Alyssa Sellwood
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, WI 53707

Arcadis U.S., Inc.
126 North Jefferson Street
Milwaukee, Wisconsin 53202
www.arcadis.com

Date:
November 6, 2020

Subject:
Sample Results Notification, Tyco Fire Technology Center PFAS, 2700 Industrial Parkway South, Marinette, Wisconsin
BRRTS Activity#: 02-38-580694

Tyco Environmental Assessment Call Line:
(800) 314-1381

Responsible Party:
Tyco Fire Products LP
2700 Industrial Parkway S
Marinette, WI 54143

Site Name:
Tyco Fire Technology Center

BRRTS No.:
02-38-580694

Dear Ms. Sellwood:

On behalf of Tyco Fire Products LP (Tyco), Arcadis is providing this *Sample Results Notification* for off-site investigation activities related to the Tyco Fire Technology Center PFAS site located at 2700 Industrial Parkway South in Marinette, Wisconsin (Site).

This *Sample Results Notification* is being provided to satisfy NR716.14(2) for groundwater samples that were collected from Ditch B as part of a pre-design investigation for a source-control solution. Arcadis collected 30 groundwater samples from Ditch B on October 10, 2020 consistent with our previously submitted *Pre-Design Investigation Work Plan*. We recorded the sample location, date, and other information and had the sample tested at an accredited, independent laboratory. That testing is now complete, and the results are summarized in the attached table with sample locations depicted in the attached figure.

The groundwater results are consistent with the surface water results reported earlier this week. Together, these results will enable us to move from interim measures toward a permanent source-control solution.

Groundwater samples were taken in the same locations as the surface water samples upstream and downstream from the existing Ditch B treatment system but from beneath the bottom of the ditch. Also consistent with the previously shared surface water results, the groundwater results in this area also show elevated levels of PFAS.

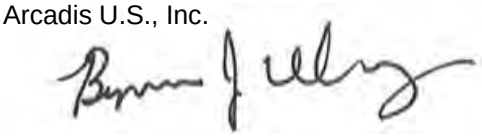
Owners of each parcel that was accessed to collect the samples were notified of their results in a letter received November 6, 2020. Those letters are attached for your convenience.

These results will be combined with other previously collected and future planned sampling results and evaluated comprehensively in a future submittal.

Please do not hesitate to call us if you have any questions.

Sincerely,

Arcadis U.S., Inc.



Benjamin J. Verburg, P.E.
Principal Engineer

Copies:
David Neste
Bridget Kelly
Jeff Danko
Scott Wahl

Attachments:
Summary Results Table
Sample Locations Figure
Laboratory Reports
Owner Notification Letters

Table 1
Groundwater Sample Results
Sample Results Notification
Tyco FTC PFAS
Marinette, Wisconsin

	Location	GW-L01	GW-L02	GW-L03	GW-L04	GW-L05	GW-L06
	Sample Date	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020
Chemical Name	Units						
PFOA	ng/l	**9.8**	**16**	**2100 D**	**12**	**13**	**19**
PFOS	ng/l	< 2.2 U	**2.1**	**87**	< 2.1 U	< 1.8 U	**4.2**
PFBS	ng/l	< 2.2 U	**5.8**	**6.6**	< 2.1 U	**1.1 J**	< 2.0 U
PFHpA	ng/l	**1.0 J**	**26**	**120**	**3.4**	**4.5**	**3.1**
PFHxS	ng/l	**0.96 J**	**1.5 J**	**56**	**2.0 J**	**0.89 J**	**1.1 J**
PFNA	ng/l	< 2.2 U	**18**	**59**	**3.1**	**1.6 J**	**3.5**
PFDA	ng/l	< 2.2 U	< 1.7 U	**2.5**	< 2.1 U	< 1.8 U	< 2.0 U
PFDoA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFHxA	ng/l	**2.1 J**	**42**	**300**	**5.9**	**5.7**	**6.1**
PFTeA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFTriA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFUnA	ng/l	< 2.2 U	**4.4 JN**	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
NEtFOSAA	ng/l	< 5.5 U	< 4.3 U	**1.8 J**	< 5.2 U	< 4.6 U	< 5.1 U
NMeFOSAA	ng/l	< 5.5 U	< 4.3 U	< 4.4 U	< 5.2 U	< 4.6 U	< 5.1 U
PFBA	ng/l	**3.0 J**	**23**	**76**	**9.1**	**11**	**6.4**
PFPeA	ng/l	**2.4**	**38**	**240**	**8.2**	**7.0**	**5.8**
PFHxDA	ng/l	< 2.2 U	< 1.7 UJ	< 1.7 UJ	< 2.1 U	< 1.8 U	< 2.0 U
PFODA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFPeS	ng/l	< 2.2 U	**1.3 J**	**7.0**	< 2.1 U	< 1.8 U	< 2.0 U
PFHpS	ng/l	< 2.2 U	< 1.7 U	**1.5 J**	< 2.1 U	< 1.8 U	< 2.0 U
PFNS	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFDS	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
PFDoS	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 UJ	< 2.0 U
FOSA	ng/l	< 2.2 U	< 1.7 U	**3.9**	< 2.1 U	< 1.8 U	< 2.0 U
NEtFOSA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
NMeFOSA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
NMeFOSE	ng/l	< 4.4 U	< 3.4 U	< 3.5 U	< 4.2 U	< 3.7 U	< 4.1 U
NEtFOSE	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
4:2 FTS	ng/l	< 2.2 U	< 1.7 U	**28**	< 2.1 U	< 1.8 U	**0.57 J**
6:2 FTS	ng/l	< 5.5 U	< 4.3 U	**1100 D**	< 5.2 U	< 4.6 U	**21**
8:2 FTS	ng/l	**0.61 J**	**0.74 J-**	**73 J-**	< 2.1 U	< 1.8 U	**2.4**
10:2 FTS	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
DONA	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
GenX	ng/l	< 4.4 U	< 3.4 U	< 3.5 U	< 4.2 U	< 3.7 U	< 4.1 U
F-53B Major	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
F-53B Minor	ng/l	< 2.2 U	< 1.7 U	< 1.7 U	< 2.1 U	< 1.8 U	< 2.0 U
TSS	mg/l	**420**	**170**	**680**	**1600**	**200**	**270**

Table 1
Groundwater Sample Results
Sample Results Notification
Tyco FTC PFAS
Marinette, Wisconsin

	Location	GW-L07	GW-L08	GW-L09	GW-L10	GW-M01	GW-M02
	Sample Date	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020
Chemical Name	Units						
PFOA	ng/l	**12 J [5.7 J]**	**14**	**17**	**8.6**	**140**	**49**
PFOS	ng/l	< 2.0 U [< 1.9 U]	**2.3**	**5.5**	< 1.9 U	**42**	**5.6**
PFBS	ng/l	**0.78 J [0.74 J]**	< 1.9 U	**1.6 J**	**1.5 J**	**1.2 J**	**1.0 J**
PFHpA	ng/l	**2.4 [2.0]**	**1.7 J**	**4.0**	**4.6**	**13**	**7.2**
PFHxS	ng/l	**1.1 J [0.79 J]**	**0.84 J**	**1.8**	**0.65 J**	**3.8**	**2.7**
PFNA	ng/l	**5.5 [1.7 J]**	**8.9**	**1.6 J**	**1.9**	**16**	**8.2**
PFDA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	**3.9**	< 1.7 U
PFDoA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFHxA	ng/l	**4.9 [3.1]**	**4.2**	**6.4**	**6.8**	**24**	**12**
PFTeA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFTriA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFUnA	ng/l	< 2.0 U [< 1.9 U]	**1.2 J**	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
NEtFOSAA	ng/l	< 5.1 U [< 4.8 U]	< 4.9 U	< 4.6 U	< 4.8 U	< 4.4 U	< 4.2 U
NMeFOSAA	ng/l	< 5.1 U [< 4.8 U]	< 4.9 U	< 4.6 U	< 4.8 U	< 4.4 U	< 4.2 U
PFBA	ng/l	**5.9 [4.5 J]**	**3.7 J**	**8.7**	**8.9**	**17**	**7.2**
PFPeA	ng/l	**5.5 [4.2]**	**3.3**	**7.0**	**8.1**	**24**	**11**
PFHxDA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFODA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFPeS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFHpS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFNS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFDS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
PFDoS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
FOSA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	**1.5 J**	< 1.7 U
NEtFOSA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
NMeFOSA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
NMeFOSE	ng/l	< 4.1 U [< 3.9 U]	< 3.9 U	< 3.7 U	< 3.9 U	< 3.5 U	< 3.4 U
NEtFOSE	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
4:2 FTS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	**0.96 J**	**0.55 J**
6:2 FTS	ng/l	**11 J [3.0 J]**	**8.0**	**11**	**7.1**	**73**	**27**
8:2 FTS	ng/l	**0.92 J [0.57 J]**	**2.3**	**1.5 J**	**2.6**	**35**	**7.3**
10:2 FTS	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
DONA	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
GenX	ng/l	< 4.1 U [< 3.9 U]	< 3.9 U	< 3.7 U	< 3.9 U	< 3.5 U	< 3.4 U
F-53B Major	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
F-53B Minor	ng/l	< 2.0 U [< 1.9 U]	< 1.9 U	< 1.8 U	< 1.9 U	< 1.8 U	< 1.7 U
TSS	mg/l	**180 J [90 J]**	**400**	**340**	**430**	**160**	**320**

Table 1
Groundwater Sample Results
Sample Results Notification
Tyco FTC PFAS
Marinette, Wisconsin

	Location	GW-M03	GW-M04	GW-M05	GW-M06	GW-M07	GW-M08
	Sample Date	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020
Chemical Name	Units						
PFOA	ng/l	**80**	**110 J [76 J]**	**170**	**700 D**	**4300 D**	**370**
PFOS	ng/l	**19**	**23 J [17 J]**	**35**	**6.8**	**420 D**	**57**
PFBS	ng/l	**0.66 J**	< 1.9 U **[0.68 J]**	**1.2 J**	**4.2**	**7.5**	< 2.3 U
PFHpA	ng/l	**5.1**	**8.5 [5.2]**	**14**	**55**	**600 D**	**59**
PFHxS	ng/l	**3.0**	**5.9 [4.0]**	**10**	**47**	**220**	**20**
PFNA	ng/l	**8.2**	**5.8** [< 1.8 U]	**17**	**6.9**	**220**	**36**
PFDA	ng/l	**1.8**	< 1.9 U [< 1.8 U]	**4.3**	< 1.8 U	**18**	**2.9**
PFDoA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	**0.87 J**
PFHxA	ng/l	**10**	**23 J [15 J]**	**27**	**140**	**1100 D**	**130**
PFTeA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFTriA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFUnA	ng/l	< 1.8 U	**1.5 J** [< 1.8 U]	**6.9**	< 1.8 U	**35**	< 2.3 U
NEtFOSAA	ng/l	**8.9**	**5.8 [5.0]**	**5.4**	< 4.6 U	**23**	< 5.8 U
NMeFOSAA	ng/l	< 4.6 U	< 4.8 U [< 4.4 U]	< 4.1 U	< 4.6 U	< 4.6 U	< 5.8 U
PFBA	ng/l	**5.6**	**11 [7.6]**	**14**	**37**	**310**	**55**
PFPeA	ng/l	**9.8**	**19 J [10 J]**	**25**	**100**	**1300 D**	**160**
PFHxDA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFODA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFPeS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	**0.79 J**	**4.6**	**9.9**	< 2.3 U
PFHpS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	**6.7**	< 2.3 U
PFNS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFDS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
PFDoS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
FOSA	ng/l	**14**	**6.7 [5.8]**	**42**	< 1.8 U	**260**	**3.5**
NEtFOSA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
NMeFOSA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
NMeFOSE	ng/l	< 3.7 U	< 3.8 U [< 3.5 U]	< 3.3 U	< 3.7 U	< 3.7 U	< 4.6 U
NEtFOSE	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
4:2 FTS	ng/l	**0.71 J**	**1.5 J [0.68 J]**	**2.7**	**22**	**110**	**10**
6:2 FTS	ng/l	**38**	**63 J [22 J]**	**170**	**960 D**	**4000 D**	**730 D**
8:2 FTS	ng/l	**19 J-**	**18 J [11 J]**	**170**	**3.0**	**650 D**	**120 J+**
10:2 FTS	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 37 UD	< 2.3 U
DONA	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
GenX	ng/l	< 3.7 U	< 3.8 U [< 3.5 U]	< 3.3 U	< 3.7 U	< 3.7 U	< 4.6 U
F-53B Major	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
F-53B Minor	ng/l	< 1.8 U	< 1.9 U [< 1.8 U]	< 1.7 U	< 1.8 U	< 1.9 U	< 2.3 U
TSS	mg/l	**100**	**790 J [540 J]**	**490**	**260**	**320**	NA

Table 1
Groundwater Sample Results
Sample Results Notification
Tyco FTC PFAS
Marinette, Wisconsin

