Year: 23

Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Fred J Ringle
Signature: Fred J Ringle
Month: 08 Day: 15 Year: 23

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
WIT560011850	1	(800)-424-9300	W026-001-23-17

5. Generator's Name and Mailing Address
JCI/Tyco
1 Stanton Street
Marinette WI 54143
Att: Ryan Suennen
Generator's Phone: 715 753-7411 Ext. 84025

Generator's Site Address (if different than mailing address)
JCI/Tyco
2700 Industrial Parkway S
Marinette WI 54143

6. Transporter 1 Company Name
Endpoint Waste Solutions Corp.
U.S. EPA ID Number: WIR000182972

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Endpoint Waste Solutions Corp.
S83 W18761 Saturn Drive
Muskego WI 53150
Facility's Phone: 414 858-2104
U.S. EPA ID Number: License 4959

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-RCRA, Non-DOT	017	DF	935	G	
2.	Non-RCRA, Non-DOT	008	DM	4,800	P	
3.	Non-RCRA, Non-DOT	001	DM	200	P	
4.	Non-RCRA, Non-DOT	001	DF	70	P	

13. Special Handling Instructions and Additional Information
1. Bag Filters, Jute Filter, BoomsProfile# 05162022TIP-03 1 DM
2. Waste Flux Profile# 05162022TIP-04
3. Bag House Dust Profile# 05162022TIP-05
4. Skimmed Surface Water Foam Profile# 05162022TIP-01

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Steve Bachtell (On behalf of Tyco) | Signature: Steve Bachtell | Month 11 | Day 7 | Year 23

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Mathew Shaw | Signature: Mathew Shaw | Month 11 | Day 7 | Year 23

Transporter 2 Printed/Typed Name: | Signature: | Month | Day | Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Mathew Shaw | Signature: Mathew Shaw | Month 11 | Day 08 | Year 23

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

Attachment 3

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Lisa Rutkowski
ARCADIS US Inc
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Generated 6/13/2023 5:05:50 PM

JOB DESCRIPTION

Marinette, WI 30171092.4.1.3 Collapsed Foam

JOB NUMBER

500-234252-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

myEOL

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization

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6/13/2023 5:05:50 PM

Authorized for release by
Sandie Fredrick, Project Manager II
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

Table of Contents

Job ID: 500-234252-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-234252-1

Receipt
The sample was received on 5/23/2023 9:30 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8º C.

LCMS
Method 537 (modified): The concentration of one or more analyte associated with the following samples exceeded the instrument calibration range: Collapsed SW Foam (5-22-23) (500-234252-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The samples were diluted within calibration range, and both sets of data were reported.

Method 537 (modified): The method blank for preparation batch 320-678381 and analytical batch 320-678709 contained 6:2 FTS above the method detection limit (MDL). Associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 537 (modified): The continuing calibration verification (CCV) associated with the dilution analyses in batch 320-678850 recovered outside control limits for Perfluoro-n-octadecanoic acid (PFODA). This analyte was not over calibration range in the original analysis, therefore the data is reported.are not reported.

Method 537 (modified): Results for sample Collapsed SW Foam (5-22-23) (500-234252-1) were reported from the analysis of a diluted extract due to high concentration of the matrix in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. The percent recovery for the internal standard in the 100X analysis is 122% after the dilution factor was applied to the labeled internal standard area count.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: Collapsed SW Foam (5-22-23) (500-234252-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. The client as contacted and gave permission to report.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: Collapsed SW Foam (5-22-23) (500-234252-1). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. Collapsed SW Foam (5-22-23) (500-234252-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3535: The following sample was dark brown and contained a foam prior to extraction: Collapsed SW Foam (5-22-23) (500-234252-1).
320-678381
Method: 3535_PFC
Matrix: Aqueous

Method 3535: Per client request, the initial volume used for the following sample deviated from the standard procedure: Collapsed SW Foam (5-22-23) (500-234252-1). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.
320-678381
Method: 3535_PFC
Matrix: Aqueous

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-678381.

Job ID: 500-234252-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

Method: 3535_PFC
Matrix: Aqueous

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-234252-1	Collapsed SW Foam (5-22-23)	Water	05/22/23 09:45	05/23/23 09:30

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (5-22-23)
Lab Sample ID: 500-234252-1
Date Collected: 05/22/23 09:45
Matrix: Water
Date Received: 05/23/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**180**		50	24	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoropentanoic acid (PFPeA)	**390**		20	4.9	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorohexanoic acid (PFHxA)	**3500**		20	5.8	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoroheptanoic acid (PFHpA)	**1400**		20	2.5	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorooctanoic acid (PFOA)	**160000**	**E**	20	8.5	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorononanoic acid (PFNA)	**90000**	**E**	20	2.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorodecanoic acid (PFDA)	**16000**	**E**	20	3.1	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoroundecanoic acid (PFUnA)	**4100**	**E**	20	11	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorododecanoic acid (PFDoA)	**240**		20	5.5	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorotridecanoic acid (PFTriA)	**37**		20	13	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorotetradecanoic acid (PFTeA)	**26**		20	7.3	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.9	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoro-n-octadecanoic acid (PFODA)	<20		20	9.4	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorobutanesulfonic acid (PFBS)	**9.0**	**J**	20	2.0	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoropentanesulfonic acid (PFPeS)	**8.4**	**J**	20	3.0	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorohexanesulfonic acid (PFHxS)	**2000**		20	5.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluoroheptanesulfonic acid (PFHpS)	**2500**		20	1.9	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorooctanesulfonic acid (PFOS)	**270000**	**E**	20	5.4	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorononanesulfonic acid (PFNS)	**110**		20	3.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorodecanesulfonic acid (PFDS)	**200**		20	3.2	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
Perfluorooctanesulfonamide (FOSA)	**24000**	**E**	20	9.8	ng/L		05/27/23 07:26	05/30/23 13:49	1
NEtFOSA	**44**		20	8.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
NMeFOSA	**24**		20	4.3	ng/L		05/27/23 07:26	05/30/23 13:49	1
NMeFOSAA	**500**	**I**	50	12	ng/L		05/27/23 07:26	05/30/23 13:49	1
NEtFOSAA	**12000**	**E**	50	13	ng/L		05/27/23 07:26	05/30/23 13:49	1
NMeFOSE	<40		40	14	ng/L		05/27/23 07:26	05/30/23 13:49	1
NEtFOSE	**25**		20	8.5	ng/L		05/27/23 07:26	05/30/23 13:49	1
4:2 FTS	**90**		20	2.4	ng/L		05/27/23 07:26	05/30/23 13:49	1
6:2 FTS	**42000**	**E B**	50	25	ng/L		05/27/23 07:26	05/30/23 13:49	1
8:2 FTS	**40000**	**E**	20	4.6	ng/L		05/27/23 07:26	05/30/23 13:49	1
10:2 FTS	**610**		20	6.7	ng/L		05/27/23 07:26	05/30/23 13:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<20		20	4.0	ng/L		05/27/23 07:26	05/30/23 13:49	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<40		40	15	ng/L		05/27/23 07:26	05/30/23 13:49	1
F-53B Major	<20		20	2.4	ng/L		05/27/23 07:26	05/30/23 13:49	1
F-53B Minor	<20		20	3.2	ng/L		05/27/23 07:26	05/30/23 13:49	1

Client Sample ID: Collapsed SW Foam (5-22-23)
Lab Sample ID: 500-234252-1

Date Collected: 05/22/23 09:45
Matrix: Water
Date Received: 05/23/23 09:30

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	81		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C5 PFPeA	104		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFHxA	128		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C4 PFHpA	107		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C4 PFOA	61		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C5 PFNA	63		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFDA	69		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFUnA	105		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFDoA	57		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFTeDA	34		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 PFHxDA	25		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C3 PFBS	127		25 - 150	05/27/23 07:26	05/30/23 13:49	1
18O2 PFHxS	147		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C4 PFOS	65		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C8 FOSA	53		10 - 150	05/27/23 07:26	05/30/23 13:49	1
d3-NMeFOSAA	55		25 - 150	05/27/23 07:26	05/30/23 13:49	1
d5-NEtFOSAA	80		25 - 150	05/27/23 07:26	05/30/23 13:49	1
d-N-MeFOSA-M	65		10 - 150	05/27/23 07:26	05/30/23 13:49	1
d-N-EtFOSA-M	64		10 - 150	05/27/23 07:26	05/30/23 13:49	1
d7-N-MeFOSE-M	68		10 - 150	05/27/23 07:26	05/30/23 13:49	1
d9-N-EtFOSE-M	63		10 - 150	05/27/23 07:26	05/30/23 13:49	1
M2-4:2 FTS	194	*5+	25 - 150	05/27/23 07:26	05/30/23 13:49	1
M2-6:2 FTS	175	*5+	25 - 150	05/27/23 07:26	05/30/23 13:49	1
M2-8:2 FTS	464	*5+	25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C3 HFPO-DA	111		25 - 150	05/27/23 07:26	05/30/23 13:49	1
13C2 10:2 FTS	97		25 - 150	05/27/23 07:26	05/30/23 13:49	1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5000		5000	2400	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoropentanoic acid (PFPeA)	<2000		2000	490	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorohexanoic acid (PFHxA)	**4400**		2000	580	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoroheptanoic acid (PFHpA)	**1300**	**J**	2000	250	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorooctanoic acid (PFOA)	**370000**		2000	850	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorononanoic acid (PFNA)	**180000**		2000	270	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorodecanoic acid (PFDA)	**17000**		2000	310	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoroundecanoic acid (PFUnA)	**5000**		2000	1100	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorododecanoic acid (PFDoA)	<2000		2000	550	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorotridecanoic acid (PFTriA)	<2000		2000	1300	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorotetradecanoic acid (PFTeA)	<2000		2000	730	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2000		2000	890	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoro-n-octadecanoic acid (PFODA)	<2000		2000	940	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorobutanesulfonic acid (PFBS)	<2000		2000	200	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoropentanesulfonic acid (PFPeS)	<2000		2000	300	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorohexanesulfonic acid (PFHxS)	**2100**		2000	570	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluoroheptanesulfonic acid (PFHpS)	**2400**		2000	190	ng/L		05/27/23 07:26	06/09/23 00:22	100