	Location	GW-M09	GW-M10	GW-U01	GW-U02	GW-U03	GW-U04
	Sample Date	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020
Chemical Name	Units						
PFOA	ng/l	**89**	**250**	**250**	**110 [110]**	**12000**	**14000 D**
PFOS	ng/l	**53**	**27**	**100**	**42 [43]**	**1300**	**820 D**
PFBS	ng/l	**3.0**	**1.2 J**	**3.0 J**	**1.3 J [1.2 J]**	< 170 U	**8.9**
PFHpA	ng/l	**58**	**18**	**65**	**21 [22]**	**2000**	**1900 D**
PFHxS	ng/l	**5.6**	**60**	**34**	**8.4 [8.3]**	**200**	**130**
PFNA	ng/l	**18**	**2.4**	**44**	**18 [20]**	**540**	**380**
PFDA	ng/l	**18**	< 1.8 U	< 3.7 U	**2.3 [2.4]**	**82 J**	**89**
PFDoA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFHxA	ng/l	**110**	**30**	**140**	**52 [53]**	**5100**	**5500 D**
PFTeA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFTriA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFUnA	ng/l	< 3.2 UY	< 1.8 U	**3.8**	**1.3 J [1.4 J]**	< 170 U	< 2.2 U
NEtFOSAA	ng/l	< 4.9 U	< 4.4 U	< 9.3 U	**1.8 J [1.6 J]**	< 430 U	< 5.4 U
NMeFOSAA	ng/l	< 4.9 U	< 4.4 U	< 9.3 U	< 4.9 U [< 4.7 U]	< 430 U	< 5.4 U
PFBA	ng/l	**73**	**21**	**64**	**25 [25]**	**1400**	**1400 D**
PFPeA	ng/l	**180**	**33**	**140**	**65 [67]**	**5700**	**5200 D**
PFHxDA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFODA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFPeS	ng/l	< 2.0 U	**0.46 J**	< 3.7 U	< 2.0 U **[0.58 J]**	< 170 U	**11**
PFHpS	ng/l	< 2.0 U	**3.9**	**3.4 J**	< 2.0 U [< 1.9 U]	< 170 U	**10**
PFNS	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFDS	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
PFDoS	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
FOSA	ng/l	**20**	< 1.8 U	< 3.7 U	**6.7 [6.2]**	< 170 U	**13**
NEtFOSA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
NMeFOSA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
NMeFOSE	ng/l	< 4.0 U	< 3.5 U	< 7.5 U	< 3.9 U [< 3.8 U]	< 350 U	< 4.3 U
NEtFOSE	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
4:2 FTS	ng/l	< 2.0 U	**0.71 J**	**5.8**	**5.0 [5.0]**	**440**	**370**
6:2 FTS	ng/l	**210 D**	**63**	**670**	**520 DJ [240 DJ]**	**41000 D**	**14000 DJ-**
8:2 FTS	ng/l	**460 D**	**15**	**57**	**63 [63 J-]**	**3200**	**3600 D**
10:2 FTS	ng/l	< 9.9 UD	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 220 UD
DONA	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
GenX	ng/l	< 4.0 U	< 3.5 U	< 7.5 U	< 3.9 U [< 3.8 U]	< 350 U	< 4.3 U
F-53B Major	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
F-53B Minor	ng/l	< 2.0 U	< 1.8 U	< 3.7 U	< 2.0 U [< 1.9 U]	< 170 U	< 2.2 U
TSS	mg/l	**200**	**250**	NA	**360 J [320 J]**	**540**	**18000**

Table 1
Groundwater Sample Results
Sample Results Notification
Tyco FTC PFAS
Marinette, Wisconsin

	Location	GW-U05	GW-U06	GW-U07	GW-U08	GW-U09	GW-U10
	Sample Date	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020	10/10/2020
Chemical Name	Units						
PFOA	ng/l	**13**	**170**	**170**	**300**	**67**	**12**
PFOS	ng/l	< 11 U	**21**	**34**	**37**	**5.0**	**3.4**
PFBS	ng/l	**1.6 J**	**1.8**	**2.8**	**5.0**	**0.62 J**	**0.73 J**
PFHpA	ng/l	**5.4 J**	**94**	**120**	**110**	**42**	**17**
PFHxS	ng/l	< 11 U	**23**	**44**	**110**	**4.9**	**2.1**
PFNA	ng/l	< 11 U	**13**	**18**	**21**	**3.6**	< 1.9 U
PFDA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	**1.1 J**	< 1.9 U
PFDoA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFHxA	ng/l	**6.9 J**	**150**	**230**	**170**	**61**	**27**
PFTeA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFTriA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFUnA	ng/l	< 11 UJ	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
NEtFOSAA	ng/l	< 27 U	< 4.3 U	< 4.6 U	< 4.6 U	< 5.1 U	< 4.8 U
NMeFOSAA	ng/l	< 27 U	< 4.3 U	< 4.6 U	< 4.6 U	< 5.1 U	< 4.8 U
PFBA	ng/l	**13 J**	**76**	**120**	**83**	**36**	**19**
PFPeA	ng/l	**7.8 J**	**190**	**340**	**220**	**83**	**46**
PFHxDA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFODA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFPeS	ng/l	< 11 U	**1.3 J**	**3.6**	**4.6**	< 2.0 U	< 1.9 U
PFHpS	ng/l	< 11 U	< 1.7 U	**2.0**	**2.0**	< 2.0 U	< 1.9 U
PFNS	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFDS	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
PFDoS	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
FOSA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
NEtFOSA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
NMeFOSA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
NMeFOSE	ng/l	< 22 U	< 3.5 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.8 U
NEtFOSE	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
4:2 FTS	ng/l	< 11 U	**0.46 J**	**3.5**	**5.2**	**0.73 J-**	< 1.9 U
6:2 FTS	ng/l	< 27 U	**58 J-**	**410 D**	**240**	**41 J-**	**13**
8:2 FTS	ng/l	< 11 U	**1.5 J-**	**15**	**9.1**	**2.7 J-**	< 1.9 U
10:2 FTS	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
DONA	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
GenX	ng/l	< 22 U	< 3.5 U	< 3.7 U	< 3.7 U	< 4.1 U	< 3.8 U
F-53B Major	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
F-53B Minor	ng/l	< 11 U	< 1.7 U	< 1.8 U	< 1.9 U	< 2.0 U	< 1.9 U
TSS	mg/l	**810 J**	**900**	**1000**	**280**	**3200**	**820**

Notes:

Detections are boldfaced

ng/l = nanograms per liter

mg/l = milligrams per liter

J = Result is between method detection limit and reporting limit, and is therefore estimated

U = The compound was analyzed for but not detected. The associated value is the compound quantitation limit

D = Dilution required for sample analysis

UJ = The compound was not detected above the reported sample method detection limit. However, the reported limit is approximate and may or may not represent the actual method detection limit.

J- = The result is an estimated quantity. The associated numerical value is expected to have a negative or low bias.

J+ = The result is an estimated quantity. The associated numerical value is expected to have a positive or high bias.

JN = The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only

UY = estimated maximum possible concentration (EMPC)

PFOA = Perfluorooctanoic acid (C8)

PFOS = Perfluorooctanesulfonic acid (C8)

PFBS = Perfluorobutanesulfonic acid (C4)

PFHpA = Perfluoroheptanoic acid (C7)

PFHxS = Perfluorohexanesulfonic acid (C6)

PFNA = Perfluorononanoic acid (C9)

PFDA = Perfluorodecanoic acid (C10)

PFDoA = Perfluorododecanoic acid (C12)

PFHxA = Perfluorohexanoic acid (C6)

PFTeA = Perfluorotetradecanoic acid (C14)

PFTriA = Perfluorotridecanoic acid (C13)

PFUnA = Perfluoroundecanoic acid (C11)

NEtFOSAA = N-ethylperfluorooctanesulfonamidoacetic acid (C12)

NMeFOSAA = N-methylperfluorooctanesulfonamidoacetic acid (C11)

PFBA = Perfluorobutanoic acid (C4)

PFPeA = Perfluoropentanoic acid (C5)

PFHxDA = Perfluoro-n-hexadecanoic acid (C16)

PFODA = Perfluoro-n-octadecanoic acid (C18)

PFPeS = Perfluoropentanesulfonic acid (C5)

PFHpS = Perfluoroheptanesulfonic acid (C7)

PFNS = Perfluorononanesulfonic acid (C9)

PFDS = Perfluorodecanesulfonic acid (C10)

PFDoS = Perfluorododecanesulfonic acid (C12)

FOSA = Perfluorooctanesulfonamide (C8)

NEtFOSA = N-ethylperfluorooctanesulfonamide (C10)

NMeFOSA = N-methylperfluorooctanesulfonamide (C9)

NMeFOSE = N-methylperfluorooctanesulfonamidoethanol (C11)

NEtFOSE = N-ethylperfluorooctanesulfonamidoethanol (C12)

4:2 FTS = 4:2 fluorotelomer sulfonate (C6)

6:2 FTS = 6:2 fluorotelomer sulfonate (C8)

8:2 FTS = 8:2 fluorotelomer sulfonate (C10)

10:2 FTS = 10:2 fluorotelomer sulfonate (C12)

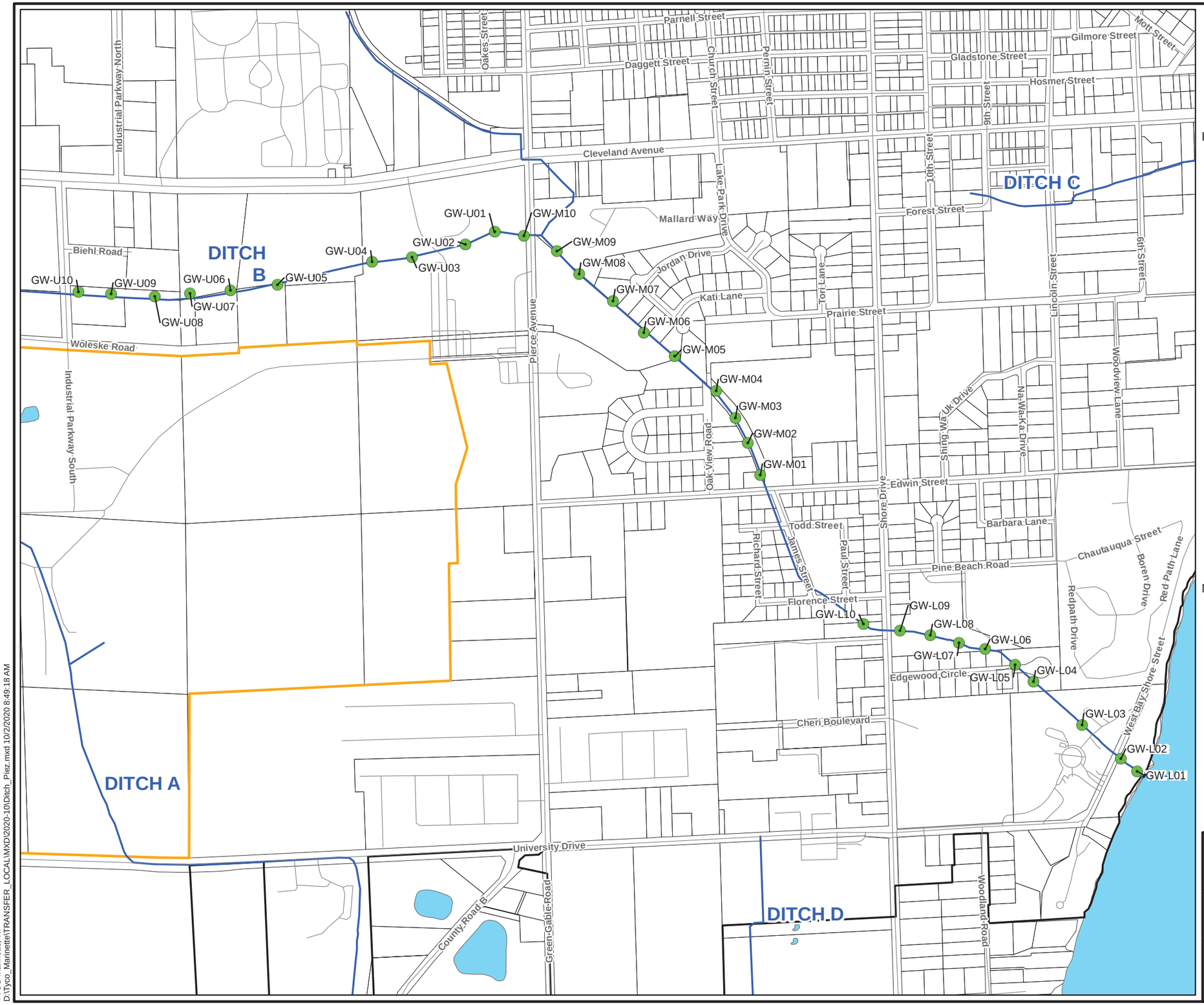
DONA = 4,8-Dioxa-3H-perfluorononanoic acid (C7)

GenX = Hexafluoropropylene oxide dimer acid (C6)

F-53B Major = 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (C8)

F-53B Minor = 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (C10)

TSS = Total Suspended Solids



LEGEND:

- GROUNDWATER SAMPLE LOCATION
- APPROXIMATE SITE PROPERTY BOUNDARY
- APPROXIMATE MARINETTE CITY BOUNDARY
- PARCEL BOUNDARY
- ROAD
- DITCH/STREAM
- 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.

0 750 1,500

GRAPHIC SCALE IN FEET

TYCO FIRE TECHNOLOGY CENTER
MARINETTE, WISCONSIN

GROUNDWATER SAMPLE LOCATIONS

ARCADIS

FIGURE
1

City: Minneapolis/Citrix Div/Group: IMDVC Created By: Last Saved By: MSMiller
TYCO Marinette, WI
D:\Tyco_Marinette\TRANSFER_LOCAL\MXD\2020-10\Ditch_Piez.mxd 10/2/2020 8:49:18 AM

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65549-1
Client Project/Site: Marinette 30015296.00009

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski

Sandie Fredrick

Authorized for release by:
10/23/2020 10:17:06 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
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.

General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.

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

Job ID: 320-65549-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-65549-1

Comments
No additional comments.

Receipt
The samples were received on 10/13/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.1º C, 1.4º C, 2.0º C and 3.1º C.

Receipt Exceptions
All samples received shows odds yellow/dark color. 320-65549-1, 320-65549-2, 320-65549-3, 320-65549-4, 320-65549-5, 320-65549-5[MS], 320-65549-5[MSD], 320-65549-6, 320-65549-7, 320-65549-8, 320-65549-9, 320-65549-10 and 320-65549-11

LCMS
Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of 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. CCVL 320-422430/2

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). 320-65549-2

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery for M2-8:2 FTS is above the method recommended limit for the following samples: 320-65549-2 and 320-65549-3. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery mfor 13C2 PFHxDA associated with the following samples is below the method recommended limit: 320-65549-2 and 320-65549-6. 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 samples.

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 320-422145 and analytical batch 320-422445 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

Method 537 (modified): Results for samples 320-65549-3 were 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.

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of 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. CCVL 320-422844/2

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

General Chemistry
Method SM 2540D: The TSS matrix duplicate (DU) % RPD precision was outside of control limits for the following sample in batch:566813 320-65549-C-11 DU. The laboratory control standard (LCS) recovery met acceptance criteria

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 samples contain a thin layer of sediments at the bottom of the bottles prior to extraction 320-65549-1, 320-65549-2, 320-65549-3, 320-65549-4, 320-65549-5, 320-65549-5[MS], 320-65549-5[MSD], 320-65549-6, 320-65549-7, 320-65549-8, 320-65549-9, 320-65549-10 and 320-65549-11. Method Code :3535 PFC Matrix:Water preparation batch 320-422145

Job ID: 320-65549-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 3535: Due to the excess amount of sediment, the following samples were fortified with IDA then centrifuged and decanted into new container: 320-65549-1, 320-65549-2, 320-65549-3, 320-65549-4, 320-65549-5, 320-65549-5[MS], 320-65549-5[MSD], 320-65549-6, 320-65549-7, 320-65549-8, 320-65549-9, 320-65549-10 and 320-65549-11. The samples centrifuged tubes were kept for the eluting process. Method Code :3535 PFC Matrix:Water preparation batch 320-422145

Method 3535: The following samples were green after final volume:320-65549-5 and 320-65549-6. Method Code :3535 PFC Matrix:Water preparation batch 320-422145

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L01-10102020 — Lab Sample ID: 320-65549-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.0	J	5.5	2.6	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.4		2.2	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.1	J	2.2	0.64	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.0	J	2.2	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	9.8		2.2	0.93	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.96	J	2.2	0.62	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.61	J	2.2	0.50	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	420		50	19	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L02-10102020 — Lab Sample ID: 320-65549-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	23		4.3	2.0	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	38		1.7	0.42	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	42		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	26		1.7	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	16		1.7	0.73	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	18		1.7	0.23	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	4.4	I	1.7	0.94	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.8		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.3	J	1.7	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.5	J	1.7	0.49	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.1		1.7	0.46	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.74	J	1.7	0.39	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	170		20	7.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L03-10102020 — Lab Sample ID: 320-65549-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	76		4.4	2.1	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	240		1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	300		1.7	0.51	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	120		1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	59		1.7	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.5		1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.6		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	7.0		1.7	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	56		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.5	J	1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	87		1.7	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	3.9		1.7	0.86	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.8	J	4.4	1.1	ng/L	1		537 (modified)	Total/NA
4:2 FTS	28		1.7	0.21	ng/L	1		537 (modified)	Total/NA
8:2 FTS	73		1.7	0.40	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	2100		17	7.4	ng/L	10		537 (modified)	Total/NA
6:2 FTS - DL	1100		44	22	ng/L	10		537 (modified)	Total/NA
Total Suspended Solids	680		200	77	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L04-10102020 — Lab Sample ID: 320-65549-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	9.1		5.2	2.5	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	8.2		2.1	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.9		2.1	0.61	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.4		2.1	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		2.1	0.89	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	3.1		2.1	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.0	J	2.1	0.60	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	1600		200	77	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L05-10102020 — Lab Sample ID: 320-65549-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	11		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.0		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.7		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.5		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.6	J	1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.1	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.89	J	1.8	0.52	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	200		20	7.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L06-10102020 — Lab Sample ID: 320-65549-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.4		5.1	2.4	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.8		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.1		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.1		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	19		2.0	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	3.5		2.0	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	4.2		2.0	0.55	ng/L	1		537 (modified)	Total/NA
4:2 FTS	0.57	J	2.0	0.24	ng/L	1		537 (modified)	Total/NA
6:2 FTS	21		5.1	2.5	ng/L	1		537 (modified)	Total/NA
8:2 FTS	2.4		2.0	0.47	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	270		20	7.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L07-10102020 — Lab Sample ID: 320-65549-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.9		5.1	2.5	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.5		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.9		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.4		2.0	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		2.0	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	5.5		2.0	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.78	J	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J	2.0	0.58	ng/L	1		537 (modified)	Total/NA
6:2 FTS	11		5.1	2.6	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.92	J	2.0	0.47	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	180		20	7.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L08-10102020 — Lab Sample ID: 320-65549-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	3.7	J	4.9	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.3		1.9	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.2		1.9	0.57	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.7	J	1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	14		1.9	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	8.9		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.2	J	1.9	1.1	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.84	J	1.9	0.56	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.3		1.9	0.53	ng/L	1		537 (modified)	Total/NA
6:2 FTS	8.0		4.9	2.4	ng/L	1		537 (modified)	Total/NA
8:2 FTS	2.3		1.9	0.45	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	400		33	13	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L09-10102020 — Lab Sample ID: 320-65549-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.7		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.0		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.4		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.0		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	17		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.6	J	1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.8		1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.5		1.8	0.50	ng/L	1		537 (modified)	Total/NA
6:2 FTS	11		4.6	2.3	ng/L	1		537 (modified)	Total/NA
8:2 FTS	1.5	J	1.8	0.42	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	340		50	19	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-L10-10102020 — Lab Sample ID: 320-65549-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	8.9		4.8	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	8.1		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.8		1.9	0.56	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	4.6		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	8.6		1.9	0.82	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.9		1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.65	J	1.9	0.55	ng/L	1		537 (modified)	Total/NA
6:2 FTS	7.1		4.8	2.4	ng/L	1		537 (modified)	Total/NA
8:2 FTS	2.6		1.9	0.44	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	430		33	13	mg/L	1		SM 2540D	Total/NA

Client Sample ID: DUP-01-10102020 — Lab Sample ID: 320-65549-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.5	J	4.8	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	4.2		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	3.1		1.9	0.56	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.0		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	5.7		1.9	0.82	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: DUP-01-10102020 (Continued)

Lab Sample ID: 320-65549-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	1.7	J	1.9	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.74	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.79	J	1.9	0.55	ng/L	1		537 (modified)	Total/NA
6:2 FTS	3.0	J	4.8	2.4	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.57	J	1.9	0.44	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	90		20	7.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-L01-10102020

Date Collected: 10/10/20 09:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.0**	**J**	5.5	2.6	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoropentanoic acid (PFPeA)	**2.4**		2.2	0.54	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorohexanoic acid (PFHxA)	**2.1**	**J**	2.2	0.64	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoroheptanoic acid (PFHpA)	**1.0**	**J**	2.2	0.27	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorooctanoic acid (PFOA)	**9.8**		2.2	0.93	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorononanoic acid (PFNA)	<2.2		2.2	0.30	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorodecanoic acid (PFDA)	<2.2		2.2	0.34	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoroundecanoic acid (PFUnA)	<2.2		2.2	1.2	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorododecanoic acid (PFDoA)	<2.2		2.2	0.60	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorotridecanoic acid (PFTriA)	<2.2		2.2	1.4	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorotetradecanoic acid (PFTeA)	<2.2		2.2	0.80	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.2		2.2	0.98	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.2		2.2	1.0	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorobutanesulfonic acid (PFBS)	<2.2		2.2	0.22	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoropentanesulfonic acid (PFPeS)	<2.2		2.2	0.33	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorohexanesulfonic acid (PFHxS)	**0.96**	**J**	2.2	0.62	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.2		2.2	0.21	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorooctanesulfonic acid (PFOS)	<2.2		2.2	0.59	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorononanesulfonic acid (PFNS)	<2.2		2.2	0.41	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorodecanesulfonic acid (PFDS)	<2.2		2.2	0.35	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorododecanesulfonic acid (PFDoS)	<2.2		2.2	1.1	ng/L		10/15/20 13:50	10/16/20 14:04	1
Perfluorooctanesulfonamide (FOSA)	<2.2		2.2	1.1	ng/L		10/15/20 13:50	10/16/20 14:04	1
NEtFOSA	<2.2		2.2	0.95	ng/L		10/15/20 13:50	10/16/20 14:04	1
NMeFOSA	<2.2		2.2	0.47	ng/L		10/15/20 13:50	10/16/20 14:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.5		5.5	1.3	ng/L		10/15/20 13:50	10/16/20 14:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.5		5.5	1.4	ng/L		10/15/20 13:50	10/16/20 14:04	1
NMeFOSE	<4.4		4.4	1.5	ng/L		10/15/20 13:50	10/16/20 14:04	1
NEtFOSE	<2.2		2.2	0.93	ng/L		10/15/20 13:50	10/16/20 14:04	1
4:2 FTS	<2.2		2.2	0.26	ng/L		10/15/20 13:50	10/16/20 14:04	1
6:2 FTS	<5.5		5.5	2.7	ng/L		10/15/20 13:50	10/16/20 14:04	1
8:2 FTS	**0.61**	**J**	2.2	0.50	ng/L		10/15/20 13:50	10/16/20 14:04	1
10:2 FTS	<2.2		2.2	0.73	ng/L		10/15/20 13:50	10/16/20 14:04	1
DONA	<2.2		2.2	0.44	ng/L		10/15/20 13:50	10/16/20 14:04	1
HFPO-DA (GenX)	<4.4		4.4	1.6	ng/L		10/15/20 13:50	10/16/20 14:04	1
F-53B Major	<2.2		2.2	0.26	ng/L		10/15/20 13:50	10/16/20 14:04	1
F-53B Minor	<2.2		2.2	0.35	ng/L		10/15/20 13:50	10/16/20 14:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*
13C5 PFPeA	*94*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*
13C2 PFHxA	*96*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*
13C4 PFHpA	*100*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*
13C4 PFOA	*100*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*
13C5 PFNA	*92*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:04*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L01-10102020

Date Collected: 10/10/20 09:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-1

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	93		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C2 PFUnA	86		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C2 PFDoA	81		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C2 PFTeDA	77		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C2 PFHxDA	63		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C3 PFBS	91		25 - 150	10/15/20 13:50	10/16/20 14:04	1
18O2 PFHxS	91		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C4 PFOS	93		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C8 FOSA	93		25 - 150	10/15/20 13:50	10/16/20 14:04	1
d3-NMeFOSAA	100		25 - 150	10/15/20 13:50	10/16/20 14:04	1
d5-NEtFOSAA	116		25 - 150	10/15/20 13:50	10/16/20 14:04	1
d-N-MeFOSA-M	76		20 - 150	10/15/20 13:50	10/16/20 14:04	1
d-N-EtFOSA-M	66		20 - 150	10/15/20 13:50	10/16/20 14:04	1
d7-N-MeFOSE-M	55		10 - 120	10/15/20 13:50	10/16/20 14:04	1
d9-N-EtFOSE-M	42		10 - 120	10/15/20 13:50	10/16/20 14:04	1
M2-4:2 FTS	125		25 - 150	10/15/20 13:50	10/16/20 14:04	1
M2-6:2 FTS	148		25 - 150	10/15/20 13:50	10/16/20 14:04	1
M2-8:2 FTS	147		25 - 150	10/15/20 13:50	10/16/20 14:04	1
13C3 HFPO-DA	99		25 - 150	10/15/20 13:50	10/16/20 14:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	420		50	19	mg/L			10/15/20 16:36	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L02-10102020

Date Collected: 10/10/20 09:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**23**		4.3	2.0	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoropentanoic acid (PFPeA)	**38**		1.7	0.42	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorohexanoic acid (PFHxA)	**42**		1.7	0.50	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoroheptanoic acid (PFHpA)	**26**		1.7	0.21	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorooctanoic acid (PFOA)	**16**		1.7	0.73	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorononanoic acid (PFNA)	**18**		1.7	0.23	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorodecanoic acid (PFDA)	<1.7		1.7	0.26	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoroundecanoic acid (PFUnA)	**4.4**	**I**	1.7	0.94	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.47	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.62	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.76	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.80	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorobutanesulfonic acid (PFBS)	**5.8**		1.7	0.17	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoropentanesulfonic acid (PFPeS)	**1.3**	**J**	1.7	0.26	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorohexanesulfonic acid (PFHxS)	**1.5**	**J**	1.7	0.49	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.7		1.7	0.16	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorooctanesulfonic acid (PFOS)	**2.1**		1.7	0.46	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.32	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.27	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.83	ng/L		10/15/20 13:50	10/16/20 14:13	1
Perfluorooctanesulfonamide (FOSA)	<1.7		1.7	0.84	ng/L		10/15/20 13:50	10/16/20 14:13	1
NEtFOSA	<1.7		1.7	0.74	ng/L		10/15/20 13:50	10/16/20 14:13	1
NMeFOSA	<1.7		1.7	0.37	ng/L		10/15/20 13:50	10/16/20 14:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.3		4.3	1.0	ng/L		10/15/20 13:50	10/16/20 14:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.3		4.3	1.1	ng/L		10/15/20 13:50	10/16/20 14:13	1
NMeFOSE	<3.4		3.4	1.2	ng/L		10/15/20 13:50	10/16/20 14:13	1
NEtFOSE	<1.7		1.7	0.73	ng/L		10/15/20 13:50	10/16/20 14:13	1
4:2 FTS	<1.7		1.7	0.20	ng/L		10/15/20 13:50	10/16/20 14:13	1
6:2 FTS	<4.3		4.3	2.1	ng/L		10/15/20 13:50	10/16/20 14:13	1
8:2 FTS	**0.74**	**J**	1.7	0.39	ng/L		10/15/20 13:50	10/16/20 14:13	1
10:2 FTS	<1.7		1.7	0.57	ng/L		10/15/20 13:50	10/16/20 14:13	1
DONA	<1.7		1.7	0.34	ng/L		10/15/20 13:50	10/16/20 14:13	1
HFPO-DA (GenX)	<3.4		3.4	1.3	ng/L		10/15/20 13:50	10/16/20 14:13	1
F-53B Major	<1.7		1.7	0.20	ng/L		10/15/20 13:50	10/16/20 14:13	1
F-53B Minor	<1.7		1.7	0.27	ng/L		10/15/20 13:50	10/16/20 14:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*57*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:13*	*1*
13C5 PFPeA	*64*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:13*	*1*
13C2 PFHxA	*87*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:13*	*1*
13C4 PFHpA	*91*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:13*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L02-10102020
Date Collected: 10/10/20 09:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-2
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	83		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C5 PFNA	83		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C2 PFDA	76		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C2 PFUnA	61		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C2 PFDoA	63		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C2 PFTeDA	35		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C2 PFHxDA	11	*5	25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C3 PFBS	76		25 - 150	10/15/20 13:50	10/16/20 14:13	1
18O2 PFHxS	86		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C4 PFOS	82		25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C8 FOSA	49		25 - 150	10/15/20 13:50	10/16/20 14:13	1
d3-NMeFOSAA	53		25 - 150	10/15/20 13:50	10/16/20 14:13	1
d5-NEtFOSAA	60		25 - 150	10/15/20 13:50	10/16/20 14:13	1
d-N-MeFOSA-M	48		20 - 150	10/15/20 13:50	10/16/20 14:13	1
d-N-EtFOSA-M	40		20 - 150	10/15/20 13:50	10/16/20 14:13	1
d7-N-MeFOSE-M	46		10 - 120	10/15/20 13:50	10/16/20 14:13	1
d9-N-EtFOSE-M	32		10 - 120	10/15/20 13:50	10/16/20 14:13	1
M2-4:2 FTS	114		25 - 150	10/15/20 13:50	10/16/20 14:13	1
M2-6:2 FTS	133		25 - 150	10/15/20 13:50	10/16/20 14:13	1
M2-8:2 FTS	152	*5	25 - 150	10/15/20 13:50	10/16/20 14:13	1
13C3 HFPO-DA	92		25 - 150	10/15/20 13:50	10/16/20 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	170		20	7.7	mg/L			10/15/20 16:37	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L03-10102020