Client Sample ID: Collapsed SW Foam (5-22-23)
Lab Sample ID: 500-234252-1
Date Collected: 05/22/23 09:45
Matrix: Water
Date Received: 05/23/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**360000**		2000	540	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorononanesulfonic acid (PFNS)	<2000		2000	370	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorodecanesulfonic acid (PFDS)	<2000		2000	320	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorododecanesulfonic acid (PFDoS)	<2000		2000	970	ng/L		05/27/23 07:26	06/09/23 00:22	100
Perfluorooctanesulfonamide (FOSA)	**29000**		2000	980	ng/L		05/27/23 07:26	06/09/23 00:22	100
NEtFOSA	<2000		2000	870	ng/L		05/27/23 07:26	06/09/23 00:22	100
NMeFOSA	<2000		2000	430	ng/L		05/27/23 07:26	06/09/23 00:22	100
NMeFOSAA	<5000		5000	1200	ng/L		05/27/23 07:26	06/09/23 00:22	100
NEtFOSAA	**16000**		5000	1300	ng/L		05/27/23 07:26	06/09/23 00:22	100
NMeFOSE	<4000		4000	1400	ng/L		05/27/23 07:26	06/09/23 00:22	100
NEtFOSE	<2000		2000	850	ng/L		05/27/23 07:26	06/09/23 00:22	100
4:2 FTS	<2000		2000	240	ng/L		05/27/23 07:26	06/09/23 00:22	100
6:2 FTS	**82000**	**B**	5000	2500	ng/L		05/27/23 07:26	06/09/23 00:22	100
8:2 FTS	**79000**		2000	460	ng/L		05/27/23 07:26	06/09/23 00:22	100
10:2 FTS	**710**	**J**	2000	670	ng/L		05/27/23 07:26	06/09/23 00:22	100
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2000		2000	400	ng/L		05/27/23 07:26	06/09/23 00:22	100
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4000		4000	1500	ng/L		05/27/23 07:26	06/09/23 00:22	100
F-53B Major	<2000		2000	240	ng/L		05/27/23 07:26	06/09/23 00:22	100
F-53B Minor	<2000		2000	320	ng/L		05/27/23 07:26	06/09/23 00:22	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C5 PFPeA	*83*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFHxA	*89*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C4 PFHpA	*77*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C4 PFOA	*68*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C5 PFNA	*73*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFDA	*84*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFUnA	*56*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFDoA	*35*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFTeDA	*23*	**5-*	*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C2 PFHxDA	*18*	**5-*	*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C3 PFBS	*66*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
18O2 PFHxS	*80*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C4 PFOS	*77*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C8 FOSA	*68*		*10 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d3-NMeFOSAA	*66*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d5-NEtFOSAA	*49*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d-N-MeFOSA-M	*48*		*10 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d-N-EtFOSA-M	*25*		*10 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d7-N-MeFOSE-M	*40*		*10 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
d9-N-EtFOSE-M	*86*		*10 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
M2-4:2 FTS	*106*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
M2-6:2 FTS	*244*	**5+*	*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
M2-8:2 FTS	*673*	**5+*	*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*
13C3 HFPO-DA	*59*		*25 - 150*	*05/27/23 07:26*	*06/09/23 00:22*	*100*

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (5-22-23)
Lab Sample ID: 500-234252-1
Date Collected: 05/22/23 09:45
Matrix: Water
Date Received: 05/23/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 10:2 FTS	50		25 - 150	05/27/23 07:26	06/09/23 00:22	100

Definitions/Glossary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Qualifiers

LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-678381/1-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 678381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	0.19	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		05/27/23 07:26	05/30/23 11:37	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		05/27/23 07:26	05/30/23 11:37	1
NEtFOSA	<2.0		2.0	0.87	ng/L		05/27/23 07:26	05/30/23 11:37	1
NMeFOSA	<2.0		2.0	0.43	ng/L		05/27/23 07:26	05/30/23 11:37	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		05/27/23 07:26	05/30/23 11:37	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		05/27/23 07:26	05/30/23 11:37	1
NMeFOSE	<4.0		4.0	1.4	ng/L		05/27/23 07:26	05/30/23 11:37	1
NEtFOSE	<2.0		2.0	0.85	ng/L		05/27/23 07:26	05/30/23 11:37	1
4:2 FTS	<2.0		2.0	0.24	ng/L		05/27/23 07:26	05/30/23 11:37	1
6:2 FTS	2.84	J	5.0	2.5	ng/L		05/27/23 07:26	05/30/23 11:37	1
8:2 FTS	<2.0		2.0	0.46	ng/L		05/27/23 07:26	05/30/23 11:37	1
10:2 FTS	<2.0		2.0	0.67	ng/L		05/27/23 07:26	05/30/23 11:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	0.40	ng/L		05/27/23 07:26	05/30/23 11:37	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.0		4.0	1.5	ng/L		05/27/23 07:26	05/30/23 11:37	1
F-53B Major	<2.0		2.0	0.24	ng/L		05/27/23 07:26	05/30/23 11:37	1
F-53B Minor	<2.0		2.0	0.32	ng/L		05/27/23 07:26	05/30/23 11:37	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*05/27/23 07:26*	*05/30/23 11:37*	*1*
13C5 PFPeA	*94*		*25 - 150*	*05/27/23 07:26*	*05/30/23 11:37*	*1*
13C2 PFHxA	*97*		*25 - 150*	*05/27/23 07:26*	*05/30/23 11:37*	*1*
13C4 PFHpA	*95*		*25 - 150*	*05/27/23 07:26*	*05/30/23 11:37*	*1*
13C4 PFOA	*98*		*25 - 150*	*05/27/23 07:26*	*05/30/23 11:37*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-678381/1-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 678381

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	103		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 PFDA	95		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 PFUnA	94		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 PFDoA	92		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 PFTeDA	95		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 PFHxDA	92		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C3 PFBS	94		25 - 150	05/27/23 07:26	05/30/23 11:37	1
18O2 PFHxS	100		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C4 PFOS	102		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C8 FOSA	96		10 - 150	05/27/23 07:26	05/30/23 11:37	1
d3-NMeFOSAA	94		25 - 150	05/27/23 07:26	05/30/23 11:37	1
d5-NEtFOSAA	104		25 - 150	05/27/23 07:26	05/30/23 11:37	1
d-N-MeFOSA-M	82		10 - 150	05/27/23 07:26	05/30/23 11:37	1
d-N-EtFOSA-M	80		10 - 150	05/27/23 07:26	05/30/23 11:37	1
d7-N-MeFOSE-M	92		10 - 150	05/27/23 07:26	05/30/23 11:37	1
d9-N-EtFOSE-M	96		10 - 150	05/27/23 07:26	05/30/23 11:37	1
M2-4:2 FTS	71		25 - 150	05/27/23 07:26	05/30/23 11:37	1
M2-6:2 FTS	72		25 - 150	05/27/23 07:26	05/30/23 11:37	1
M2-8:2 FTS	85		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C3 HFPO-DA	98		25 - 150	05/27/23 07:26	05/30/23 11:37	1
13C2 10:2 FTS	97		25 - 150	05/27/23 07:26	05/30/23 11:37	1

Lab Sample ID: LCS 320-678381/2-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	40.0	37.0		ng/L		92	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	43.2		ng/L		108	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	41.0		ng/L		102	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	41.4		ng/L		103	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	39.3		ng/L		98	60 - 135
Perfluorononanoic acid (PFNA)	40.0	41.3		ng/L		103	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	42.3		ng/L		106	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	40.0		ng/L		100	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	44.9		ng/L		112	60 - 135
Perfluorotridecanoic acid (PFTriA)	40.0	38.0		ng/L		95	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	40.2		ng/L		100	60 - 135
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	40.7		ng/L		102	60 - 135
Perfluoro-n-octadecanoic acid (PFODA)	40.0	29.0		ng/L		72	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	36.3		ng/L		102	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.6	37.0		ng/L		99	60 - 135

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-678381/2-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	36.5	34.9		ng/L		96	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	37.9		ng/L		99	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	36.4		ng/L		98	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	38.6		ng/L		100	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	36.5		ng/L		95	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	29.8		ng/L		77	60 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	40.6		ng/L		102	60 - 135
NEtFOSA	40.0	41.5		ng/L		104	60 - 135
NMeFOSA	40.0	45.5		ng/L		114	60 - 135
NMeFOSAA	40.0	40.9		ng/L		102	60 - 135
NEtFOSAA	40.0	45.1		ng/L		113	60 - 135
NMeFOSE	40.0	38.3		ng/L		96	60 - 135
NEtFOSE	40.0	41.0		ng/L		103	60 - 135
4:2 FTS	37.5	40.5		ng/L		108	60 - 135
6:2 FTS	38.1	40.9		ng/L		107	60 - 135
8:2 FTS	38.4	40.4		ng/L		105	60 - 135
10:2 FTS	38.6	34.7		ng/L		90	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	39.0		ng/L		103	60 - 135
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	40.0	42.9		ng/L		107	60 - 135
F-53B Major	37.4	36.3		ng/L		97	60 - 135
F-53B Minor	37.8	36.7		ng/L		97	60 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*103*		*25 - 150*
13C5 PFPeA	*94*		*25 - 150*
13C2 PFHxA	*96*		*25 - 150*
13C4 PFHpA	*101*		*25 - 150*
13C4 PFOA	*102*		*25 - 150*
13C5 PFNA	*103*		*25 - 150*
13C2 PFDA	*97*		*25 - 150*
13C2 PFUnA	*96*		*25 - 150*
13C2 PFDoA	*92*		*25 - 150*
13C2 PFTeDA	*94*		*25 - 150*
13C2 PFHxDA	*98*		*25 - 150*
13C3 PFBS	*102*		*25 - 150*
18O2 PFHxS	*106*		*25 - 150*
13C4 PFOS	*105*		*25 - 150*
13C8 FOSA	*97*		*10 - 150*
d3-NMeFOSAA	*94*		*25 - 150*
d5-NEtFOSAA	*97*		*25 - 150*
d-N-MeFOSA-M	*75*		*10 - 150*
d-N-EtFOSA-M	*75*		*10 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-678381/2-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 678381

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d7-N-MeFOSE-M	*90*		*10 - 150*
d9-N-EtFOSE-M	*91*		*10 - 150*
M2-4:2 FTS	*73*		*25 - 150*
M2-6:2 FTS	*80*		*25 - 150*
M2-8:2 FTS	*85*		*25 - 150*
13C3 HFPO-DA	*97*		*25 - 150*
13C2 10:2 FTS	*100*		*25 - 150*

Lab Sample ID: LCSD 320-678381/3-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 678381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	37.6		ng/L		94	60 - 135	2	30
Perfluoropentanoic acid (PFPeA)			40.0	41.2		ng/L		103	60 - 135	5	30
Perfluorohexanoic acid (PFHxA)			40.0	41.9		ng/L		105	60 - 135	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	43.5		ng/L		109	60 - 135	5	30
Perfluorooctanoic acid (PFOA)			40.0	39.3		ng/L		98	60 - 135	0	30
Perfluorononanoic acid (PFNA)			40.0	40.9		ng/L		102	60 - 135	1	30
Perfluorodecanoic acid (PFDA)			40.0	43.7		ng/L		109	60 - 135	3	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.3		ng/L		103	60 - 135	3	30
Perfluorododecanoic acid (PFDoA)			40.0	42.3		ng/L		106	60 - 135	6	30
Perfluorotridecanoic acid (PFTriA)			40.0	36.6		ng/L		91	60 - 135	4	30
Perfluorotetradecanoic acid (PFTeA)			40.0	39.0		ng/L		97	60 - 135	3	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			40.0	40.2		ng/L		101	60 - 135	1	30
Perfluoro-n-octadecanoic acid (PFODA)			40.0	29.5		ng/L		74	60 - 135	2	30
Perfluorobutanesulfonic acid (PFBS)			35.5	35.2		ng/L		99	60 - 135	3	30
Perfluoropentanesulfonic acid (PFPeS)			37.6	38.3		ng/L		102	60 - 135	3	30
Perfluorohexanesulfonic acid (PFHxS)			36.5	33.3		ng/L		91	60 - 135	5	30
Perfluoroheptanesulfonic acid (PFHpS)			38.2	37.4		ng/L		98	60 - 135	1	30
Perfluorooctanesulfonic acid (PFOS)			37.2	36.6		ng/L		98	60 - 135	1	30
Perfluorononanesulfonic acid (PFNS)			38.5	38.3		ng/L		99	60 - 135	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.8		ng/L		98	60 - 135	3	30
Perfluorododecanesulfonic acid (PFDoS)			38.8	31.8		ng/L		82	60 - 135	6	30
Perfluorooctanesulfonamide (FOSA)			40.0	39.2		ng/L		98	60 - 135	3	30
NEtFOSA			40.0	40.2		ng/L		100	60 - 135	3	30
NMeFOSA			40.0	39.6		ng/L		99	60 - 135	14	30
NMeFOSAA			40.0	38.8		ng/L		97	60 - 135	5	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-678381/3-A
Matrix: Water
Analysis Batch: 678709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 678381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NEtFOSAA			40.0	44.3		ng/L		111	60 - 135	2	30
NMeFOSE			40.0	40.2		ng/L		101	60 - 135	5	30
NEtFOSE			40.0	40.0		ng/L		100	60 - 135	2	30
4:2 FTS			37.5	34.1		ng/L		91	60 - 135	17	30
6:2 FTS			38.1	39.3		ng/L		103	60 - 135	4	30
8:2 FTS			38.4	38.5		ng/L		100	60 - 135	5	30
10:2 FTS			38.6	35.1		ng/L		91	60 - 135	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			37.8	39.7		ng/L		105	60 - 135	2	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)			40.0	40.7		ng/L		102	60 - 135	5	30
F-53B Major			37.4	36.5		ng/L		98	60 - 135	0	30
F-53B Minor			37.8	36.7		ng/L		97	60 - 135	0	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*90*		*25 - 150*
13C5 PFPeA	*89*		*25 - 150*
13C2 PFHxA	*86*		*25 - 150*
13C4 PFHpA	*89*		*25 - 150*
13C4 PFOA	*94*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*88*		*25 - 150*
13C2 PFUnA	*88*		*25 - 150*
13C2 PFDoA	*89*		*25 - 150*
13C2 PFTeDA	*89*		*25 - 150*
13C2 PFHxDA	*87*		*25 - 150*
13C3 PFBS	*92*		*25 - 150*
18O2 PFHxS	*99*		*25 - 150*
13C4 PFOS	*96*		*25 - 150*
13C8 FOSA	*92*		*10 - 150*
d3-NMeFOSAA	*88*		*25 - 150*
d5-NEtFOSAA	*90*		*25 - 150*
d-N-MeFOSA-M	*81*		*10 - 150*
d-N-EtFOSA-M	*76*		*10 - 150*
d7-N-MeFOSE-M	*82*		*10 - 150*
d9-N-EtFOSE-M	*89*		*10 - 150*
M2-4:2 FTS	*74*		*25 - 150*
M2-6:2 FTS	*75*		*25 - 150*
M2-8:2 FTS	*79*		*25 - 150*
13C3 HFPO-DA	*90*		*25 - 150*
13C2 10:2 FTS	*88*		*25 - 150*