Date Collected: 10/10/20 09:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**76**		4.4	2.1	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoropentanoic acid (PFPeA)	**240**		1.7	0.43	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorohexanoic acid (PFHxA)	**300**		1.7	0.51	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoroheptanoic acid (PFHpA)	**120**		1.7	0.22	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorononanoic acid (PFNA)	**59**		1.7	0.24	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorodecanoic acid (PFDA)	**2.5**		1.7	0.27	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.96	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.48	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.64	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.78	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.82	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorobutanesulfonic acid (PFBS)	**6.6**		1.7	0.17	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoropentanesulfonic acid (PFPeS)	**7.0**		1.7	0.26	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorohexanesulfonic acid (PFHxS)	**56**		1.7	0.50	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	**1.5**	**J**	1.7	0.17	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorooctanesulfonic acid (PFOS)	**87**		1.7	0.47	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.32	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.28	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.85	ng/L		10/15/20 13:50	10/16/20 14:23	1
Perfluorooctanesulfonamide (FOSA)	**3.9**		1.7	0.86	ng/L		10/15/20 13:50	10/16/20 14:23	1
NEtFOSA	<1.7		1.7	0.76	ng/L		10/15/20 13:50	10/16/20 14:23	1
NMeFOSA	<1.7		1.7	0.38	ng/L		10/15/20 13:50	10/16/20 14:23	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.4		4.4	1.0	ng/L		10/15/20 13:50	10/16/20 14:23	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**1.8**	**J**	4.4	1.1	ng/L		10/15/20 13:50	10/16/20 14:23	1
NMeFOSE	<3.5		3.5	1.2	ng/L		10/15/20 13:50	10/16/20 14:23	1
NEtFOSE	<1.7		1.7	0.74	ng/L		10/15/20 13:50	10/16/20 14:23	1
4:2 FTS	**28**		1.7	0.21	ng/L		10/15/20 13:50	10/16/20 14:23	1
8:2 FTS	**73**		1.7	0.40	ng/L		10/15/20 13:50	10/16/20 14:23	1
10:2 FTS	<1.7		1.7	0.59	ng/L		10/15/20 13:50	10/16/20 14:23	1
DONA	<1.7		1.7	0.35	ng/L		10/15/20 13:50	10/16/20 14:23	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		10/15/20 13:50	10/16/20 14:23	1
F-53B Major	<1.7		1.7	0.21	ng/L		10/15/20 13:50	10/16/20 14:23	1
F-53B Minor	<1.7		1.7	0.28	ng/L		10/15/20 13:50	10/16/20 14:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*
13C5 PFPeA	*80*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*
13C2 PFHxA	*93*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*
13C4 PFHpA	*102*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*
13C5 PFNA	*104*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*
13C2 PFDA	*100*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:23*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L03-10102020

Date Collected: 10/10/20 09:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-3

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	89		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C2 PFDoA	73		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C2 PFTeDA	66		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C2 PFHxDA	52		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C3 PFBS	99		25 - 150	10/15/20 13:50	10/16/20 14:23	1
18O2 PFHxS	99		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C4 PFOS	103		25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C8 FOSA	95		25 - 150	10/15/20 13:50	10/16/20 14:23	1
d3-NMeFOSAA	82		25 - 150	10/15/20 13:50	10/16/20 14:23	1
d5-NEtFOSAA	82		25 - 150	10/15/20 13:50	10/16/20 14:23	1
d-N-MeFOSA-M	63		20 - 150	10/15/20 13:50	10/16/20 14:23	1
d-N-EtFOSA-M	48		20 - 150	10/15/20 13:50	10/16/20 14:23	1
d7-N-MeFOSE-M	38		10 - 120	10/15/20 13:50	10/16/20 14:23	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 13:50	10/16/20 14:23	1
M2-4:2 FTS	116		25 - 150	10/15/20 13:50	10/16/20 14:23	1
M2-8:2 FTS	156	*5	25 - 150	10/15/20 13:50	10/16/20 14:23	1
13C3 HFPO-DA	102		25 - 150	10/15/20 13:50	10/16/20 14:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2100		17	7.4	ng/L		10/15/20 13:50	10/17/20 19:01	10
6:2 FTS	1100		44	22	ng/L		10/15/20 13:50	10/17/20 19:01	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	84		25 - 150	10/15/20 13:50	10/17/20 19:01	10
M2-6:2 FTS	95		25 - 150	10/15/20 13:50	10/17/20 19:01	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	680		200	77	mg/L			10/15/20 16:38	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L04-10102020

Date Collected: 10/10/20 09:40
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**9.1**		5.2	2.5	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoropentanoic acid (PFPeA)	**8.2**		2.1	0.51	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorohexanoic acid (PFHxA)	**5.9**		2.1	0.61	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoroheptanoic acid (PFHpA)	**3.4**		2.1	0.26	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorooctanoic acid (PFOA)	**12**		2.1	0.89	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorononanoic acid (PFNA)	**3.1**		2.1	0.28	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorodecanoic acid (PFDA)	<2.1		2.1	0.33	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoroundecanoic acid (PFUnA)	<2.1		2.1	1.2	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorododecanoic acid (PFDoA)	<2.1		2.1	0.58	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorotridecanoic acid (PFTriA)	<2.1		2.1	1.4	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorotetradecanoic acid (PFTeA)	<2.1		2.1	0.77	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.1		2.1	0.93	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.1		2.1	0.99	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorobutanesulfonic acid (PFBS)	<2.1		2.1	0.21	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoropentanesulfonic acid (PFPeS)	<2.1		2.1	0.31	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorohexanesulfonic acid (PFHxS)	**2.0**	**J**	2.1	0.60	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.1		2.1	0.20	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorooctanesulfonic acid (PFOS)	<2.1		2.1	0.57	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorononanesulfonic acid (PFNS)	<2.1		2.1	0.39	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorodecanesulfonic acid (PFDS)	<2.1		2.1	0.34	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorododecanesulfonic acid (PFDoS)	<2.1		2.1	1.0	ng/L		10/15/20 13:50	10/16/20 14:33	1
Perfluorooctanesulfonamide (FOSA)	<2.1		2.1	1.0	ng/L		10/15/20 13:50	10/16/20 14:33	1
NEtFOSA	<2.1		2.1	0.91	ng/L		10/15/20 13:50	10/16/20 14:33	1
NMeFOSA	<2.1		2.1	0.45	ng/L		10/15/20 13:50	10/16/20 14:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.2		5.2	1.3	ng/L		10/15/20 13:50	10/16/20 14:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.2		5.2	1.4	ng/L		10/15/20 13:50	10/16/20 14:33	1
NMeFOSE	<4.2		4.2	1.5	ng/L		10/15/20 13:50	10/16/20 14:33	1
NEtFOSE	<2.1		2.1	0.89	ng/L		10/15/20 13:50	10/16/20 14:33	1
4:2 FTS	<2.1		2.1	0.25	ng/L		10/15/20 13:50	10/16/20 14:33	1
6:2 FTS	<5.2		5.2	2.6	ng/L		10/15/20 13:50	10/16/20 14:33	1
8:2 FTS	<2.1		2.1	0.48	ng/L		10/15/20 13:50	10/16/20 14:33	1
10:2 FTS	<2.1		2.1	0.70	ng/L		10/15/20 13:50	10/16/20 14:33	1
DONA	<2.1		2.1	0.42	ng/L		10/15/20 13:50	10/16/20 14:33	1
HFPO-DA (GenX)	<4.2		4.2	1.6	ng/L		10/15/20 13:50	10/16/20 14:33	1
F-53B Major	<2.1		2.1	0.25	ng/L		10/15/20 13:50	10/16/20 14:33	1
F-53B Minor	<2.1		2.1	0.34	ng/L		10/15/20 13:50	10/16/20 14:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*71*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*
13C5 PFPeA	*66*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*
13C2 PFHxA	*77*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*
13C4 PFHpA	*81*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*
13C4 PFOA	*81*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*
13C5 PFNA	*77*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:33*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L04-10102020

Date Collected: 10/10/20 09:40
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-4

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	76		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C2 PFUnA	68		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C2 PFDoA	59		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C2 PFTeDA	40		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C2 PFHxDA	28		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C3 PFBS	76		25 - 150	10/15/20 13:50	10/16/20 14:33	1
18O2 PFHxS	80		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C4 PFOS	78		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C8 FOSA	74		25 - 150	10/15/20 13:50	10/16/20 14:33	1
d3-NMeFOSAA	53		25 - 150	10/15/20 13:50	10/16/20 14:33	1
d5-NEtFOSAA	60		25 - 150	10/15/20 13:50	10/16/20 14:33	1
d-N-MeFOSA-M	55		20 - 150	10/15/20 13:50	10/16/20 14:33	1
d-N-EtFOSA-M	45		20 - 150	10/15/20 13:50	10/16/20 14:33	1
d7-N-MeFOSE-M	29		10 - 120	10/15/20 13:50	10/16/20 14:33	1
d9-N-EtFOSE-M	29		10 - 120	10/15/20 13:50	10/16/20 14:33	1
M2-4:2 FTS	91		25 - 150	10/15/20 13:50	10/16/20 14:33	1
M2-6:2 FTS	111		25 - 150	10/15/20 13:50	10/16/20 14:33	1
M2-8:2 FTS	90		25 - 150	10/15/20 13:50	10/16/20 14:33	1
13C3 HFPO-DA	75		25 - 150	10/15/20 13:50	10/16/20 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1600		200	77	mg/L			10/15/20 16:39	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L05-10102020
Date Collected: 10/10/20 09:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-5
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**11**		4.6	2.2	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoropentanoic acid (PFPeA)	**7.0**		1.8	0.45	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorohexanoic acid (PFHxA)	**5.7**		1.8	0.53	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoroheptanoic acid (PFHpA)	**4.5**		1.8	0.23	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorooctanoic acid (PFOA)	**13**		1.8	0.78	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorononanoic acid (PFNA)	**1.6**	**J**	1.8	0.25	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.29	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorobutanesulfonic acid (PFBS)	**1.1**	**J**	1.8	0.18	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.28	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorohexanesulfonic acid (PFHxS)	**0.89**	**J**	1.8	0.52	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorooctanesulfonic acid (PFOS)	<1.8		1.8	0.50	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8	F2	1.8	0.89	ng/L		10/15/20 13:50	10/16/20 14:42	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		10/15/20 13:50	10/16/20 14:42	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/15/20 13:50	10/16/20 14:42	1
NMeFOSA	<1.8		1.8	0.40	ng/L		10/15/20 13:50	10/16/20 14:42	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 13:50	10/16/20 14:42	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/15/20 13:50	10/16/20 14:42	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 13:50	10/16/20 14:42	1
NEtFOSE	<1.8		1.8	0.78	ng/L		10/15/20 13:50	10/16/20 14:42	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/15/20 13:50	10/16/20 14:42	1
6:2 FTS	<4.6		4.6	2.3	ng/L		10/15/20 13:50	10/16/20 14:42	1
8:2 FTS	<1.8		1.8	0.42	ng/L		10/15/20 13:50	10/16/20 14:42	1
10:2 FTS	<1.8		1.8	0.62	ng/L		10/15/20 13:50	10/16/20 14:42	1
DONA	<1.8		1.8	0.37	ng/L		10/15/20 13:50	10/16/20 14:42	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 13:50	10/16/20 14:42	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/15/20 13:50	10/16/20 14:42	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/15/20 13:50	10/16/20 14:42	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*78*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:42*	*1*
13C5 PFPeA	*75*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:42*	*1*
13C2 PFHxA	*74*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:42*	*1*
13C4 PFHpA	*81*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:42*	*1*
13C4 PFOA	*88*		*25 - 150*	*10/15/20 13:50*	*10/16/20 14:42*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L05-10102020

Date Collected: 10/10/20 09:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-5

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	86		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C2 PFDA	77		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C2 PFUnA	80		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C2 PFDoA	74		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C2 PFTeDA	60		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C2 PFHxDA	41		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C3 PFBS	84		25 - 150	10/15/20 13:50	10/16/20 14:42	1
18O2 PFHxS	87		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C4 PFOS	88		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C8 FOSA	77		25 - 150	10/15/20 13:50	10/16/20 14:42	1
d3-NMeFOSAA	59		25 - 150	10/15/20 13:50	10/16/20 14:42	1
d5-NEtFOSAA	70		25 - 150	10/15/20 13:50	10/16/20 14:42	1
d-N-MeFOSA-M	60		20 - 150	10/15/20 13:50	10/16/20 14:42	1
d-N-EtFOSA-M	47		20 - 150	10/15/20 13:50	10/16/20 14:42	1
d7-N-MeFOSE-M	31		10 - 120	10/15/20 13:50	10/16/20 14:42	1
d9-N-EtFOSE-M	32		10 - 120	10/15/20 13:50	10/16/20 14:42	1
M2-4:2 FTS	99		25 - 150	10/15/20 13:50	10/16/20 14:42	1
M2-6:2 FTS	122		25 - 150	10/15/20 13:50	10/16/20 14:42	1
M2-8:2 FTS	106		25 - 150	10/15/20 13:50	10/16/20 14:42	1
13C3 HFPO-DA	80		25 - 150	10/15/20 13:50	10/16/20 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	200		20	7.7	mg/L			10/15/20 16:39	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L06-10102020