Lab Chronicle

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (5-22-23)
Lab Sample ID: 500-234252-1

Date Collected: 05/22/23 09:45
Matrix: Water
Date Received: 05/23/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			678381	EJR	EET SAC	05/27/23 07:26
Total/NA	Analysis	537 (modified)		1	678709	K1S	EET SAC	05/30/23 13:49
Total/NA	Prep	3535	DL		678381	EJR	EET SAC	05/27/23 07:26
Total/NA	Analysis	537 (modified)	DL	100	682032	RS1	EET SAC	06/09/23 00:22

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-23

Eurofins TestAmerica, Sacramento
880 Riverside Parkway

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

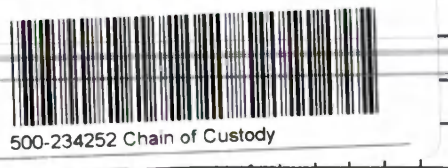
eurofins Environment Testing TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Lisa Rutkowski	Sampler: Jacob Naminger	Date: 5-22-23	COC No: 1
Arcadis U.S., Inc.	Email: N/A	Lab Contact: Sandie Fredrick	Carrier: FedEx	1 of 1 COCs
126 North Jefferson Street, Suite 400	Tel/Fax: N/A			
Milwaukee, WI 53202	Analysis Turnaround Time: ☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
Phone	TAT if different from Below ____			
FAX	☑ 2 weeks			
Project Name: Marinette, WI	☐ 1 week			Lab Project Number: 50018970
Site: Marinette, WI	☐ 2 days			
P O # 30171092.4.1.3	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 537 Modified (36 Compounds)	Sample Specific Notes:
Collapsed SW Foam (5-22-23)	5-22-23	9:45	G	W	3	N	N	X	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: 0.8 Corr'd: 0.8	Therm ID No: CC	
Relinquished by: Jacob Naminger	Company: Barley Excavating	Date/Time: 5-22-23/10:13	Received by: Fed Ex	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 5/23/23 930
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 500-234252-1

Login Number: 234252
List Number: 2
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 05/24/23 12:15 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2110359
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Sacramento Sample Receiving Notes

Job: _____

Tracking # : 5120 6510 6574

SO / 2D / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: C10 Corr. Factor: (+ / -) _____ °C

Ice ____ Wet ____ Gel ____ Other ____

Cooler Custody Seal: 2110359

Cooler ID: _____

Temp Observed: 0.8 °C Corrected: 0.8 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials: JF Date: 5/23/23

Unpacking/Labeling The Samples	Yes	No	NA
COC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Containers are not broken or leaking?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☑	☐	☐
Samples require splitting/compositing?	☐	☐	☑
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: JF Date: 5/24/23

Notes: _____

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials: JF Date: 5/24/23

Isotope Dilution Summary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
500-234252-1	Collapsed SW Foam (5-22-23)	81	104	128	107	61	63	69	105
500-234252-1 - DL	Collapsed SW Foam (5-22-23)	82	83	89	77	68	73	84	56
LCS 320-678381/2-A	Lab Control Sample	103	94	96	101	102	103	97	96
LCSD 320-678381/3-A	Lab Control Sample Dup	90	89	86	89	94	96	88	88
MB 320-678381/1-A	Method Blank	96	94	97	95	98	103	95	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	PFHxDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(10-150)	(25-150)
500-234252-1	Collapsed SW Foam (5-22-23)	57	34	25	127	147	65	53	55
500-234252-1 - DL	Collapsed SW Foam (5-22-23)	35	23 *5-	18 *5-	66	80	77	68	66
LCS 320-678381/2-A	Lab Control Sample	92	94	98	102	106	105	97	94
LCSD 320-678381/3-A	Lab Control Sample Dup	89	89	87	92	99	96	92	88
MB 320-678381/1-A	Method Blank	92	95	92	94	100	102	96	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		d5NEFOS	dMeFOSA	dEtFOSA	NMFM	NEFM	M242FTS	M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(10-150)	(10-150)	(10-150)	(10-150)	(25-150)	(25-150)	(25-150)
500-234252-1	Collapsed SW Foam (5-22-23)	80	65	64	68	63	194 *5+	175 *5+	464 *5+
500-234252-1 - DL	Collapsed SW Foam (5-22-23)	49	48	25	40	86	106	244 *5+	673 *5+
LCS 320-678381/2-A	Lab Control Sample	97	75	75	90	91	73	80	85
LCSD 320-678381/3-A	Lab Control Sample Dup	90	81	76	82	89	74	75	79
MB 320-678381/1-A	Method Blank	104	82	80	92	96	71	72	85

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		HFPODA	M102FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
500-234252-1	Collapsed SW Foam (5-22-23)	111	97
500-234252-1 - DL	Collapsed SW Foam (5-22-23)	59	50
LCS 320-678381/2-A	Lab Control Sample	97	100
LCSD 320-678381/3-A	Lab Control Sample Dup	90	88
MB 320-678381/1-A	Method Blank	98	97

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M

Isotope Dilution Summary

Client: ARCADIS US Inc
Job ID: 500-234252-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS

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ANALYTICAL REPORT

PREPARED FOR

Attn: Lisa Rutkowski
ARCADIS US Inc
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Generated 9/6/2023 5:53:57 PM

JOB DESCRIPTION

Marinette, WI 30171092.4.1.3 Collapsed Foam

JOB NUMBER

500-238048-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

myEOL

Job Notes

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Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization

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Authorized for release by
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Table of Contents

Job ID: 500-238048-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-238048-1

Comments
No additional comments.

Receipt
The sample was received on 8/10/2023 10:00 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.4º C.

LCMS
Method 537 (modified): The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and precision for preparation batch 320-701569 and analytical batch 320-702524 recovered outside control limits for the following analyte: Perfluoro-n-octadecanoic acid (PFODA). This analyte is not a state regulated analyte; therefore, the data have been reported

Method 537 (modified): The Isotope Dilution Analyte (IDA), 13C2 PFHxDA, recovery associated with the following sample is below the method recommended limit: Collapsed SW Foam (8-9-23) (500-238048-1). The associated target analytes, Perfluoro-n-hexadecanoic acid (PFHxDA) and Perfluoro-n-octadecanoic acid (PFODA), are not state regulated analytes, therefore, the data have been reported.

Method 537 (modified): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: Collapsed SW Foam (8-9-23) (500-238048-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The samples were diluted within calibration range, and both sets of data were reported.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte: (CCB 320-702553/21).

Method 537 (modified): Results for sample Collapsed SW Foam (8-9-23) (500-238048-1) was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. The percent recovery for the internal standard in the 10X analysis is 104% after the dilution factor was applied to the labeled internal standard area count.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-701569.
preparation batch 320-701569
Method: 3535 PFC-W
Matrix: Aqueous

Method 3535: The following samples in preparation batch 320-701569 were yellow in color prior to extraction. Collapsed SW Foam (8-9-23) (500-238048-1)
preparation batch 320-701569
Method: 3535 PFC-W
Matrix: Aqueous

Method 3535: Due to the matrix being dark brown color, the initial volumes used for the following sample deviated from the standard procedure: Collapsed SW Foam (8-9-23) (500-238048-1). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.
preparation batch 320-701569
Method: 3535 PFC-W
Matrix: Aqueous

Method 3535: The following samples in preparation batch 320-701569 were observed to have floating particulates present in the sample

Job ID: 500-238048-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

bottle. 500-238048-C-1
preparation batch 320-701569
Method: 3535 PFC-W
Matrix: Aqueous

Method 3535: The following samples in preparation batch 320-701569 were yellow in color following extraction. Collapsed SW Foam (8-9-23) (500-238048-1).
preparation batch 320-701569
Method: 3535 PFC-W
Matrix: Aqueous

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-238048-1	Collapsed SW Foam (8-9-23)	Water	08/09/23 12:15	08/10/23 10:00

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (8-9-23)
Lab Sample ID: 500-238048-1
Date Collected: 08/09/23 12:15
Matrix: Water
Date Received: 08/10/23 10:00

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**290**		50	24	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoropentanoic acid (PFPeA)	**440**		20	4.9	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorohexanoic acid (PFHxA)	**1500**		20	5.8	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoroheptanoic acid (PFHpA)	**240**		20	2.5	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorooctanoic acid (PFOA)	**2600**		20	8.5	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorononanoic acid (PFNA)	**1400**		20	2.7	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorodecanoic acid (PFDA)	**500**		20	3.1	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoroundecanoic acid (PFUnA)	**160**		20	11	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorododecanoic acid (PFDoA)	**18**	**J**	20	5.5	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorotridecanoic acid (PFTriA)	<20		20	13	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorotetradecanoic acid (PFTeA)	<20		20	7.3	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.9	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoro-n-octadecanoic acid (PFODA)	<20	*- *1	20	9.4	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorobutanesulfonic acid (PFBS)	**11**	**J**	20	2.0	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoropentanesulfonic acid (PFPeS)	<20		20	3.0	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorohexanesulfonic acid (PFHxS)	**63**		20	5.7	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluoroheptanesulfonic acid (PFHpS)	**14**	**J**	20	1.9	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorooctanesulfonic acid (PFOS)	**6400**	**E**	20	5.4	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorononanesulfonic acid (PFNS)	<20		20	3.7	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorodecanesulfonic acid (PFDS)	**8.4**	**J**	20	3.2	ng/L		08/24/23 18:47	08/27/23 16:50	1
Perfluorooctanesulfonamide (FOSA)	**560**		20	9.8	ng/L		08/24/23 18:47	08/27/23 16:50	1
NEtFOSA	<20		20	8.7	ng/L		08/24/23 18:47	08/27/23 16:50	1
NMeFOSA	<20		20	4.3	ng/L		08/24/23 18:47	08/27/23 16:50	1
NMeFOSAA	**13**	**J**	50	12	ng/L		08/24/23 18:47	08/27/23 16:50	1
NEtFOSAA	**260**		50	13	ng/L		08/24/23 18:47	08/27/23 16:50	1
NMeFOSE	<40		40	14	ng/L		08/24/23 18:47	08/27/23 16:50	1
NEtFOSE	<20		20	8.5	ng/L		08/24/23 18:47	08/27/23 16:50	1
4:2 FTS	**20**		20	2.4	ng/L		08/24/23 18:47	08/27/23 16:50	1
6:2 FTS	**4000**	**E**	50	25	ng/L		08/24/23 18:47	08/27/23 16:50	1
8:2 FTS	**8300**	**E**	20	4.6	ng/L		08/24/23 18:47	08/27/23 16:50	1
10:2 FTS	**34**		20	6.7	ng/L		08/24/23 18:47	08/27/23 16:50	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<20		20	4.0	ng/L		08/24/23 18:47	08/27/23 16:50	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<40		40	15	ng/L		08/24/23 18:47	08/27/23 16:50	1
F-53B Major	<20		20	2.4	ng/L		08/24/23 18:47	08/27/23 16:50	1
F-53B Minor	<20		20	3.2	ng/L		08/24/23 18:47	08/27/23 16:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C5 PFPeA	*92*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFHxA	*87*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*

Client Sample ID: Collapsed SW Foam (8-9-23)
Lab Sample ID: 500-238048-1

Date Collected: 08/09/23 12:15
Matrix: Water
Date Received: 08/10/23 10:00

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFHpA	*74*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C4 PFOA	*76*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C5 PFNA	*93*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFDA	*84*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFUnA	*70*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFDoA	*61*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFTeDA	*49*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 PFHxDA	*39*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C3 PFBS	*97*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
18O2 PFHxS	*71*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C4 PFOS	*92*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C8 FOSA	*88*		*10 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d3-NMeFOSAA	*64*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d5-NEtFOSAA	*74*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d-N-MeFOSA-M	*52*		*10 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d-N-EtFOSA-M	*49*		*10 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d7-N-MeFOSE-M	*63*		*10 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
d9-N-EtFOSE-M	*64*		*10 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
M2-4:2 FTS	*122*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
M2-6:2 FTS	*93*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
M2-8:2 FTS	*104*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C3 HFPO-DA	*85*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*
13C2 10:2 FTS	*83*		*25 - 150*	*08/24/23 18:47*	*08/27/23 16:50*	*1*

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	**Result**	**Qualifier**	**RL**	**MDL**	**Unit**	**D**	**Prepared**	**Analyzed**	**Dil Fac**
Perfluorobutanoic acid (PFBA)	<500		500	240	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoropentanoic acid (PFPeA)	**530**		200	49	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorohexanoic acid (PFHxA)	**1500**		200	58	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoroheptanoic acid (PFHpA)	**310**		200	25	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorooctanoic acid (PFOA)	**2800**		200	85	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorononanoic acid (PFNA)	**1700**		200	27	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorodecanoic acid (PFDA)	**500**		200	31	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoroundecanoic acid (PFUnA)	**220**		200	110	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorododecanoic acid (PFDoA)	<200		200	55	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorotridecanoic acid (PFTriA)	<200		200	130	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorotetradecanoic acid (PFTeA)	<200		200	73	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoro-n-hexadecanoic acid (PFHxDA)	<200		200	89	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoro-n-octadecanoic acid (PFODA)	<200	*- *1	200	94	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorobutanesulfonic acid (PFBS)	<200		200	20	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoropentanesulfonic acid (PFPeS)	<200		200	30	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorohexanesulfonic acid (PFHxS)	<200		200	57	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluoroheptanesulfonic acid (PFHpS)	<200		200	19	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorooctanesulfonic acid (PFOS)	**6700**		200	54	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorononanesulfonic acid (PFNS)	<200		200	37	ng/L		08/24/23 18:47	08/30/23 00:55	10

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (8-9-23)
Lab Sample ID: 500-238048-1
Date Collected: 08/09/23 12:15
Matrix: Water
Date Received: 08/10/23 10:00

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanesulfonic acid (PFDS)	<200		200	32	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorododecanesulfonic acid (PFDoS)	<200		200	97	ng/L		08/24/23 18:47	08/30/23 00:55	10
Perfluorooctanesulfonamide (FOSA)	**590**		200	98	ng/L		08/24/23 18:47	08/30/23 00:55	10
NEtFOSA	<200		200	87	ng/L		08/24/23 18:47	08/30/23 00:55	10
NMeFOSA	<200		200	43	ng/L		08/24/23 18:47	08/30/23 00:55	10
NMeFOSAA	<500		500	120	ng/L		08/24/23 18:47	08/30/23 00:55	10
NEtFOSAA	**300**	**J**	500	130	ng/L		08/24/23 18:47	08/30/23 00:55	10
NMeFOSE	<400		400	140	ng/L		08/24/23 18:47	08/30/23 00:55	10
NEtFOSE	<200		200	85	ng/L		08/24/23 18:47	08/30/23 00:55	10
4:2 FTS	**26**	**J**	200	24	ng/L		08/24/23 18:47	08/30/23 00:55	10
6:2 FTS	**4700**		500	250	ng/L		08/24/23 18:47	08/30/23 00:55	10
8:2 FTS	**8800**		200	46	ng/L		08/24/23 18:47	08/30/23 00:55	10
10:2 FTS	<200		200	67	ng/L		08/24/23 18:47	08/30/23 00:55	10
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<200		200	40	ng/L		08/24/23 18:47	08/30/23 00:55	10
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<400		400	150	ng/L		08/24/23 18:47	08/30/23 00:55	10
F-53B Major	<200		200	24	ng/L		08/24/23 18:47	08/30/23 00:55	10
F-53B Minor	<200		200	32	ng/L		08/24/23 18:47	08/30/23 00:55	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*66*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C5 PFPeA	*75*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFHxA	*79*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C4 PFHpA	*70*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C4 PFOA	*80*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C5 PFNA	*77*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFDA	*78*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFUnA	*68*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFDoA	*57*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFTeDA	*36*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 PFHxDA	*23*	**5-*	*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C3 PFBS	*69*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
18O2 PFHxS	*68*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C4 PFOS	*75*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C8 FOSA	*82*		*10 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d3-NMeFOSAA	*69*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d5-NEtFOSAA	*67*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d-N-MeFOSA-M	*44*		*10 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d-N-EtFOSA-M	*42*		*10 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d7-N-MeFOSE-M	*50*		*10 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
d9-N-EtFOSE-M	*47*		*10 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
M2-4:2 FTS	*88*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
M2-6:2 FTS	*74*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
M2-8:2 FTS	*82*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C3 HFPO-DA	*60*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*
13C2 10:2 FTS	*58*		*25 - 150*	*08/24/23 18:47*	*08/30/23 00:55*	*10*

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (8-9-23)
Lab Sample ID: 500-238048-1
Date Collected: 08/09/23 12:15
Matrix: Water
Date Received: 08/10/23 10:00

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.7	ng/L		08/24/23 18:47	09/05/23 16:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOS	*73*		*25 - 150*	*08/24/23 18:47*	*09/05/23 16:19*	*1*

Definitions/Glossary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Qualifiers

LCMS

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-701569/1-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 701569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	0.19	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		08/24/23 18:47	08/29/23 21:31	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		08/24/23 18:47	08/29/23 21:31	1
NEtFOSA	<2.0		2.0	0.87	ng/L		08/24/23 18:47	08/29/23 21:31	1
NMeFOSA	<2.0		2.0	0.43	ng/L		08/24/23 18:47	08/29/23 21:31	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		08/24/23 18:47	08/29/23 21:31	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		08/24/23 18:47	08/29/23 21:31	1
NMeFOSE	<4.0		4.0	1.4	ng/L		08/24/23 18:47	08/29/23 21:31	1
NEtFOSE	<2.0		2.0	0.85	ng/L		08/24/23 18:47	08/29/23 21:31	1
4:2 FTS	<2.0		2.0	0.24	ng/L		08/24/23 18:47	08/29/23 21:31	1
6:2 FTS	<5.0		5.0	2.5	ng/L		08/24/23 18:47	08/29/23 21:31	1
8:2 FTS	<2.0		2.0	0.46	ng/L		08/24/23 18:47	08/29/23 21:31	1
10:2 FTS	<2.0		2.0	0.67	ng/L		08/24/23 18:47	08/29/23 21:31	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	0.40	ng/L		08/24/23 18:47	08/29/23 21:31	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.0		4.0	1.5	ng/L		08/24/23 18:47	08/29/23 21:31	1
F-53B Major	<2.0		2.0	0.24	ng/L		08/24/23 18:47	08/29/23 21:31	1
F-53B Minor	<2.0		2.0	0.32	ng/L		08/24/23 18:47	08/29/23 21:31	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*25 - 150*	*08/24/23 18:47*	*08/29/23 21:31*	*1*
13C5 PFPeA	*84*		*25 - 150*	*08/24/23 18:47*	*08/29/23 21:31*	*1*
13C2 PFHxA	*85*		*25 - 150*	*08/24/23 18:47*	*08/29/23 21:31*	*1*
13C4 PFHpA	*89*		*25 - 150*	*08/24/23 18:47*	*08/29/23 21:31*	*1*
13C4 PFOA	*89*		*25 - 150*	*08/24/23 18:47*	*08/29/23 21:31*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-701569/1-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 701569

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	87		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 PFDA	93		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 PFUnA	90		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 PFDoA	89		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 PFTeDA	79		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 PFHxDA	66		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C3 PFBS	81		25 - 150	08/24/23 18:47	08/29/23 21:31	1
18O2 PFHxS	84		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C4 PFOS	86		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C8 FOSA	96		10 - 150	08/24/23 18:47	08/29/23 21:31	1
d3-NMeFOSAA	83		25 - 150	08/24/23 18:47	08/29/23 21:31	1
d5-NEtFOSAA	84		25 - 150	08/24/23 18:47	08/29/23 21:31	1
d-N-MeFOSA-M	67		10 - 150	08/24/23 18:47	08/29/23 21:31	1
d-N-EtFOSA-M	73		10 - 150	08/24/23 18:47	08/29/23 21:31	1
d7-N-MeFOSE-M	81		10 - 150	08/24/23 18:47	08/29/23 21:31	1
d9-N-EtFOSE-M	81		10 - 150	08/24/23 18:47	08/29/23 21:31	1
M2-4:2 FTS	76		25 - 150	08/24/23 18:47	08/29/23 21:31	1
M2-6:2 FTS	69		25 - 150	08/24/23 18:47	08/29/23 21:31	1
M2-8:2 FTS	87		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C3 HFPO-DA	75		25 - 150	08/24/23 18:47	08/29/23 21:31	1
13C2 10:2 FTS	92		25 - 150	08/24/23 18:47	08/29/23 21:31	1