Date Collected: 10/10/20 10:50
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-6

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.4**		5.1	2.4	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoropentanoic acid (PFPeA)	**5.8**		2.0	0.50	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorohexanoic acid (PFHxA)	**6.1**		2.0	0.59	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoroheptanoic acid (PFHpA)	**3.1**		2.0	0.25	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorooctanoic acid (PFOA)	**19**		2.0	0.87	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorononanoic acid (PFNA)	**3.5**		2.0	0.28	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.32	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.56	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.74	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.91	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.96	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.31	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorohexanesulfonic acid (PFHxS)	**1.1**	**J**	2.0	0.58	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorooctanesulfonic acid (PFOS)	**4.2**		2.0	0.55	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.38	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.33	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.99	ng/L		10/15/20 13:50	10/16/20 15:09	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	1.0	ng/L		10/15/20 13:50	10/16/20 15:09	1
NEtFOSA	<2.0		2.0	0.89	ng/L		10/15/20 13:50	10/16/20 15:09	1
NMeFOSA	<2.0		2.0	0.44	ng/L		10/15/20 13:50	10/16/20 15:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.1		5.1	1.2	ng/L		10/15/20 13:50	10/16/20 15:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.1		5.1	1.3	ng/L		10/15/20 13:50	10/16/20 15:09	1
NMeFOSE	<4.1		4.1	1.4	ng/L		10/15/20 13:50	10/16/20 15:09	1
NEtFOSE	<2.0		2.0	0.87	ng/L		10/15/20 13:50	10/16/20 15:09	1
4:2 FTS	**0.57**	**J**	2.0	0.24	ng/L		10/15/20 13:50	10/16/20 15:09	1
6:2 FTS	**21**		5.1	2.5	ng/L		10/15/20 13:50	10/16/20 15:09	1
8:2 FTS	**2.4**		2.0	0.47	ng/L		10/15/20 13:50	10/16/20 15:09	1
10:2 FTS	<2.0		2.0	0.68	ng/L		10/15/20 13:50	10/16/20 15:09	1
DONA	<2.0		2.0	0.41	ng/L		10/15/20 13:50	10/16/20 15:09	1
HFPO-DA (GenX)	<4.1		4.1	1.5	ng/L		10/15/20 13:50	10/16/20 15:09	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 13:50	10/16/20 15:09	1
F-53B Minor	<2.0		2.0	0.33	ng/L		10/15/20 13:50	10/16/20 15:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*40*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:09*	*1*
13C5 PFPeA	*43*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:09*	*1*
13C2 PFHxA	*51*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:09*	*1*
13C4 PFHpA	*54*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:09*	*1*
13C4 PFOA	*50*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:09*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L06-10102020

Date Collected: 10/10/20 10:50
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-6

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	50		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C2 PFDA	46		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C2 PFUnA	44		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C2 PFDoA	37		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C2 PFTeDA	35		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C2 PFHxDA	18	*5	25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C3 PFBS	49		25 - 150	10/15/20 13:50	10/16/20 15:09	1
18O2 PFHxS	50		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C4 PFOS	50		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C8 FOSA	42		25 - 150	10/15/20 13:50	10/16/20 15:09	1
d3-NMeFOSAA	44		25 - 150	10/15/20 13:50	10/16/20 15:09	1
d5-NEtFOSAA	50		25 - 150	10/15/20 13:50	10/16/20 15:09	1
d-N-MeFOSA-M	46		20 - 150	10/15/20 13:50	10/16/20 15:09	1
d-N-EtFOSA-M	39		20 - 150	10/15/20 13:50	10/16/20 15:09	1
d7-N-MeFOSE-M	37		10 - 120	10/15/20 13:50	10/16/20 15:09	1
d9-N-EtFOSE-M	33		10 - 120	10/15/20 13:50	10/16/20 15:09	1
M2-4:2 FTS	67		25 - 150	10/15/20 13:50	10/16/20 15:09	1
M2-6:2 FTS	83		25 - 150	10/15/20 13:50	10/16/20 15:09	1
M2-8:2 FTS	92		25 - 150	10/15/20 13:50	10/16/20 15:09	1
13C3 HFPO-DA	54		25 - 150	10/15/20 13:50	10/16/20 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	270		20	7.7	mg/L			10/15/20 16:42	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L07-10102020

Date Collected: 10/10/20 11:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-7

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.9**		5.1	2.5	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoropentanoic acid (PFPeA)	**5.5**		2.0	0.50	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorohexanoic acid (PFHxA)	**4.9**		2.0	0.59	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoroheptanoic acid (PFHpA)	**2.4**		2.0	0.26	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorooctanoic acid (PFOA)	**12**		2.0	0.87	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorononanoic acid (PFNA)	**5.5**		2.0	0.28	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.32	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.56	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.75	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.91	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.96	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorobutanesulfonic acid (PFBS)	**0.78**	**J**	2.0	0.20	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.31	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorohexanesulfonic acid (PFHxS)	**1.1**	**J**	2.0	0.58	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.55	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.38	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.33	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.99	ng/L		10/15/20 13:50	10/16/20 15:36	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	1.0	ng/L		10/15/20 13:50	10/16/20 15:36	1
NEtFOSA	<2.0		2.0	0.89	ng/L		10/15/20 13:50	10/16/20 15:36	1
NMeFOSA	<2.0		2.0	0.44	ng/L		10/15/20 13:50	10/16/20 15:36	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.1		5.1	1.2	ng/L		10/15/20 13:50	10/16/20 15:36	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.1		5.1	1.3	ng/L		10/15/20 13:50	10/16/20 15:36	1
NMeFOSE	<4.1		4.1	1.4	ng/L		10/15/20 13:50	10/16/20 15:36	1
NEtFOSE	<2.0		2.0	0.87	ng/L		10/15/20 13:50	10/16/20 15:36	1
4:2 FTS	<2.0		2.0	0.25	ng/L		10/15/20 13:50	10/16/20 15:36	1
6:2 FTS	**11**		5.1	2.6	ng/L		10/15/20 13:50	10/16/20 15:36	1
8:2 FTS	**0.92**	**J**	2.0	0.47	ng/L		10/15/20 13:50	10/16/20 15:36	1
10:2 FTS	<2.0		2.0	0.69	ng/L		10/15/20 13:50	10/16/20 15:36	1
DONA	<2.0		2.0	0.41	ng/L		10/15/20 13:50	10/16/20 15:36	1
HFPO-DA (GenX)	<4.1		4.1	1.5	ng/L		10/15/20 13:50	10/16/20 15:36	1
F-53B Major	<2.0		2.0	0.25	ng/L		10/15/20 13:50	10/16/20 15:36	1
F-53B Minor	<2.0		2.0	0.33	ng/L		10/15/20 13:50	10/16/20 15:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*54*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:36*	*1*
13C5 PFPeA	*58*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:36*	*1*
13C2 PFHxA	*61*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:36*	*1*
13C4 PFHpA	*63*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:36*	*1*
13C4 PFOA	*65*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:36*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L07-10102020

Date Collected: 10/10/20 11:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-7

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	63		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C2 PFDA	58		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C2 PFUnA	52		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C2 PFDoA	53		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C2 PFTeDA	51		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C2 PFHxDA	44		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C3 PFBS	57		25 - 150	10/15/20 13:50	10/16/20 15:36	1
18O2 PFHxS	57		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C4 PFOS	55		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C8 FOSA	60		25 - 150	10/15/20 13:50	10/16/20 15:36	1
d3-NMeFOSAA	63		25 - 150	10/15/20 13:50	10/16/20 15:36	1
d5-NEtFOSAA	68		25 - 150	10/15/20 13:50	10/16/20 15:36	1
d-N-MeFOSA-M	51		20 - 150	10/15/20 13:50	10/16/20 15:36	1
d-N-EtFOSA-M	43		20 - 150	10/15/20 13:50	10/16/20 15:36	1
d7-N-MeFOSE-M	38		10 - 120	10/15/20 13:50	10/16/20 15:36	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 13:50	10/16/20 15:36	1
M2-4:2 FTS	79		25 - 150	10/15/20 13:50	10/16/20 15:36	1
M2-6:2 FTS	101		25 - 150	10/15/20 13:50	10/16/20 15:36	1
M2-8:2 FTS	117		25 - 150	10/15/20 13:50	10/16/20 15:36	1
13C3 HFPO-DA	62		25 - 150	10/15/20 13:50	10/16/20 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	180		20	7.7	mg/L			10/15/20 16:43	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L08-10102020
Date Collected: 10/10/20 11:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-8
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**3.7**	**J**	4.9	2.3	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoropentanoic acid (PFPeA)	**3.3**		1.9	0.48	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorohexanoic acid (PFHxA)	**4.2**		1.9	0.57	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoroheptanoic acid (PFHpA)	**1.7**	**J**	1.9	0.24	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorooctanoic acid (PFOA)	**14**		1.9	0.83	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorononanoic acid (PFNA)	**8.9**		1.9	0.26	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoroundecanoic acid (PFUnA)	**1.2**	**J**	1.9	1.1	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.54	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.87	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.92	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorohexanesulfonic acid (PFHxS)	**0.84**	**J**	1.9	0.56	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.19	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorooctanesulfonic acid (PFOS)	**2.3**		1.9	0.53	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.95	ng/L		10/15/20 13:50	10/16/20 15:46	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.95	ng/L		10/15/20 13:50	10/16/20 15:46	1
NEtFOSA	<1.9		1.9	0.85	ng/L		10/15/20 13:50	10/16/20 15:46	1
NMeFOSA	<1.9		1.9	0.42	ng/L		10/15/20 13:50	10/16/20 15:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		10/15/20 13:50	10/16/20 15:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		10/15/20 13:50	10/16/20 15:46	1
NMeFOSE	<3.9		3.9	1.4	ng/L		10/15/20 13:50	10/16/20 15:46	1
NEtFOSE	<1.9		1.9	0.83	ng/L		10/15/20 13:50	10/16/20 15:46	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 15:46	1
6:2 FTS	**8.0**		4.9	2.4	ng/L		10/15/20 13:50	10/16/20 15:46	1
8:2 FTS	**2.3**		1.9	0.45	ng/L		10/15/20 13:50	10/16/20 15:46	1
10:2 FTS	<1.9		1.9	0.65	ng/L		10/15/20 13:50	10/16/20 15:46	1
DONA	<1.9		1.9	0.39	ng/L		10/15/20 13:50	10/16/20 15:46	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		10/15/20 13:50	10/16/20 15:46	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 15:46	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 15:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*59*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:46*	*1*
13C5 PFPeA	*60*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:46*	*1*
13C2 PFHxA	*64*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:46*	*1*
13C4 PFHpA	*65*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:46*	*1*
13C4 PFOA	*65*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:46*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L08-10102020

Date Collected: 10/10/20 11:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-8

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	65		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C2 PFDA	63		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C2 PFUnA	56		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C2 PFDoA	54		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C2 PFTeDA	60		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C2 PFHxDA	54		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C3 PFBS	61		25 - 150	10/15/20 13:50	10/16/20 15:46	1
18O2 PFHxS	63		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C4 PFOS	62		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C8 FOSA	61		25 - 150	10/15/20 13:50	10/16/20 15:46	1
d3-NMeFOSAA	66		25 - 150	10/15/20 13:50	10/16/20 15:46	1
d5-NEtFOSAA	74		25 - 150	10/15/20 13:50	10/16/20 15:46	1
d-N-MeFOSA-M	50		20 - 150	10/15/20 13:50	10/16/20 15:46	1
d-N-EtFOSA-M	41		20 - 150	10/15/20 13:50	10/16/20 15:46	1
d7-N-MeFOSE-M	37		10 - 120	10/15/20 13:50	10/16/20 15:46	1
d9-N-EtFOSE-M	30		10 - 120	10/15/20 13:50	10/16/20 15:46	1
M2-4:2 FTS	77		25 - 150	10/15/20 13:50	10/16/20 15:46	1
M2-6:2 FTS	103		25 - 150	10/15/20 13:50	10/16/20 15:46	1
M2-8:2 FTS	120		25 - 150	10/15/20 13:50	10/16/20 15:46	1
13C3 HFPO-DA	62		25 - 150	10/15/20 13:50	10/16/20 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	400		33	13	mg/L			10/15/20 16:43	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L09-10102020
Date Collected: 10/10/20 11:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-9
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.7**		4.6	2.2	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoropentanoic acid (PFPeA)	**7.0**		1.8	0.45	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorohexanoic acid (PFHxA)	**6.4**		1.8	0.53	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoroheptanoic acid (PFHpA)	**4.0**		1.8	0.23	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorooctanoic acid (PFOA)	**17**		1.8	0.78	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorononanoic acid (PFNA)	**1.6**	**J**	1.8	0.25	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorobutanesulfonic acid (PFBS)	**1.6**	**J**	1.8	0.18	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.28	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorohexanesulfonic acid (PFHxS)	**1.8**		1.8	0.52	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorooctanesulfonic acid (PFOS)	**5.5**		1.8	0.50	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.89	ng/L		10/15/20 13:50	10/16/20 15:55	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		10/15/20 13:50	10/16/20 15:55	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/15/20 13:50	10/16/20 15:55	1
NMeFOSA	<1.8		1.8	0.40	ng/L		10/15/20 13:50	10/16/20 15:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 13:50	10/16/20 15:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/15/20 13:50	10/16/20 15:55	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 13:50	10/16/20 15:55	1
NEtFOSE	<1.8		1.8	0.78	ng/L		10/15/20 13:50	10/16/20 15:55	1
4:2 FTS	<1.8		1.8	0.22	ng/L		10/15/20 13:50	10/16/20 15:55	1
6:2 FTS	**11**		4.6	2.3	ng/L		10/15/20 13:50	10/16/20 15:55	1
8:2 FTS	**1.5**	**J**	1.8	0.42	ng/L		10/15/20 13:50	10/16/20 15:55	1
10:2 FTS	<1.8		1.8	0.62	ng/L		10/15/20 13:50	10/16/20 15:55	1
DONA	<1.8		1.8	0.37	ng/L		10/15/20 13:50	10/16/20 15:55	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 13:50	10/16/20 15:55	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/15/20 13:50	10/16/20 15:55	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/15/20 13:50	10/16/20 15:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*53*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:55*	*1*
13C5 PFPeA	*54*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:55*	*1*
13C2 PFHxA	*60*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:55*	*1*
13C4 PFHpA	*66*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:55*	*1*
13C4 PFOA	*64*		*25 - 150*	*10/15/20 13:50*	*10/16/20 15:55*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L09-10102020