Lab Sample ID: LCS 320-701569/2-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 701569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	9.40		ng/L		117	60 - 135
Perfluoropentanoic acid (PFPeA)	8.00	9.41		ng/L		118	60 - 135
Perfluorohexanoic acid (PFHxA)	8.00	8.82		ng/L		110	60 - 135
Perfluoroheptanoic acid (PFHpA)	8.00	9.41		ng/L		118	60 - 135
Perfluorooctanoic acid (PFOA)	8.00	9.91		ng/L		124	60 - 135
Perfluorononanoic acid (PFNA)	8.00	9.55		ng/L		119	60 - 135
Perfluorodecanoic acid (PFDA)	8.00	9.06		ng/L		113	60 - 135
Perfluoroundecanoic acid (PFUnA)	8.00	8.66		ng/L		108	60 - 135
Perfluorododecanoic acid (PFDoA)	8.00	9.81		ng/L		123	60 - 135
Perfluorotridecanoic acid (PFTriA)	8.00	8.81		ng/L		110	60 - 135
Perfluorotetradecanoic acid (PFTeA)	8.00	8.54		ng/L		107	60 - 135
Perfluoro-n-hexadecanoic acid (PFHxDA)	8.00	9.50		ng/L		119	60 - 135
Perfluoro-n-octadecanoic acid (PFODA)	8.00	3.74	*-	ng/L		47	60 - 135
Perfluorobutanesulfonic acid (PFBS)	7.10	8.08		ng/L		114	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	7.52	8.84		ng/L		118	60 - 135

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-701569/2-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 701569

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perfluorohexanesulfonic acid (PFHxS)			7.30	7.51		ng/L		103	60 - 135		
Perfluoroheptanesulfonic acid (PFHpS)			7.63	8.33		ng/L		109	60 - 135		
Perfluorooctanesulfonic acid (PFOS)			7.44	8.22		ng/L		111	60 - 135		
Perfluorononanesulfonic acid (PFNS)			7.70	7.95		ng/L		103	60 - 135		
Perfluorodecanesulfonic acid (PFDS)			7.71	7.97		ng/L		103	60 - 135		
Perfluorododecanesulfonic acid (PFDoS)			7.76	8.94		ng/L		115	60 - 135		
Perfluorooctanesulfonamide (FOSA)			8.00	9.15		ng/L		114	60 - 135		
NEtFOSA			8.00	7.25		ng/L		91	60 - 135		
NMeFOSA			8.00	8.55		ng/L		107	60 - 135		
NMeFOSAA			8.00	7.38		ng/L		92	60 - 135		
NEtFOSAA			8.00	9.06		ng/L		113	60 - 135		
NMeFOSE			8.00	9.78		ng/L		122	60 - 135		
NEtFOSE			8.00	10.1		ng/L		126	60 - 135		
4:2 FTS			7.50	8.73		ng/L		116	60 - 135		
6:2 FTS			7.62	8.64		ng/L		113	60 - 135		
8:2 FTS			7.68	7.44		ng/L		97	60 - 135		
10:2 FTS			7.73	8.77		ng/L		113	60 - 135		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			7.57	9.45		ng/L		125	60 - 135		
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)			8.00	9.97		ng/L		125	60 - 135		
F-53B Major			7.47	9.14		ng/L		122	60 - 135		
F-53B Minor			7.55	8.58		ng/L		114	60 - 135		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*78*		*25 - 150*
13C5 PFPeA	*77*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*
13C4 PFHpA	*80*		*25 - 150*
13C4 PFOA	*78*		*25 - 150*
13C5 PFNA	*81*		*25 - 150*
13C2 PFDA	*82*		*25 - 150*
13C2 PFUnA	*85*		*25 - 150*
13C2 PFDoA	*84*		*25 - 150*
13C2 PFTeDA	*72*		*25 - 150*
13C2 PFHxDA	*65*		*25 - 150*
13C3 PFBS	*76*		*25 - 150*
18O2 PFHxS	*77*		*25 - 150*
13C4 PFOS	*77*		*25 - 150*
13C8 FOSA	*88*		*10 - 150*
d3-NMeFOSAA	*75*		*25 - 150*
d5-NEtFOSAA	*81*		*25 - 150*
d-N-MeFOSA-M	*62*		*10 - 150*
d-N-EtFOSA-M	*72*		*10 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-701569/2-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 701569

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
d7-N-MeFOSE-M	*69*		*10 - 150*
d9-N-EtFOSE-M	*69*		*10 - 150*
M2-4:2 FTS	*67*		*25 - 150*
M2-6:2 FTS	*68*		*25 - 150*
M2-8:2 FTS	*81*		*25 - 150*
13C3 HFPO-DA	*67*		*25 - 150*
13C2 10:2 FTS	*83*		*25 - 150*

Lab Sample ID: LCSD 320-701569/3-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 701569

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			8.00	8.31		ng/L		104	60 - 135	12	30
Perfluoropentanoic acid (PFPeA)			8.00	8.66		ng/L		108	60 - 135	8	30
Perfluorohexanoic acid (PFHxA)			8.00	8.82		ng/L		110	60 - 135	0	30
Perfluoroheptanoic acid (PFHpA)			8.00	8.42		ng/L		105	60 - 135	11	30
Perfluorooctanoic acid (PFOA)			8.00	9.27		ng/L		116	60 - 135	7	30
Perfluorononanoic acid (PFNA)			8.00	9.31		ng/L		116	60 - 135	3	30
Perfluorodecanoic acid (PFDA)			8.00	8.55		ng/L		107	60 - 135	6	30
Perfluoroundecanoic acid (PFUnA)			8.00	8.79		ng/L		110	60 - 135	1	30
Perfluorododecanoic acid (PFDoA)			8.00	9.26		ng/L		116	60 - 135	6	30
Perfluorotridecanoic acid (PFTriA)			8.00	8.15		ng/L		102	60 - 135	8	30
Perfluorotetradecanoic acid (PFTeA)			8.00	8.12		ng/L		101	60 - 135	5	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			8.00	8.98		ng/L		112	60 - 135	6	30
Perfluoro-n-octadecanoic acid (PFODA)			8.00	1.59	J *- *1	ng/L		20	60 - 135	81	30
Perfluorobutanesulfonic acid (PFBS)			7.10	7.53		ng/L		106	60 - 135	7	30
Perfluoropentanesulfonic acid (PFPeS)			7.52	7.99		ng/L		106	60 - 135	10	30
Perfluorohexanesulfonic acid (PFHxS)			7.30	7.42		ng/L		102	60 - 135	1	30
Perfluoroheptanesulfonic acid (PFHpS)			7.63	7.11		ng/L		93	60 - 135	16	30
Perfluorooctanesulfonic acid (PFOS)			7.44	7.60		ng/L		102	60 - 135	8	30
Perfluorononanesulfonic acid (PFNS)			7.70	6.84		ng/L		89	60 - 135	15	30
Perfluorodecanesulfonic acid (PFDS)			7.71	7.36		ng/L		96	60 - 135	8	30
Perfluorododecanesulfonic acid (PFDoS)			7.76	7.65		ng/L		99	60 - 135	16	30
Perfluorooctanesulfonamide (FOSA)			8.00	8.83		ng/L		110	60 - 135	4	30
NEtFOSA			8.00	7.67		ng/L		96	60 - 135	6	30
NMeFOSA			8.00	8.11		ng/L		101	60 - 135	5	30
NMeFOSAA			8.00	7.41		ng/L		93	60 - 135	0	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-701569/3-A
Matrix: Water
Analysis Batch: 702524

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 701569

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NEtFOSAA			8.00	8.26		ng/L		103	60 - 135	9	30
NMeFOSE			8.00	7.54		ng/L		94	60 - 135	26	30
NEtFOSE			8.00	8.36		ng/L		104	60 - 135	19	30
4:2 FTS			7.50	8.34		ng/L		111	60 - 135	5	30
6:2 FTS			7.62	9.31		ng/L		122	60 - 135	7	30
8:2 FTS			7.68	7.96		ng/L		104	60 - 135	7	30
10:2 FTS			7.73	8.54		ng/L		111	60 - 135	3	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			7.57	8.27		ng/L		109	60 - 135	13	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)			8.00	9.80		ng/L		123	60 - 135	2	30
F-53B Major			7.47	7.73		ng/L		103	60 - 135	17	30
F-53B Minor			7.55	7.72		ng/L		102	60 - 135	11	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*88*		*25 - 150*
13C5 PFPeA	*88*		*25 - 150*
13C2 PFHxA	*90*		*25 - 150*
13C4 PFHpA	*91*		*25 - 150*
13C4 PFOA	*92*		*25 - 150*
13C5 PFNA	*89*		*25 - 150*
13C2 PFDA	*94*		*25 - 150*
13C2 PFUnA	*96*		*25 - 150*
13C2 PFDoA	*92*		*25 - 150*
13C2 PFTeDA	*79*		*25 - 150*
13C2 PFHxDA	*64*		*25 - 150*
13C3 PFBS	*87*		*25 - 150*
18O2 PFHxS	*89*		*25 - 150*
13C4 PFOS	*96*		*25 - 150*
13C8 FOSA	*98*		*10 - 150*
d3-NMeFOSAA	*88*		*25 - 150*
d5-NEtFOSAA	*86*		*25 - 150*
d-N-MeFOSA-M	*65*		*10 - 150*
d-N-EtFOSA-M	*68*		*10 - 150*
d7-N-MeFOSE-M	*81*		*10 - 150*
d9-N-EtFOSE-M	*84*		*10 - 150*
M2-4:2 FTS	*76*		*25 - 150*
M2-6:2 FTS	*78*		*25 - 150*
M2-8:2 FTS	*89*		*25 - 150*
13C3 HFPO-DA	*74*		*25 - 150*
13C2 10:2 FTS	*99*		*25 - 150*

Lab Chronicle

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (8-9-23)
Lab Sample ID: 500-238048-1
Date Collected: 08/09/23 12:15
Matrix: Water
Date Received: 08/10/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535	DL		701569	ERR	EET SAC	08/24/23 18:47
Total/NA	Analysis	537 (modified)	DL	10	702524	KCO	EET SAC	08/30/23 00:55
Total/NA	Prep	3535			701569	ERR	EET SAC	08/24/23 18:47
Total/NA	Analysis	537 (modified)		1	701862	S1C	EET SAC	08/27/23 16:50
Total/NA	Prep	3535	RA		701569	ERR	EET SAC	08/24/23 18:47
Total/NA	Analysis	537 (modified)	RA	1	703870	CV	EET SAC	09/05/23 16:19

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-23 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Sacramento
880 Riverside Parkway

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

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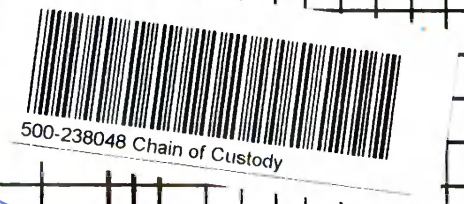
Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Lisa Rutkowski	Sampler: Jacob Nominger	Date: 8-9-23	COC No: 1
Arcadis U.S., Inc.	Email: N/A	Lab Contact: Sandie Fredrick	Carrier: FedEx	1 of 1 COCs
126 North Jefferson Street, Suite 400	Tel/Fax: N/A			
Milwaukee, WI 53202	Analysis Turnaround Time			For Lab Use Only:
Phone	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-In Client:
FAX	TAT if different from Below _____			Lab Sampling:
Project Name: Marinette, WI	☑ 2 weeks			Lab Project Number
Site: Marinette, WI	☐ 1 week			50018970
P O # 30128077.04 (Collapsed Foam)	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 537 Modified (36 Compounds)	Sample Specific Notes:
Collapsed SW Foam (8-9-23)	8-9-23	12:15	G	W	3	N	N	X	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: 1.4 Corr'd: 1.4		Therm ID No.: 10
Relinquished by: Jacob Nominger	Company: Barley Excavating	Date/Time: 8-9-23 17:30	Received by: Fed Ex	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: D.S. Morrison	Company: EETSac	Date/Time: 08/10/23 1000
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

9/6/2023

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 500-238048-1

Login Number: 238048
List Number: 1
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 08/14/23 01:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2330246
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Sacramento
Sample Receiving Notes

500-238048 Field Sheet

Tracking # : 657897709842

Job:_____

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSL / OnTrac / Goldstreak / USPS / Other_____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations.
File in the job folder with the COC.