Date Collected: 10/10/20 11:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-9

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	65		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C2 PFDA	59		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C2 PFUnA	58		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C2 PFDoA	53		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C2 PFTeDA	60		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C2 PFHxDA	57		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C3 PFBS	57		25 - 150	10/15/20 13:50	10/16/20 15:55	1
18O2 PFHxS	59		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C4 PFOS	59		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C8 FOSA	58		25 - 150	10/15/20 13:50	10/16/20 15:55	1
d3-NMeFOSAA	63		25 - 150	10/15/20 13:50	10/16/20 15:55	1
d5-NEtFOSAA	67		25 - 150	10/15/20 13:50	10/16/20 15:55	1
d-N-MeFOSA-M	49		20 - 150	10/15/20 13:50	10/16/20 15:55	1
d-N-EtFOSA-M	42		20 - 150	10/15/20 13:50	10/16/20 15:55	1
d7-N-MeFOSE-M	39		10 - 120	10/15/20 13:50	10/16/20 15:55	1
d9-N-EtFOSE-M	35		10 - 120	10/15/20 13:50	10/16/20 15:55	1
M2-4:2 FTS	78		25 - 150	10/15/20 13:50	10/16/20 15:55	1
M2-6:2 FTS	107		25 - 150	10/15/20 13:50	10/16/20 15:55	1
M2-8:2 FTS	117		25 - 150	10/15/20 13:50	10/16/20 15:55	1
13C3 HFPO-DA	64		25 - 150	10/15/20 13:50	10/16/20 15:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	340		50	19	mg/L			10/15/20 16:44	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L10-10102020

Date Collected: 10/10/20 11:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-10

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.9**		4.8	2.3	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoropentanoic acid (PFPeA)	**8.1**		1.9	0.47	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorohexanoic acid (PFHxA)	**6.8**		1.9	0.56	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoroheptanoic acid (PFHpA)	**4.6**		1.9	0.24	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorooctanoic acid (PFOA)	**8.6**		1.9	0.82	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorononanoic acid (PFNA)	**1.9**		1.9	0.26	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.70	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.90	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorobutanesulfonic acid (PFBS)	**1.5**	**J**	1.9	0.19	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorohexanesulfonic acid (PFHxS)	**0.65**	**J**	1.9	0.55	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.52	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.93	ng/L		10/15/20 13:50	10/16/20 16:04	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.94	ng/L		10/15/20 13:50	10/16/20 16:04	1
NEtFOSA	<1.9		1.9	0.84	ng/L		10/15/20 13:50	10/16/20 16:04	1
NMeFOSA	<1.9		1.9	0.41	ng/L		10/15/20 13:50	10/16/20 16:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.2	ng/L		10/15/20 13:50	10/16/20 16:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.3	ng/L		10/15/20 13:50	10/16/20 16:04	1
NMeFOSE	<3.9		3.9	1.3	ng/L		10/15/20 13:50	10/16/20 16:04	1
NEtFOSE	<1.9		1.9	0.82	ng/L		10/15/20 13:50	10/16/20 16:04	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 16:04	1
6:2 FTS	**7.1**		4.8	2.4	ng/L		10/15/20 13:50	10/16/20 16:04	1
8:2 FTS	**2.6**		1.9	0.44	ng/L		10/15/20 13:50	10/16/20 16:04	1
10:2 FTS	<1.9		1.9	0.64	ng/L		10/15/20 13:50	10/16/20 16:04	1
DONA	<1.9		1.9	0.39	ng/L		10/15/20 13:50	10/16/20 16:04	1
HFPO-DA (GenX)	<3.9		3.9	1.4	ng/L		10/15/20 13:50	10/16/20 16:04	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 16:04	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 16:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*49*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:04*	*1*
13C5 PFPeA	*43*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:04*	*1*
13C2 PFHxA	*51*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:04*	*1*
13C4 PFHpA	*53*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:04*	*1*
13C4 PFOA	*53*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:04*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L10-10102020

Date Collected: 10/10/20 11:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-10

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	54		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C2 PFDA	51		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C2 PFUnA	48		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C2 PFDoA	38		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C2 PFTeDA	48		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C2 PFHxDA	44		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C3 PFBS	49		25 - 150	10/15/20 13:50	10/16/20 16:04	1
18O2 PFHxS	51		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C4 PFOS	49		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C8 FOSA	51		25 - 150	10/15/20 13:50	10/16/20 16:04	1
d3-NMeFOSAA	48		25 - 150	10/15/20 13:50	10/16/20 16:04	1
d5-NEtFOSAA	48		25 - 150	10/15/20 13:50	10/16/20 16:04	1
d-N-MeFOSA-M	36		20 - 150	10/15/20 13:50	10/16/20 16:04	1
d-N-EtFOSA-M	33		20 - 150	10/15/20 13:50	10/16/20 16:04	1
d7-N-MeFOSE-M	28		10 - 120	10/15/20 13:50	10/16/20 16:04	1
d9-N-EtFOSE-M	27		10 - 120	10/15/20 13:50	10/16/20 16:04	1
M2-4:2 FTS	63		25 - 150	10/15/20 13:50	10/16/20 16:04	1
M2-6:2 FTS	78		25 - 150	10/15/20 13:50	10/16/20 16:04	1
M2-8:2 FTS	91		25 - 150	10/15/20 13:50	10/16/20 16:04	1
13C3 HFPO-DA	53		25 - 150	10/15/20 13:50	10/16/20 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	430		33	13	mg/L			10/15/20 16:45	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: DUP-01-10102020

Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**4.5**	**J**	4.8	2.3	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoropentanoic acid (PFPeA)	**4.2**		1.9	0.47	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorohexanoic acid (PFHxA)	**3.1**		1.9	0.56	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoroheptanoic acid (PFHpA)	**2.0**		1.9	0.24	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorooctanoic acid (PFOA)	**5.7**		1.9	0.82	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorononanoic acid (PFNA)	**1.7**	**J**	1.9	0.26	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.1	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.3	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.71	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.86	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.91	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorobutanesulfonic acid (PFBS)	**0.74**	**J**	1.9	0.19	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorohexanesulfonic acid (PFHxS)	**0.79**	**J**	1.9	0.55	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.52	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.36	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.94	ng/L		10/15/20 13:50	10/16/20 16:13	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.95	ng/L		10/15/20 13:50	10/16/20 16:13	1
NEtFOSA	<1.9		1.9	0.84	ng/L		10/15/20 13:50	10/16/20 16:13	1
NMeFOSA	<1.9		1.9	0.42	ng/L		10/15/20 13:50	10/16/20 16:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.2	ng/L		10/15/20 13:50	10/16/20 16:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.3	ng/L		10/15/20 13:50	10/16/20 16:13	1
NMeFOSE	<3.9		3.9	1.4	ng/L		10/15/20 13:50	10/16/20 16:13	1
NEtFOSE	<1.9		1.9	0.82	ng/L		10/15/20 13:50	10/16/20 16:13	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 16:13	1
6:2 FTS	**3.0**	**J**	4.8	2.4	ng/L		10/15/20 13:50	10/16/20 16:13	1
8:2 FTS	**0.57**	**J**	1.9	0.44	ng/L		10/15/20 13:50	10/16/20 16:13	1
10:2 FTS	<1.9		1.9	0.65	ng/L		10/15/20 13:50	10/16/20 16:13	1
DONA	<1.9		1.9	0.39	ng/L		10/15/20 13:50	10/16/20 16:13	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		10/15/20 13:50	10/16/20 16:13	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:50	10/16/20 16:13	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/15/20 13:50	10/16/20 16:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:13*	*1*
13C5 PFPeA	*61*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:13*	*1*
13C2 PFHxA	*64*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:13*	*1*
13C4 PFHpA	*67*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:13*	*1*
13C4 PFOA	*67*		*25 - 150*	*10/15/20 13:50*	*10/16/20 16:13*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: DUP-01-10102020

Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-11

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	68		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C2 PFDA	63		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C2 PFUnA	60		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C2 PFDoA	55		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C2 PFTeDA	54		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C2 PFHxDA	53		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C3 PFBS	62		25 - 150	10/15/20 13:50	10/16/20 16:13	1
18O2 PFHxS	65		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C4 PFOS	63		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C8 FOSA	65		25 - 150	10/15/20 13:50	10/16/20 16:13	1
d3-NMeFOSAA	75		25 - 150	10/15/20 13:50	10/16/20 16:13	1
d5-NEtFOSAA	75		25 - 150	10/15/20 13:50	10/16/20 16:13	1
d-N-MeFOSA-M	52		20 - 150	10/15/20 13:50	10/16/20 16:13	1
d-N-EtFOSA-M	44		20 - 150	10/15/20 13:50	10/16/20 16:13	1
d7-N-MeFOSE-M	38		10 - 120	10/15/20 13:50	10/16/20 16:13	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 13:50	10/16/20 16:13	1
M2-4:2 FTS	78		25 - 150	10/15/20 13:50	10/16/20 16:13	1
M2-6:2 FTS	107		25 - 150	10/15/20 13:50	10/16/20 16:13	1
M2-8:2 FTS	117		25 - 150	10/15/20 13:50	10/16/20 16:13	1
13C3 HFPO-DA	64		25 - 150	10/15/20 13:50	10/16/20 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	90		20	7.7	mg/L			10/15/20 16:46	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-65549-1	GW-L01-10102020	95	94	96	100	100	92	93	86
320-65549-2	GW-L02-10102020	57	64	87	91	83	83	76	61
320-65549-3	GW-L03-10102020	80	80	93	102		104	100	89
320-65549-3 - DL	GW-L03-10102020					84			
320-65549-4	GW-L04-10102020	71	66	77	81	81	77	76	68
320-65549-5	GW-L05-10102020	78	75	74	81	88	86	77	80
320-65549-5 MS	GW-L05-10102020	75	74	76	82	85	83	79	73
320-65549-5 MSD	GW-L05-10102020	54	56	61	65	69	68	64	59
320-65549-6	GW-L06-10102020	40	43	51	54	50	50	46	44
320-65549-7	GW-L07-10102020	54	58	61	63	65	63	58	52
320-65549-8	GW-L08-10102020	59	60	64	65	65	65	63	56
320-65549-9	GW-L09-10102020	53	54	60	66	64	65	59	58
320-65549-10	GW-L10-10102020	49	43	51	53	53	54	51	48
320-65549-11	DUP-01-10102020	60	61	64	67	67	68	63	60
LCS 320-422145/2-A	Lab Control Sample	68	69	66	72	70	71	67	65
MB 320-422145/1-A	Method Blank	88	87	85	86	88	87	90	84

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
320-65549-1	GW-L01-10102020	81	77	63	91	91	93	93	100
320-65549-2	GW-L02-10102020	63	35	11 *5	76	86	82	49	53
320-65549-3	GW-L03-10102020	73	66	52	99	99	103	95	82
320-65549-3 - DL	GW-L03-10102020								
320-65549-4	GW-L04-10102020	59	40	28	76	80	78	74	53
320-65549-5	GW-L05-10102020	74	60	41	84	87	88	77	59
320-65549-5 MS	GW-L05-10102020	77	57	42	78	80	77	81	76
320-65549-5 MSD	GW-L05-10102020	63	47	34	62	65	65	67	57
320-65549-6	GW-L06-10102020	37	35	18 *5	49	50	50	42	44
320-65549-7	GW-L07-10102020	53	51	44	57	57	55	60	63
320-65549-8	GW-L08-10102020	54	60	54	61	63	62	61	66
320-65549-9	GW-L09-10102020	53	60	57	57	59	59	58	63
320-65549-10	GW-L10-10102020	38	48	44	49	51	49	51	48
320-65549-11	DUP-01-10102020	55	54	53	62	65	63	65	75
LCS 320-422145/2-A	Lab Control Sample	67	67	62	70	72	68	64	70
MB 320-422145/1-A	Method Blank	83	82	79	92	90	93	81	84

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65549-1	GW-L01-10102020	116	76	66	55	42	125	148	147
320-65549-2	GW-L02-10102020	60	48	40	46	32	114	133	152 *5
320-65549-3	GW-L03-10102020	82	63	48	38	36	116		156 *5
320-65549-3 - DL	GW-L03-10102020							95	
320-65549-4	GW-L04-10102020	60	55	45	29	29	91	111	90
320-65549-5	GW-L05-10102020	70	60	47	31	32	99	122	106
320-65549-5 MS	GW-L05-10102020	84	61	49	40	33	92	120	123
320-65549-5 MSD	GW-L05-10102020	66	50	43	32	30	68	96	95
320-65549-6	GW-L06-10102020	50	46	39	37	33	67	83	92
320-65549-7	GW-L07-10102020	68	51	43	38	36	79	101	117
320-65549-8	GW-L08-10102020	74	50	41	37	30	77	103	120

Isotope Dilution Summary

Client: ARCADIS U.S., Inc. Job ID: 320-65549-1
Project/Site: Marinette 30015296.00009

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65549-9	GW-L09-10102020	67	49	42	39	35	78	107	117
320-65549-10	GW-L10-10102020	48	36	33	28	27	63	78	91
320-65549-11	DUP-01-10102020	75	52	44	38	36	78	107	117
LCS 320-422145/2-A	Lab Control Sample	69	48	40	23	16	73	73	68
MB 320-422145/1-A	Method Blank	92	65	54	30	21	93	103	97