Therm. ID: L04 Corr. Factor: (+ / -) NA °C

Ice 1 Wet 1 Gel _____ Other _____

Cooler Custody Seal: 2330246

Cooler ID: _____

Temp Observed: 1.4 °C Corrected: 1.4 °C

From: Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials: DM Date: 08/10/23

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
COC is complete w/o discrepancies	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☑	☐	☐
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: SD Date: 8/14/23

Notes:_____

Trizma Lot #(s): _____

Ammonium
Acetate Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☐	☐	☑
Samples received within hold time?	☐	☐	☑
Log Release checked in TALS?	☐	☐	☑

Initials: SD Date: 8/14/23

Isotope Dilution Summary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
500-238048-1	Collapsed SW Foam (8-9-23)	71	92	87	74	76	93	84	70
500-238048-1 - DL	Collapsed SW Foam (8-9-23)	66	75	79	70	80	77	78	68
500-238048-1 - RA	Collapsed SW Foam (8-9-23)								
LCS 320-701569/2-A	Lab Control Sample	78	77	84	80	78	81	82	85
LCSD 320-701569/3-A	Lab Control Sample Dup	88	88	90	91	92	89	94	96
MB 320-701569/1-A	Method Blank	84	84	85	89	89	87	93	90

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	PFHxDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(10-150)	(25-150)
500-238048-1	Collapsed SW Foam (8-9-23)	61	49	39	97	71	92	88	64
500-238048-1 - DL	Collapsed SW Foam (8-9-23)	57	36	23 *5-	69	68	75	82	69
500-238048-1 - RA	Collapsed SW Foam (8-9-23)						73		
LCS 320-701569/2-A	Lab Control Sample	84	72	65	76	77	77	88	75
LCSD 320-701569/3-A	Lab Control Sample Dup	92	79	64	87	89	96	98	88
MB 320-701569/1-A	Method Blank	89	79	66	81	84	86	96	83

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		d5NEFOS	dMeFOSA	dEtFOSA	NMFM	NEFM	M242FTS	M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(10-150)	(10-150)	(10-150)	(10-150)	(25-150)	(25-150)	(25-150)
500-238048-1	Collapsed SW Foam (8-9-23)	74	52	49	63	64	122	93	104
500-238048-1 - DL	Collapsed SW Foam (8-9-23)	67	44	42	50	47	88	74	82
500-238048-1 - RA	Collapsed SW Foam (8-9-23)								
LCS 320-701569/2-A	Lab Control Sample	81	62	72	69	69	67	68	81
LCSD 320-701569/3-A	Lab Control Sample Dup	86	65	68	81	84	76	78	89
MB 320-701569/1-A	Method Blank	84	67	73	81	81	76	69	87

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		HFPODA	M102FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
500-238048-1	Collapsed SW Foam (8-9-23)	85	83
500-238048-1 - DL	Collapsed SW Foam (8-9-23)	60	58
500-238048-1 - RA	Collapsed SW Foam (8-9-23)		
LCS 320-701569/2-A	Lab Control Sample	67	83
LCSD 320-701569/3-A	Lab Control Sample Dup	74	99
MB 320-701569/1-A	Method Blank	75	92

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS

Isotope Dilution Summary

Client: ARCADIS US Inc
Job ID: 500-238048-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS

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ANALYTICAL REPORT

PREPARED FOR

Attn: Lisa Rutkowski
ARCADIS US Inc
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Generated 10/27/2023 2:31:15 PM

JOB DESCRIPTION

Marinette, WI 30171092.4.1.3 Collapsed Foam

JOB NUMBER

500-240907-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

myEOL

Eurofins Chicago

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

Results relate only to the items tested and the sample(s) as received by the laboratory. The results, detection limits (LOD) and Quantitation Limits (LOQ) have been adjusted for sample dilutions and/or solids content.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization

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10/27/2023 2:31:15 PM

Authorized for release by
Sandie Fredrick, Project Manager II
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

Table of Contents

Job ID: 500-240907-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-240907-1

Receipt
The sample was received on 10/11/2023 9:30 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 7.3º C.

Receipt Exceptions
The following sample(s) was received at the laboratory outside the required temperature criteria: Collapsed SW Foam (10-9-23). Collapsed SW Foam (10-9-23) (500-240907-1).

LCMS
Method 537 (modified): The laboratory control sample and laboratory control sample duplicate (LCS/LCSD) for preparation batch 320-714498 and 320-714498 and analytical batch 320-714795 recovered below the control limit for the following analyte: Perfluoro-n-octadecanoic acid (PFODA). This is a legacy analyte for the method and the state of Wisconsin is no longer concerned with its recovery; therefore, the data have been reported.

Method 537 (modified): The RPD of the low laboratory control sample (LLCS) and low laboratory control sample duplicate (LLCSD) for preparation batch 320-714498 and 320-714498 and analytical batch 320-714795 recovered outside control limits for the following analytes: Perfluoro-n-octadecanoic acid (PFODA)

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte: Collapsed SW Foam (10-9-23) (500-240907-1).

Method 537 (modified): The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: Collapsed SW Foam (10-9-23) (500-240907-1). These analytes have been qualified; however, the peaks did not saturate the instrument detector. The samples were diluted within calibration range, and both sets of data were reported.

Method 537 (modified): The low level continuing calibration verification (CCVL) standard associated with batch 320-715285 failed to meet acceptance limits for Perfluoro-n-octadecanoic acid (PFODA). This analyte is not a state regulated analyte; therefore, the data have been reported.

Method 537 (modified): Results for sample Collapsed SW Foam (10-9-23) (500-240907-1) was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits. The percent recovery for the internal standard in the 20x analysis is 99.7% after the dilution factor was applied to the labeled internal standard area count.

Method 537 (modified): The continuing calibration verification (CCV) standard associated with batch 320-715656 failed to meet acceptance limits for 13C2 PFHxDA, the associated target analytes Perfluoro-n-hexadecanoic acid (PFHxDA) and Perfluoro-n-octadecanoic acid (PFODA), are not state regulated analytes; therefore, the data have been reported.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte: Collapsed SW Foam (10-9-23) (500-240907-1).

Method 537 (modified): The continuing calibration verification (CCV) standard associated with batch 320-715656 failed to meet acceptance limits for Perfluoro-n-octadecanoic acid (PFODA), is not a state regulated analyte; therefore, the data have been reported. (CCV 320-715656/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-714498.

Job ID: 500-240907-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

Method: 3535_PFC_28D
Matrix: Aqueous

Method 3535: Due to the sample being dark brown in color, containing floating particulates and the potential for high analyte concentrations, the initial volume used for the following sample deviated from the standard procedure: Collapsed SW Foam (10-9-23) (500-240907-1). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.
Method: 3535_PFC_28D
Matrix: Aqueous

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-240907-1	Collapsed SW Foam (10-9-23)	Water	10/09/23 11:15	10/11/23 09:30

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (10-9-23)
Lab Sample ID: 500-240907-1
Date Collected: 10/09/23 11:15
Matrix: Water
Date Received: 10/11/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**540**		50	24	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoropentanoic acid (PFPeA)	**2200**		20	4.9	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorohexanoic acid (PFHxA)	**3700**		20	5.8	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoroheptanoic acid (PFHpA)	**970**		20	2.5	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorooctanoic acid (PFOA)	**7200**	**E**	20	8.5	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorononanoic acid (PFNA)	**6700**	**E**	20	2.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorodecanoic acid (PFDA)	**1400**		20	3.1	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoroundecanoic acid (PFUnA)	**460**		20	11	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorododecanoic acid (PFDoA)	**53**		20	5.5	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorotridecanoic acid (PFTriA)	<20		20	13	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorotetradecanoic acid (PFTeA)	**9.8**	**J**	20	7.3	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<20		20	8.9	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<20	*1 *-	20	9.4	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorobutanesulfonic acid (PFBS)	**31**		20	2.0	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoropentanesulfonic acid (PFPeS)	<20		20	3.0	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorohexanesulfonic acid (PFHxS)	**200**		20	5.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluoroheptanesulfonic acid (PFHpS)	**110**		20	1.9	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorooctanesulfonic acid (PFOS)	**25000**	**E**	20	5.4	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorononanesulfonic acid (PFNS)	**19**	**J**	20	3.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorodecanesulfonic acid (PFDS)	**26**		20	3.2	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorododecanesulfonic acid (PFDoS)	<20		20	9.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
Perfluorooctanesulfonamide (FOSA)	**2200**		20	9.8	ng/L		10/20/23 10:39	10/21/23 18:26	1
NEtFOSA	<20		20	8.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
NMeFOSA	<20		20	4.3	ng/L		10/20/23 10:39	10/21/23 18:26	1
NMeFOSAA	**45**	**J I**	50	12	ng/L		10/20/23 10:39	10/21/23 18:26	1
NEtFOSAA	**900**		50	13	ng/L		10/20/23 10:39	10/21/23 18:26	1
NMeFOSE	<40		40	14	ng/L		10/20/23 10:39	10/21/23 18:26	1
NEtFOSE	**18**	**J**	20	8.5	ng/L		10/20/23 10:39	10/21/23 18:26	1
4:2 FTS	**38**		20	2.4	ng/L		10/20/23 10:39	10/21/23 18:26	1
6:2 FTS	**8800**	**E**	50	25	ng/L		10/20/23 10:39	10/21/23 18:26	1
8:2 FTS	**25000**	**E**	20	4.6	ng/L		10/20/23 10:39	10/21/23 18:26	1
10:2 FTS	**91**		20	6.7	ng/L		10/20/23 10:39	10/21/23 18:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<20		20	4.0	ng/L		10/20/23 10:39	10/21/23 18:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<40		40	15	ng/L		10/20/23 10:39	10/21/23 18:26	1
F-53B Major	<20		20	2.4	ng/L		10/20/23 10:39	10/21/23 18:26	1
F-53B Minor	<20		20	3.2	ng/L		10/20/23 10:39	10/21/23 18:26	1