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65549-1	GW-L01-10102020	99
320-65549-2	GW-L02-10102020	92
320-65549-3	GW-L03-10102020	102
320-65549-3 - DL	GW-L03-10102020	
320-65549-4	GW-L04-10102020	75
320-65549-5	GW-L05-10102020	80
320-65549-5 MS	GW-L05-10102020	80
320-65549-5 MSD	GW-L05-10102020	63
320-65549-6	GW-L06-10102020	54
320-65549-7	GW-L07-10102020	62
320-65549-8	GW-L08-10102020	62
320-65549-9	GW-L09-10102020	64
320-65549-10	GW-L10-10102020	53
320-65549-11	DUP-01-10102020	64
LCS 320-422145/2-A	Lab Control Sample	70
MB 320-422145/1-A	Method Blank	86

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
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

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-422145/1-A
Matrix: Water
Analysis Batch: 422445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422145

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/15/20 13:50	10/16/20 13:46	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/15/20 13:50	10/16/20 13:46	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/15/20 13:50	10/16/20 13:46	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/15/20 13:50	10/16/20 13:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		10/15/20 13:50	10/16/20 13:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		10/15/20 13:50	10/16/20 13:46	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/15/20 13:50	10/16/20 13:46	1
NEtFOSE	<2.0		2.0	0.85	ng/L		10/15/20 13:50	10/16/20 13:46	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/15/20 13:50	10/16/20 13:46	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/15/20 13:50	10/16/20 13:46	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/15/20 13:50	10/16/20 13:46	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/15/20 13:50	10/16/20 13:46	1
DONA	<2.0		2.0	0.40	ng/L		10/15/20 13:50	10/16/20 13:46	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/15/20 13:50	10/16/20 13:46	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 13:50	10/16/20 13:46	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/15/20 13:50	10/16/20 13:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*25 - 150*	*10/15/20 13:50*	*10/16/20 13:46*	*1*
13C5 PFPeA	*87*		*25 - 150*	*10/15/20 13:50*	*10/16/20 13:46*	*1*
13C2 PFHxA	*85*		*25 - 150*	*10/15/20 13:50*	*10/16/20 13:46*	*1*
13C4 PFHpA	*86*		*25 - 150*	*10/15/20 13:50*	*10/16/20 13:46*	*1*
13C4 PFOA	*88*		*25 - 150*	*10/15/20 13:50*	*10/16/20 13:46*	*1*

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

Lab Sample ID: MB 320-422145/1-A
Matrix: Water
Analysis Batch: 422445

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422145

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	87		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C2 PFDA	90		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C2 PFUnA	84		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C2 PFDoA	83		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C2 PFTeDA	82		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C2 PFHxDA	79		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C3 PFBS	92		25 - 150	10/15/20 13:50	10/16/20 13:46	1
18O2 PFHxS	90		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C4 PFOS	93		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C8 FOSA	81		25 - 150	10/15/20 13:50	10/16/20 13:46	1
d3-NMeFOSAA	84		25 - 150	10/15/20 13:50	10/16/20 13:46	1
d5-NEtFOSAA	92		25 - 150	10/15/20 13:50	10/16/20 13:46	1
d-N-MeFOSA-M	65		20 - 150	10/15/20 13:50	10/16/20 13:46	1
d-N-EtFOSA-M	54		20 - 150	10/15/20 13:50	10/16/20 13:46	1
d7-N-MeFOSE-M	30		10 - 120	10/15/20 13:50	10/16/20 13:46	1
d9-N-EtFOSE-M	21		10 - 120	10/15/20 13:50	10/16/20 13:46	1
M2-4:2 FTS	93		25 - 150	10/15/20 13:50	10/16/20 13:46	1
M2-6:2 FTS	103		25 - 150	10/15/20 13:50	10/16/20 13:46	1
M2-8:2 FTS	97		25 - 150	10/15/20 13:50	10/16/20 13:46	1
13C3 HFPO-DA	86		25 - 150	10/15/20 13:50	10/16/20 13:46	1

Lab Sample ID: LCS 320-422145/2-A
Matrix: Water
Analysis Batch: 422445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.8		ng/L		104	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	38.7		ng/L		97	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	41.8		ng/L		104	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	40.4		ng/L		101	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	39.3		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.7		ng/L		102	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	43.8		ng/L		110	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	40.6		ng/L		101	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	38.5		ng/L		96	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.0		ng/L		90	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	44.7		ng/L		112	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	46.8		ng/L		117	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	44.9		ng/L		112	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	37.1		ng/L		105	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	39.5		ng/L		105	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.0		ng/L		96	59 - 119

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

Lab Sample ID: LCS 320-422145/2-A
Matrix: Water
Analysis Batch: 422445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.0		ng/L		110	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	40.2		ng/L		108	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	40.5		ng/L		106	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	40.5		ng/L		105	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	38.3		ng/L		99	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	44.3		ng/L		111	73 - 133
NMeFOSA	40.0	39.4		ng/L		98	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.8		ng/L		107	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.9		ng/L		100	76 - 136
NMeFOSE	40.0	39.1		ng/L		98	70 - 130
NEtFOSE	40.0	43.5		ng/L		109	71 - 131
4:2 FTS	37.4	35.9		ng/L		96	79 - 139
6:2 FTS	37.9	36.1		ng/L		95	59 - 175
8:2 FTS	38.3	41.0		ng/L		107	75 - 135
10:2 FTS	38.6	44.1		ng/L		114	64 - 142
DONA	37.7	41.5		ng/L		110	79 - 139
HFPO-DA (GenX)	40.0	41.4		ng/L		103	51 - 173
F-53B Major	37.3	38.7		ng/L		104	75 - 135
F-53B Minor	37.7	38.8		ng/L		103	54 - 114

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*68*		*25 - 150*
13C5 PFPeA	*69*		*25 - 150*
13C2 PFHxA	*66*		*25 - 150*
13C4 PFHpA	*72*		*25 - 150*
13C4 PFOA	*70*		*25 - 150*
13C5 PFNA	*71*		*25 - 150*
13C2 PFDA	*67*		*25 - 150*
13C2 PFUnA	*65*		*25 - 150*
13C2 PFDoA	*67*		*25 - 150*
13C2 PFTeDA	*67*		*25 - 150*
13C2 PFHxDA	*62*		*25 - 150*
13C3 PFBS	*70*		*25 - 150*
18O2 PFHxS	*72*		*25 - 150*
13C4 PFOS	*68*		*25 - 150*
13C8 FOSA	*64*		*25 - 150*
d3-NMeFOSAA	*70*		*25 - 150*
d5-NEtFOSAA	*69*		*25 - 150*
d-N-MeFOSA-M	*48*		*20 - 150*
d-N-EtFOSA-M	*40*		*20 - 150*
d7-N-MeFOSE-M	*23*		*10 - 120*
d9-N-EtFOSE-M	*16*		*10 - 120*
M2-4:2 FTS	*73*		*25 - 150*

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

Lab Sample ID: LCS 320-422145/2-A
Matrix: Water
Analysis Batch: 422445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422145

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	73		25 - 150
M2-8:2 FTS	68		25 - 150
13C3 HFPO-DA	70		25 - 150

Lab Sample ID: 320-65549-5 MS
Matrix: Water
Analysis Batch: 422445

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	11		43.9	54.8		ng/L		100	76 - 136
Perfluoropentanoic acid (PFPeA)	7.0		43.9	48.8		ng/L		95	71 - 131
Perfluorohexanoic acid (PFHxA)	5.7		43.9	51.4		ng/L		104	73 - 133
Perfluoroheptanoic acid (PFHpA)	4.5		43.9	49.6		ng/L		103	72 - 132
Perfluorooctanoic acid (PFOA)	13		43.9	53.2		ng/L		92	70 - 130
Perfluorononanoic acid (PFNA)	1.6	J	43.9	44.6		ng/L		98	75 - 135
Perfluorodecanoic acid (PFDA)	<1.8		43.9	44.1		ng/L		100	76 - 136
Perfluoroundecanoic acid (PFUnA)	<1.8		43.9	51.2		ng/L		116	68 - 128
Perfluorododecanoic acid (PFDoA)	<1.8		43.9	41.2		ng/L		94	71 - 131
Perfluorotridecanoic acid (PFTriA)	<1.8		43.9	38.7		ng/L		88	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<1.8		43.9	44.1		ng/L		100	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		43.9	42.3		ng/L		96	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		43.9	44.7		ng/L		102	58 - 145
Perfluorobutanesulfonic acid (PFBS)	1.1	J	38.8	42.5		ng/L		106	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	<1.8		41.2	46.1		ng/L		112	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	0.89	J	40.0	42.4		ng/L		104	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		41.8	46.5		ng/L		111	76 - 136
Perfluorooctanesulfonic acid (PFOS)	<1.8		40.8	45.1		ng/L		111	70 - 130
Perfluorononanesulfonic acid (PFNS)	<1.8		42.2	43.9		ng/L		104	75 - 135
Perfluorodecanesulfonic acid (PFDS)	<1.8		42.3	42.2		ng/L		100	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	<1.8	F2	42.5	39.0		ng/L		92	67 - 127
Perfluorooctanesulfonamide (FOSA)	<1.8		43.9	48.0		ng/L		109	73 - 133
NMeFOSA	<1.8		43.9	39.3		ng/L		89	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		43.9	43.0		ng/L		98	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		43.9	44.3		ng/L		101	76 - 136
NMeFOSE	<3.7		43.9	44.0		ng/L		100	70 - 130
NEtFOSE	<1.8		43.9	45.4		ng/L		103	71 - 131

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

Lab Sample ID: 320-65549-5 MS
Matrix: Water
Analysis Batch: 422445

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	<1.8		41.0	41.0		ng/L		100	79 - 139
6:2 FTS	<4.6		41.6	38.3		ng/L		92	59 - 175
8:2 FTS	<1.8		42.1	45.0		ng/L		107	75 - 135
10:2 FTS	<1.8		42.3	41.8		ng/L		99	64 - 142
DONA	<1.8		41.4	44.0		ng/L		106	79 - 139
HFPO-DA (GenX)	<3.7		43.9	46.0		ng/L		105	51 - 173
F-53B Major	<1.8		40.9	43.7		ng/L		107	75 - 135
F-53B Minor	<1.8		41.4	39.8		ng/L		96	54 - 114

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*75*		*25 - 150*
13C5 PFPeA	*74*		*25 - 150*
13C2 PFHxA	*76*		*25 - 150*
13C4 PFHpA	*82*		*25 - 150*
13C4 PFOA	*85*		*25 - 150*
13C5 PFNA	*83*		*25 - 150*
13C2 PFDA	*79*		*25 - 150*
13C2 PFUnA	*73*		*25 - 150*
13C2 PFDoA	*77*		*25 - 150*
13C2 PFTeDA	*57*		*25 - 150*
13C2 PFHxDA	*42*		*25 - 150*
13C3 PFBS	*78*		*25 - 150*
18O2 PFHxS	*80*		*25 - 150*
13C4 PFOS	*77*		*25 - 150*
13C8 FOSA	*81*		*25 - 150*
d3-NMeFOSAA	*76*		*25 - 150*
d5-NEtFOSAA	*84*		*25 - 150*
d-N-MeFOSA-M	*61*		*20 - 150*
d-N-EtFOSA-M	*49*		*20 - 150*
d7-N-MeFOSE-M	*40*		*10 - 120*
d9-N-EtFOSE-M	*33*		*10 - 120*
M2-4:2 FTS	*92*		*25 - 150*
M2-6:2 FTS	*120*		*25 - 150*
M2-8:2 FTS	*123*		*25 - 150*
13C3 HFPO-DA	*80*		*25 - 150*

Lab Sample ID: 320-65549-5 MSD
Matrix: Water
Analysis Batch: 422445

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	11		36.4	47.1		ng/L		100	76 - 136	15	30
Perfluoropentanoic acid (PFPeA)	7.0		36.4	40.3		ng/L		92	71 - 131	19	30
Perfluorohexanoic acid (PFHxA)	5.7		36.4	42.4		ng/L		101	73 - 133	19	30
Perfluoroheptanoic acid (PFHpA)	4.5		36.4	40.6		ng/L		99	72 - 132	20	30
Perfluorooctanoic acid (PFOA)	13		36.4	45.8		ng/L		91	70 - 130	15	30
Perfluorononanoic acid (PFNA)	1.6	J	36.4	38.7		ng/L		102	75 - 135	14	30
Perfluorodecanoic acid (PFDA)	<1.8		36.4	37.4		ng/L		103	76 - 136	16	30

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

Lab Sample ID: 320-65549-5 MSD
Matrix: Water
Analysis Batch: 422445

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA
Prep Batch: 422145

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	<1.8		36.4	43.8		ng/L		121	68 - 128	15	30
Perfluorododecanoic acid (PFDoA)	<1.8		36.4	36.7		ng/L		101	71 - 131	11	30
Perfluorotridecanoic acid (PFTriA)	<1.8		36.4	32.3		ng/L		89	71 - 131	18	30
Perfluorotetradecanoic acid (PFTeA)	<1.8		36.4	38.3		ng/L		105	70 - 130	14	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		36.4	37.3		ng/L		103	76 - 136	13	30
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		36.4	35.5		ng/L		98	58 - 145	23	30
Perfluorobutanesulfonic acid (PFBS)	1.1	J	32.1	35.3		ng/L		106	67 - 127	18	30
Perfluoropentanesulfonic acid (PFPeS)	<1.8		34.1	38.4		ng/L		113	66 - 126	18	30
Perfluorohexanesulfonic acid (PFHxS)	0.89	J	33.1	34.1		ng/L		100	59 - 119	22	30
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		34.6	37.8		ng/L		109	76 - 136	21	30
Perfluorooctanesulfonic acid (PFOS)	<1.8		33.7	36.5		ng/L		108	70 - 130	21	30
Perfluorononanesulfonic acid (PFNS)	<1.8		34.9	37.7		ng/L		108	75 - 135	15	30
Perfluorodecanesulfonic acid (PFDS)	<1.8		35.1	34.0		ng/L		97	71 - 131	21	30
Perfluorododecanesulfonic acid (PFDoS)	<1.8	F2	35.2	28.5	F2	ng/L		81	67 - 127	31	30
Perfluorooctanesulfonamide (FOSA)	<1.8		36.4	39.5		ng/L		109	73 - 133	20	30
NMeFOSA	<1.8		36.4	34.0		ng/L		93	67 - 154	14	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		36.4	35.8		ng/L		99	76 - 136	18	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		36.4	36.4		ng/L		100	76 - 136	20	30
NMeFOSE	<3.7		36.4	40.8		ng/L		112	70 - 130	8	30
NEtFOSE	<1.8		36.4	38.0		ng/L		105	71 - 131	18	30
4:2 FTS	<1.8		34.0	35.3		ng/L		104	79 - 139	15	30
6:2 FTS	<4.6		34.5	30.5		ng/L		89	59 - 175	23	30
8:2 FTS	<1.8		34.8	38.1		ng/L		109	75 - 135	17	30
10:2 FTS	<1.8		35.1	36.0		ng/L		103	64 - 142	15	30
DONA	<1.8		34.3	35.7		ng/L		104	79 - 139	21	30
HFPO-DA (GenX)	<3.7		36.4	39.8		ng/L		109	51 - 173	14	30
F-53B Major	<1.8		33.9	34.8		ng/L		103	75 - 135	23	30
F-53B Minor	<1.8		34.3	33.8		ng/L		99	54 - 114	16	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*54*		*25 - 150*
13C5 PFPeA	*56*		*25 - 150*
13C2 PFHxA	*61*		*25 - 150*
13C4 PFHpA	*65*		*25 - 150*
13C4 PFOA	*69*		*25 - 150*
13C5 PFNA	*68*		*25 - 150*

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

Lab Sample ID: 320-65549-5 MSD
Matrix: Water
Analysis Batch: 422445

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA
Prep Batch: 422145

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFDA	*64*		*25 - 150*
13C2 PFUnA	*59*		*25 - 150*
13C2 PFDoA	*63*		*25 - 150*
13C2 PFTeDA	*47*		*25 - 150*
13C2 PFHxDA	*34*		*25 - 150*
13C3 PFBS	*62*		*25 - 150*
18O2 PFHxS	*65*		*25 - 150*
13C4 PFOS	*65*		*25 - 150*
13C8 FOSA	*67*		*25 - 150*
d3-NMeFOSAA	*57*		*25 - 150*
d5-NEtFOSAA	*66*		*25 - 150*
d-N-MeFOSA-M	*50*		*20 - 150*
d-N-EtFOSA-M	*43*		*20 - 150*
d7-N-MeFOSE-M	*32*		*10 - 120*
d9-N-EtFOSE-M	*30*		*10 - 120*
M2-4:2 FTS	*68*		*25 - 150*
M2-6:2 FTS	*96*		*25 - 150*
M2-8:2 FTS	*95*		*25 - 150*
13C3 HFPO-DA	*63*		*25 - 150*

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-566813/1
Matrix: Water
Analysis Batch: 566813

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			10/15/20 16:35	1

Lab Sample ID: LCS 500-566813/2
Matrix: Water
Analysis Batch: 566813

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			200	183		mg/L		91	80 - 120		

Lab Sample ID: 320-65549-5 MS
Matrix: Water
Analysis Batch: 566813

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids	200		200	414		mg/L		108	75 - 125		

Lab Sample ID: 320-65549-5 MSD
Matrix: Water
Analysis Batch: 566813

Client Sample ID: GW-L05-10102020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	200		200	402		mg/L		102	75 - 125	3	20

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 320-65549-11 DU
Matrix: Water
Analysis Batch: 566813

Client Sample ID: DUP-01-10102020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	90			84.0	F5	mg/L				7	5

LCMS

Prep Batch: 422145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65549-1	GW-L01-10102020	Total/NA	Water	3535	
320-65549-2	GW-L02-10102020	Total/NA	Water	3535	
320-65549-3	GW-L03-10102020	Total/NA	Water	3535	
320-65549-3 - DL	GW-L03-10102020	Total/NA	Water	3535	
320-65549-4	GW-L04-10102020	Total/NA	Water	3535	
320-65549-5	GW-L05-10102020	Total/NA	Water	3535	
320-65549-6	GW-L06-10102020	Total/NA	Water	3535	
320-65549-7	GW-L07-10102020	Total/NA	Water	3535	
320-65549-8	GW-L08-10102020	Total/NA	Water	3535	
320-65549-9	GW-L09-10102020	Total/NA	Water	3535	
320-65549-10	GW-L10-10102020	Total/NA	Water	3535	
320-65549-11	DUP-01-10102020	Total/NA	Water	3535	
MB 320-422145/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-422145/2-A	Lab Control Sample	Total/NA	Water	3535	
320-65549-5 MS	GW-L05-10102020	Total/NA	Water	3535	
320-65549-5 MSD	GW-L05-10102020	Total/NA	Water	3535	

Analysis Batch: 422445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65549-1	GW-L01-10102020	Total/NA	Water	537 (modified)	422145
320-65549-2	GW-L02-10102020	Total/NA	Water	537 (modified)	422145
320-65549-3	GW-L03-10102020	Total/NA	Water	537 (modified)	422145
320-65549-4	GW-L04-10102020	Total/NA	Water	537 (modified)	422145
320-65549-5	GW-L05-10102020	Total/NA	Water	537 (modified)	422145
320-65549-6	GW-L06-10102020	Total/NA	Water	537 (modified)	422145
320-65549-7	GW-L07-10102020	Total/NA	Water	537 (modified)	422145
320-65549-8	GW-L08-10102020	Total/NA	Water	537 (modified)	422145
320-65549-9	GW-L09-10102020	Total/NA	Water	537 (modified)	422145
320-65549-10	GW-L10-10102020	Total/NA	Water	537 (modified)	422145
320-65549-11	DUP-01-10102020	Total/NA	Water	537 (modified)	422145
MB 320-422145/1-A	Method Blank	Total/NA	Water	537 (modified)	422145
LCS 320-422145/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	422145
320-65549-5 MS	GW-L05-10102020	Total/NA	Water	537 (modified)	422145
320-65549-5 MSD	GW-L05-10102020	Total/NA	Water	537 (modified)	422145

Analysis Batch: 422964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65549-3 - DL	GW-L03-10102020	Total/NA	Water	537 (modified)	422145

General Chemistry

Analysis Batch: 566813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65549-1	GW-L01-10102020	Total/NA	Water	SM 2540D	
320-65549-2	GW-L02-10102020	Total/NA	Water	SM 2540D	
320-65549-3	GW-L03-10102020	Total/NA	Water	SM 2540D	
320-65549-4	GW-L04-10102020	Total/NA	Water	SM 2540D	
320-65549-5	GW-L05-10102020	Total/NA	Water	SM 2540D	
320-65549-6	GW-L06-10102020	Total/NA	Water	SM 2540D	
320-65549-7	GW-L07-10102020	Total/NA	Water	SM 2540D	
320-65549-8	GW-L08-10102020	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 566813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65549-9	GW-L09-10102020	Total/NA	Water	SM 2540D	
320-65549-10	GW-L10-10102020	Total/NA	Water	SM 2540D	
320-65549-11	DUP-01-10102020	Total/NA	Water	SM 2540D	
MB 500-566813/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-566813/2	Lab Control Sample	Total/NA	Water	SM 2540D	
320-65549-5 MS	GW-L05-10102020	Total/NA	Water	SM 2540D	
320-65549-5 MSD	GW-L05-10102020	Total/NA	Water	SM 2540D	
320-65549-11 DU	DUP-01-10102020	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L01-10102020
Date Collected: 10/10/20 09:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			228.1 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 14:04	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	20 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:36		
								(End) 10/15/20 16:37		

Client Sample ID: GW-L02-10102020
Date Collected: 10/10/20 09:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			292.7 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 14:13	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:37		
								(End) 10/15/20 16:38		

Client Sample ID: GW-L03-10102020
Date Collected: 10/10/20 09:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			286.1 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 14:23	GMK	TAL SAC
Total/NA	Prep	3535	DL		286.1 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10			422964	10/17/20 19:01	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	5 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:38		
								(End) 10/15/20 16:39		

Client Sample ID: GW-L04-10102020
Date Collected: 10/10/20 09:40
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65549-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			238.4 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 14:33	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	5 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:39		
								(End) 10/15/20 16:39		

Client Sample ID: GW-L05-10102020

Lab Sample ID: 320-65549-5

Date Collected: 10/10/20 09:55

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			271.8 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 14:42	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:39		
								(End) 10/15/20 16:40		

Client Sample ID: GW-L06-10102020

Lab Sample ID: 320-65549-6

Date Collected: 10/10/20 10:50

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			245.2 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 15:09	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:42		
								(End) 10/15/20 16:43		

Client Sample ID: GW-L07-10102020

Lab Sample ID: 320-65549-7

Date Collected: 10/10/20 11:00

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			244.5 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 15:36	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:43		
								(End) 10/15/20 16:43		

Client Sample ID: GW-L08-10102020

Lab Sample ID: 320-65549-8

Date Collected: 10/10/20 11:10

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			256.6 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 15:46	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	30 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:43		
								(End) 10/15/20 16:44		

Client Sample ID: GW-L09-10102020

Lab Sample ID: 320-65549-9

Date Collected: 10/10/20 11:15

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 15:55	GMK	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Client Sample ID: GW-L09-10102020

Lab Sample ID: 320-65549-9

Date Collected: 10/10/20 11:15

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	20 mL	200 mL	566813		SMO	TAL CHI

Client Sample ID: GW-L10-10102020

Lab Sample ID: 320-65549-10

Date Collected: 10/10/20 11:20

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			259.7 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 16:04	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	30 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:45		
								(End) 10/15/20 16:46		

Client Sample ID: DUP-01-10102020

Lab Sample ID: 320-65549-11

Date Collected: 10/10/20 00:00

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			258.5 mL	10.00 mL	422145	10/15/20 13:50	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422445	10/16/20 16:13	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:46		
								(End) 10/15/20 16:47		

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 320-65549-1
Project/Site: Marinette 30015296.00009

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	08-03-23
Nevada	State	CA000442021-1	07-31-21
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-20
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65549-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65549-1	GW-L01-10102020	Water	10/10/20 09:10	10/13/20 10:00	
320-65549-2	GW-L02-10102020	Water	10/10/20 09:15	10/13/20 10:00	
320-65549-3	GW-L03-10102020	Water	10/10/20 09:30	10/13/20 10:00	
320-65549-4	GW-L04-10102020	Water	10/10/20 09:40	10/13/20 10:00	
320-65549-5	GW-L05-10102020	Water	10/10/20 09:55	10/13/20 10:00	
320-65549-6	GW-L06-10102020	Water	10/10/20 10:50	10/13/20 10:00	
320-65549-7	GW-L07-10102020	Water	10/10/20 11:00	10/13/20 10:00	
320-65549-8	GW-L08-10102020	Water	10/10/20 11:10	10/13/20 10:00	
320-65549-9	GW-L09-10102020	Water	10/10/20 11:15	10/13/20 10:00	
320-65549-10	GW-L10-10102020	Water	10/10/20 11:20	10/13/20 10:00	
320-65549-11	DUP-01-10102020	Water	10/10/20 00:00	10/13/20 10:00	

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Amy Siefker	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-85814-38797.5
Client Contact: Elizabeth Hover	Phone:	E-Mail: sandra.fredrick@eurofinset.com		Page: Page 1 of 1
Company: ARCADIS U.S., Inc.				Job #:
Address: 126 North Jefferson Street Suite 400	Due Date Requested:			
City: Milwaukee	TAT Requested (days): Standard			
State, Zip: WI, 53202				
Phone:	PO #: 30015296.00009			
Email: Elizabeth.Hover@arcadis.com	WO #:			
Project Name: Marinette 30015296.00009	Project #: 50017363			
Site: Marinette, WI	SSOW#:			

Analysis Requested

320-65549 Chain of Custody

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D - TSS	PFC_IDA - PFAS, Extended List (36 Analytes)	Total Number of container	Special Instructions/Note:
			Preservation Code:				N	N		
GW-L01-10102020	10/10/20	910	G	Water	N	N	X	X		
GW-L02-10102020		915		Water						
GW-L03-10102020		930		Water						
GW-L04-10102020		940		Water		↓				
GW-L05-10102020		955		Water		Y				MS/MSD
GW-L06-10102020		1050		Water		N				
GW-L07-10102020		1100		Water						
GW-L08-10102020		1110		Water						
GW-L09-10102020		1115		Water						
GW-L10-10102020		1120		Water						
✓ DUP-01-10102020		—		Water						Duplicate

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Amy Siefker	10/12/20 / 1200	Arcadis		10/13/20 1000	eta sac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by	Date/Time	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No (Yes)

Custody Seal No.: 991374, 991376, 991377, 991375

Cooler Temperature(s) °C and Other Remarks: 2.0, 1.1, 3.1, 1.4

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No. 320-197412.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 320-65549-1
Address: 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484	PO #			
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	WO #:			
Email	Project #: 50017363			
Project Name: Marinette 30015296.00009	SSOW#:			
Site:				

320-65549 COC

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-L01-10102020 (320-65549-1)	10/10/20	09:10 Central		Water			X	1	
GW-L02-10102020 (320-65549-2)	10/10/20	09:15 Central		Water			X	1	
GW-L03-10102020 (320-65549-3)	10/10/20	09:30 Central		Water			X	1	
GW-L04-10102020 (320-65549-4)	10/10/20	09:40 Central		Water			X	1	
GW-L05-10102020 (320-65549-5)	10/10/20	09:55 Central		Water			X	1	
GW-L05-10102020 (320-65549-5MS)	10/10/20	09:55 Central	MS	Water			X	1	
GW-L05-10102020 (320-65549-5MSD)	10/10/20	09:55 Central	MSD	Water			X	1	
GW-L06-10102020 (320-65549-6)	10/10/20	10:50 Central		Water			X	1	
GW-L07-10102020 (320-65549-7)	10/10/20	11:00 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Juan Lom	10/14/20 1630	