Client Sample ID: Collapsed SW Foam (10-9-23)
Lab Sample ID: 500-240907-1

Date Collected: 10/09/23 11:15
Matrix: Water
Date Received: 10/11/23 09:30

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	49		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C5 PFPeA	51		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFHxA	79		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C4 PFHpA	79		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C4 PFOA	81		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C5 PFNA	70		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFDA	70		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFUnA	72		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFDoA	62		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFTeDA	43		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 PFHxDA	38		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C3 PFBS	63		25 - 150	10/20/23 10:39	10/21/23 18:26	1
18O2 PFHxS	80		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C4 PFOS	78		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C8 FOSA	68		10 - 150	10/20/23 10:39	10/21/23 18:26	1
d3-NMeFOSAA	81		25 - 150	10/20/23 10:39	10/21/23 18:26	1
d5-NEtFOSAA	96		25 - 150	10/20/23 10:39	10/21/23 18:26	1
d-N-MeFOSA-M	57		10 - 150	10/20/23 10:39	10/21/23 18:26	1
d-N-EtFOSA-M	58		10 - 150	10/20/23 10:39	10/21/23 18:26	1
d7-N-MeFOSE-M	47		10 - 150	10/20/23 10:39	10/21/23 18:26	1
d9-N-EtFOSE-M	43		10 - 150	10/20/23 10:39	10/21/23 18:26	1
M2-4:2 FTS	103		25 - 150	10/20/23 10:39	10/21/23 18:26	1
M2-6:2 FTS	98		25 - 150	10/20/23 10:39	10/21/23 18:26	1
M2-8:2 FTS	106		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C3 HFPO-DA	75		25 - 150	10/20/23 10:39	10/21/23 18:26	1
13C2 10:2 FTS	85		25 - 150	10/20/23 10:39	10/21/23 18:26	1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**690**	**J**	1000	480	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoropentanoic acid (PFPeA)	**2300**		400	98	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorohexanoic acid (PFHxA)	**3900**		400	120	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoroheptanoic acid (PFHpA)	**1000**		400	50	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorooctanoic acid (PFOA)	**8100**		400	170	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorononanoic acid (PFNA)	**6800**		400	54	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorodecanoic acid (PFDA)	**1500**		400	62	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoroundecanoic acid (PFUnA)	**450**	**I**	400	220	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorododecanoic acid (PFDoA)	<400		400	110	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorotridecanoic acid (PFTriA)	<400		400	260	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorotetradecanoic acid (PFTeA)	<400		400	150	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoro-n-hexadecanoic acid (PFHxDA)	<400		400	180	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoro-n-octadecanoic acid (PFODA)	<400	*- *1	400	190	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorobutanesulfonic acid (PFBS)	<400		400	40	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoropentanesulfonic acid (PFPeS)	<400		400	60	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorohexanesulfonic acid (PFHxS)	**210**	**J**	400	110	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluoroheptanesulfonic acid (PFHpS)	<400		400	38	ng/L		10/20/23 10:39	10/25/23 16:22	20

Client Sample ID: Collapsed SW Foam (10-9-23)
Lab Sample ID: 500-240907-1
Date Collected: 10/09/23 11:15
Matrix: Water
Date Received: 10/11/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	**27000**		400	110	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorononanesulfonic acid (PFNS)	<400		400	74	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorodecanesulfonic acid (PFDS)	<400		400	64	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorododecanesulfonic acid (PFDoS)	<400		400	190	ng/L		10/20/23 10:39	10/25/23 16:22	20
Perfluorooctanesulfonamide (FOSA)	**2100**		400	200	ng/L		10/20/23 10:39	10/25/23 16:22	20
NEtFOSA	<400		400	170	ng/L		10/20/23 10:39	10/25/23 16:22	20
NMeFOSA	<400		400	86	ng/L		10/20/23 10:39	10/25/23 16:22	20
NMeFOSAA	<1000		1000	240	ng/L		10/20/23 10:39	10/25/23 16:22	20
NEtFOSAA	**870**	**J**	1000	260	ng/L		10/20/23 10:39	10/25/23 16:22	20
NMeFOSE	<800		800	280	ng/L		10/20/23 10:39	10/25/23 16:22	20
NEtFOSE	<400		400	170	ng/L		10/20/23 10:39	10/25/23 16:22	20
4:2 FTS	**53**	**J**	400	48	ng/L		10/20/23 10:39	10/25/23 16:22	20
6:2 FTS	**8400**		1000	500	ng/L		10/20/23 10:39	10/25/23 16:22	20
8:2 FTS	**26000**		400	92	ng/L		10/20/23 10:39	10/25/23 16:22	20
10:2 FTS	<400		400	130	ng/L		10/20/23 10:39	10/25/23 16:22	20
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<400		400	80	ng/L		10/20/23 10:39	10/25/23 16:22	20
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<800		800	300	ng/L		10/20/23 10:39	10/25/23 16:22	20
F-53B Major	<400		400	48	ng/L		10/20/23 10:39	10/25/23 16:22	20
F-53B Minor	<400		400	64	ng/L		10/20/23 10:39	10/25/23 16:22	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C5 PFPeA	*97*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFHxA	*91*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C4 PFHpA	*90*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C4 PFOA	*91*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C5 PFNA	*93*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFDA	*85*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFUnA	*76*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFDoA	*60*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFTeDA	*42*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C2 PFHxDA	*33*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C3 PFBS	*95*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
18O2 PFHxS	*84*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C4 PFOS	*82*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C8 FOSA	*78*		*10 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d3-NMeFOSAA	*90*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d5-NEtFOSAA	*104*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d-N-MeFOSA-M	*57*		*10 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d-N-EtFOSA-M	*63*		*10 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d7-N-MeFOSE-M	*60*		*10 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
d9-N-EtFOSE-M	*54*		*10 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
M2-4:2 FTS	*91*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
M2-6:2 FTS	*88*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
M2-8:2 FTS	*130*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*
13C3 HFPO-DA	*84*		*25 - 150*	*10/20/23 10:39*	*10/25/23 16:22*	*20*

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (10-9-23)
Lab Sample ID: 500-240907-1
Date Collected: 10/09/23 11:15
Matrix: Water
Date Received: 10/11/23 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 10:2 FTS	58		25 - 150	10/20/23 10:39	10/25/23 16:22	20

Definitions/Glossary

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Qualifiers

LCMS

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
E	Result exceeded calibration range.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-714498/1-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 714498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluoroheptanesulfonic acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/19/23 18:18	10/21/23 16:00	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/19/23 18:18	10/21/23 16:00	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/19/23 18:18	10/21/23 16:00	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/19/23 18:18	10/21/23 16:00	1
NMeFOSAA	<5.0		5.0	1.2	ng/L		10/19/23 18:18	10/21/23 16:00	1
NEtFOSAA	<5.0		5.0	1.3	ng/L		10/19/23 18:18	10/21/23 16:00	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/19/23 18:18	10/21/23 16:00	1
NEtFOSE	<2.0		2.0	0.85	ng/L		10/19/23 18:18	10/21/23 16:00	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/19/23 18:18	10/21/23 16:00	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/19/23 18:18	10/21/23 16:00	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/19/23 18:18	10/21/23 16:00	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/19/23 18:18	10/21/23 16:00	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<2.0		2.0	0.40	ng/L		10/19/23 18:18	10/21/23 16:00	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<4.0		4.0	1.5	ng/L		10/19/23 18:18	10/21/23 16:00	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/19/23 18:18	10/21/23 16:00	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/19/23 18:18	10/21/23 16:00	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*10/19/23 18:18*	*10/21/23 16:00*	*1*
13C5 PFPeA	*74*		*25 - 150*	*10/19/23 18:18*	*10/21/23 16:00*	*1*
13C2 PFHxA	*96*		*25 - 150*	*10/19/23 18:18*	*10/21/23 16:00*	*1*
13C4 PFHpA	*96*		*25 - 150*	*10/19/23 18:18*	*10/21/23 16:00*	*1*
13C4 PFOA	*98*		*25 - 150*	*10/19/23 18:18*	*10/21/23 16:00*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-714498/1-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 714498

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	92		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 PFDA	93		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 PFUnA	93		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 PFDoA	90		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 PFTeDA	83		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 PFHxDA	82		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C3 PFBS	85		25 - 150	10/19/23 18:18	10/21/23 16:00	1
18O2 PFHxS	97		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C4 PFOS	95		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C8 FOSA	92		10 - 150	10/19/23 18:18	10/21/23 16:00	1
d3-NMeFOSAA	115		25 - 150	10/19/23 18:18	10/21/23 16:00	1
d5-NEtFOSAA	115		25 - 150	10/19/23 18:18	10/21/23 16:00	1
d-N-MeFOSA-M	79		10 - 150	10/19/23 18:18	10/21/23 16:00	1
d-N-EtFOSA-M	86		10 - 150	10/19/23 18:18	10/21/23 16:00	1
d7-N-MeFOSE-M	78		10 - 150	10/19/23 18:18	10/21/23 16:00	1
d9-N-EtFOSE-M	77		10 - 150	10/19/23 18:18	10/21/23 16:00	1
M2-4:2 FTS	119		25 - 150	10/19/23 18:18	10/21/23 16:00	1
M2-6:2 FTS	118		25 - 150	10/19/23 18:18	10/21/23 16:00	1
M2-8:2 FTS	120		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C3 HFPO-DA	81		25 - 150	10/19/23 18:18	10/21/23 16:00	1
13C2 10:2 FTS	89		25 - 150	10/19/23 18:18	10/21/23 16:00	1

Lab Sample ID: LLCS 320-714498/2-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 714498

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	7.27		ng/L		91	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	7.94		ng/L		99	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	7.83		ng/L		98	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	8.10		ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	7.82		ng/L		98	50 - 150
Perfluorononanoic acid (PFNA)	8.00	8.07		ng/L		101	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	7.76		ng/L		97	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	8.52		ng/L		107	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	8.32		ng/L		104	50 - 150
Perfluorotridecanoic acid (PFTriA)	8.00	7.38		ng/L		92	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	7.95		ng/L		99	50 - 150
Perfluoro-n-hexadecanoic acid (PFHxDA)	8.00	7.90		ng/L		99	50 - 150
Perfluoro-n-octadecanoic acid (PFODA)	8.00	3.44	*-	ng/L		43	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	7.38		ng/L		104	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	8.06		ng/L		107	50 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-714498/2-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 714498

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid (PFHxS)	7.30	7.28		ng/L		100	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	7.51		ng/L		98	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	7.41		ng/L		100	50 - 150
Perfluorononanesulfonic acid (PFNS)	7.70	7.88		ng/L		102	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	7.48		ng/L		97	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	7.76	8.37		ng/L		108	50 - 150
Perfluorooctanesulfonamide (FOSA)	8.00	8.49		ng/L		106	50 - 150
NEtFOSA	8.00	6.88		ng/L		86	50 - 150
NMeFOSA	8.00	8.54		ng/L		107	50 - 150
NMeFOSAA	8.00	7.25		ng/L		91	50 - 150
NEtFOSAA	8.00	7.73		ng/L		97	50 - 150
NMeFOSE	8.00	7.34		ng/L		92	50 - 150
NEtFOSE	8.00	8.09		ng/L		101	50 - 150
4:2 FTS	7.50	7.01		ng/L		93	50 - 150
6:2 FTS	7.62	6.98		ng/L		92	50 - 150
8:2 FTS	7.68	7.23		ng/L		94	50 - 150
10:2 FTS	7.73	7.59		ng/L		98	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.57	7.74		ng/L		102	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	8.00	8.78		ng/L		110	50 - 150
F-53B Major	7.47	7.08		ng/L		95	50 - 150
F-53B Minor	7.55	8.10		ng/L		107	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*81*		*25 - 150*
13C5 PFPeA	*74*		*25 - 150*
13C2 PFHxA	*100*		*25 - 150*
13C4 PFHpA	*94*		*25 - 150*
13C4 PFOA	*97*		*25 - 150*
13C5 PFNA	*95*		*25 - 150*
13C2 PFDA	*95*		*25 - 150*
13C2 PFUnA	*93*		*25 - 150*
13C2 PFDoA	*93*		*25 - 150*
13C2 PFTeDA	*87*		*25 - 150*
13C2 PFHxDA	*72*		*25 - 150*
13C3 PFBS	*86*		*25 - 150*
18O2 PFHxS	*96*		*25 - 150*
13C4 PFOS	*97*		*25 - 150*
13C8 FOSA	*93*		*10 - 150*
d3-NMeFOSAA	*124*		*25 - 150*
d5-NEtFOSAA	*115*		*25 - 150*
d-N-MeFOSA-M	*76*		*10 - 150*
d-N-EtFOSA-M	*85*		*10 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-714498/2-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 714498

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
d7-N-MeFOSE-M	*76*		*10 - 150*
d9-N-EtFOSE-M	*77*		*10 - 150*
M2-4:2 FTS	*115*		*25 - 150*
M2-6:2 FTS	*119*		*25 - 150*
M2-8:2 FTS	*109*		*25 - 150*
13C3 HFPO-DA	*80*		*25 - 150*
13C2 10:2 FTS	*88*		*25 - 150*

Lab Sample ID: LLCSD 320-714498/3-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 714498

Analyte			Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			8.00	7.34		ng/L		92	50 - 150	1	30
Perfluoropentanoic acid (PFPeA)			8.00	8.15		ng/L		102	50 - 150	3	30
Perfluorohexanoic acid (PFHxA)			8.00	8.05		ng/L		101	50 - 150	3	30
Perfluoroheptanoic acid (PFHpA)			8.00	7.97		ng/L		100	50 - 150	2	30
Perfluorooctanoic acid (PFOA)			8.00	8.07		ng/L		101	50 - 150	3	30
Perfluorononanoic acid (PFNA)			8.00	8.50		ng/L		106	50 - 150	5	30
Perfluorodecanoic acid (PFDA)			8.00	7.79		ng/L		97	50 - 150	0.3	30
Perfluoroundecanoic acid (PFUnA)			8.00	8.39		ng/L		105	50 - 150	2	30
Perfluorododecanoic acid (PFDoA)			8.00	8.79		ng/L		110	50 - 150	5	30
Perfluorotridecanoic acid (PFTriA)			8.00	7.77		ng/L		97	50 - 150	5	30
Perfluorotetradecanoic acid (PFTeA)			8.00	8.17		ng/L		102	50 - 150	3	30
Perfluoro-n-hexadecanoic acid (PFHxDA)			8.00	7.60		ng/L		95	50 - 150	4	30
Perfluoro-n-octadecanoic acid (PFODA)			8.00	6.44	*1	ng/L		80	50 - 150	61	30
Perfluorobutanesulfonic acid (PFBS)			7.10	7.47		ng/L		105	50 - 150	1	30
Perfluoropentanesulfonic acid (PFPeS)			7.52	7.73		ng/L		103	50 - 150	4	30
Perfluorohexanesulfonic acid (PFHxS)			7.30	7.50		ng/L		103	50 - 150	3	30
Perfluoroheptanesulfonic acid (PFHpS)			7.63	7.48		ng/L		98	50 - 150	0.4	30
Perfluorooctanesulfonic acid (PFOS)			7.44	7.34		ng/L		99	50 - 150	0.9	30
Perfluorononanesulfonic acid (PFNS)			7.70	7.85		ng/L		102	50 - 150	0.3	30
Perfluorodecanesulfonic acid (PFDS)			7.71	7.25		ng/L		94	50 - 150	3	30
Perfluorododecanesulfonic acid (PFDoS)			7.76	7.92		ng/L		102	50 - 150	6	30
Perfluorooctanesulfonamide (FOSA)			8.00	8.90		ng/L		111	50 - 150	5	30
NEtFOSA			8.00	7.12		ng/L		89	50 - 150	3	30
NMeFOSA			8.00	8.44		ng/L		105	50 - 150	1	30
NMeFOSAA			8.00	7.36		ng/L		92	50 - 150	2	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCSD 320-714498/3-A
Matrix: Water
Analysis Batch: 714795

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 714498

Analyte			Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
NEtFOSAA			8.00	8.06		ng/L		101	50 - 150	4	30
NMeFOSE			8.00	9.96		ng/L		125	50 - 150	30	30
NEtFOSE			8.00	9.76		ng/L		122	50 - 150	19	30
4:2 FTS			7.50	7.05		ng/L		94	50 - 150	0.5	30
6:2 FTS			7.62	7.61		ng/L		100	50 - 150	9	30
8:2 FTS			7.68	7.25		ng/L		94	50 - 150	0.3	30
10:2 FTS			7.73	7.49		ng/L		97	50 - 150	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			7.57	7.74		ng/L		102	50 - 150	0.05	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)			8.00	8.69		ng/L		109	50 - 150	1	30
F-53B Major			7.47	7.83		ng/L		105	50 - 150	10	30
F-53B Minor			7.55	8.46		ng/L		112	50 - 150	4	30

Isotope Dilution	*LLCSD %Recovery*	*LLCSD Qualifier*	*Limits*
13C4 PFBA	*76*		*25 - 150*
13C5 PFPeA	*69*		*25 - 150*
13C2 PFHxA	*95*		*25 - 150*
13C4 PFHpA	*93*		*25 - 150*
13C4 PFOA	*91*		*25 - 150*
13C5 PFNA	*88*		*25 - 150*
13C2 PFDA	*91*		*25 - 150*
13C2 PFUnA	*86*		*25 - 150*
13C2 PFDoA	*84*		*25 - 150*
13C2 PFTeDA	*83*		*25 - 150*
13C2 PFHxDA	*82*		*25 - 150*
13C3 PFBS	*83*		*25 - 150*
18O2 PFHxS	*89*		*25 - 150*
13C4 PFOS	*91*		*25 - 150*
13C8 FOSA	*81*		*10 - 150*
d3-NMeFOSAA	*109*		*25 - 150*
d5-NEtFOSAA	*105*		*25 - 150*
d-N-MeFOSA-M	*68*		*10 - 150*
d-N-EtFOSA-M	*74*		*10 - 150*
d7-N-MeFOSE-M	*68*		*10 - 150*
d9-N-EtFOSE-M	*73*		*10 - 150*
M2-4:2 FTS	*104*		*25 - 150*
M2-6:2 FTS	*111*		*25 - 150*
M2-8:2 FTS	*107*		*25 - 150*
13C3 HFPO-DA	*80*		*25 - 150*
13C2 10:2 FTS	*89*		*25 - 150*

Lab Chronicle

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Client Sample ID: Collapsed SW Foam (10-9-23)
Lab Sample ID: 500-240907-1

Date Collected: 10/09/23 11:15
Matrix: Water
Date Received: 10/11/23 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			714498	EFG	EET SAC	10/20/23 10:39
Total/NA	Analysis	537 (modified)		1	714795	RS1	EET SAC	10/21/23 18:26
Total/NA	Prep	3535	DL		714498	EFG	EET SAC	10/20/23 10:39
Total/NA	Analysis	537 (modified)	DL	20	715656	S1C	EET SAC	10/25/23 16:22

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-24

Eurofins TestAmerica, Sacramento
880 Riverside Parkway

West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Lisa Rutkowski	Sampler: Jacob Remminger	Date: 10-9-23	COC No: 1
Arcadis U.S., Inc.	Email: N/A	Lab Contact: Sandie Fredrick	Carrier: FedEx	1 of 1 COCs
126 North Jefferson Street, Suite 400	Tel/Fax: N/A			
Milwaukee, WI 53202	Analysis Turnaround Time: ☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone	TAT if different from Below ____			Walk-in Client:
FAX	☑ 2 weeks			Lab Sampling:
Project Name: Marinette, WI	☐ 1 week			Lab Project Number: 50018970
Site: Marinette, WI	☐ 2 days			
P O # 30171092.4.1.3	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	EPA 537 Modified (36 Compounds)	Sample Specific Notes:
Collapsed SW Foam (10-9-23)	10-9-23	11:15	G	W	3	N	N	X	

500-240907 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☑ Yes ☐ No | Custody Seal No.: 2077932 | Cooler Temp. (°C): Obs'd: 7.3 Corr'd: 7.3 | Therm ID No.: 102

Relinquished by: Jacob Remminger	Company: Barley Excavating	Date/Time: 10-9-23 12:20	Received by: Fed Ex	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 10/11/23 0930
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 500-240907-1

Login Number: 240907
List Number: 1
Creator: Morazzini, Dominic S

List Source: Eurofins Sacramento
List Creation: 10/11/23 02:37 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2077432
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	7.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Sacramento Sample Receiving Notes (SSRN)

500-240907 Field Sheet

Tracking # 6483 4233 4458

Job _____

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSL / OnTrac / Goldstreak / USPS / Other_____

Use this form to record Sample Custody Seal Cooler Custody Seal Temperature & corrected Temperature & other observations.
File in the job folder with the COC

Therm ID 102 Corr Factor (+ / -) _____ °C

Ice_____ Wet / Gel _____ Other _____

Cooler Custody Seal 2077432

Cooler ID _____

Temp Observed 7.7 °C Corrected 7.3 °C

From Temp Blank ☐ Sample ☑

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☐	☑	☐
Frozen samples show signs of thaw?	☐	☐	☑

Initials. DM Date. 10/11/23

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
COC is complete w/o discrepancies	☑	☐	☐
Sample custody seal?	☐	☐	☑
Sample containers have legible labels?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Is the Field Sampler's name on COC?	☑	☐	☐
Samples w/o discrepancies?	☑	☐	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials. DM Date. 10/11/23

Notes

Lvol water, NO ice

Trizma Lot #(s) _____

Ammonium Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
NCM Filed?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
Log Release checked in TALS?	☐	☐	☑

Initials DM Date. 10/11/23

Isotope Dilution Summary

Client: ARCADIS US Inc
Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
500-240907-1	Collapsed SW Foam (10-9-23)	49	51	79	79	81	70	70	72
500-240907-1 - DL	Collapsed SW Foam (10-9-23)	94	97	91	90	91	93	85	76
LLCS 320-714498/2-A	Lab Control Sample	81	74	100	94	97	95	95	93
LLCSD 320-714498/3-A	Lab Control Sample Dup	76	69	95	93	91	88	91	86
MB 320-714498/1-A	Method Blank	82	74	96	96	98	92	93	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	PFHxDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(10-150)	(25-150)
500-240907-1	Collapsed SW Foam (10-9-23)	62	43	38	63	80	78	68	81
500-240907-1 - DL	Collapsed SW Foam (10-9-23)	60	42	33	95	84	82	78	90
LLCS 320-714498/2-A	Lab Control Sample	93	87	72	86	96	97	93	124
LLCSD 320-714498/3-A	Lab Control Sample Dup	84	83	82	83	89	91	81	109
MB 320-714498/1-A	Method Blank	90	83	82	85	97	95	92	115

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		d5NEFOS	dMeFOSA	dEtFOSA	NMFM	NEFM	M242FTS	M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(10-150)	(10-150)	(10-150)	(10-150)	(25-150)	(25-150)	(25-150)
500-240907-1	Collapsed SW Foam (10-9-23)	96	57	58	47	43	103	98	106
500-240907-1 - DL	Collapsed SW Foam (10-9-23)	104	57	63	60	54	91	88	130
LLCS 320-714498/2-A	Lab Control Sample	115	76	85	76	77	115	119	109
LLCSD 320-714498/3-A	Lab Control Sample Dup	105	68	74	68	73	104	111	107
MB 320-714498/1-A	Method Blank	115	79	86	78	77	119	118	120

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		HFPODA	M102FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
500-240907-1	Collapsed SW Foam (10-9-23)	75	85
500-240907-1 - DL	Collapsed SW Foam (10-9-23)	84	58
LLCS 320-714498/2-A	Lab Control Sample	80	88
LLCSD 320-714498/3-A	Lab Control Sample Dup	80	89
MB 320-714498/1-A	Method Blank	81	89

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxDA = 13C2 PFHxDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M

Isotope Dilution Summary

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Job ID: 500-240907-1
Project/Site: Marinette, WI 30171092.4.1.3 Collapsed Foam

dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS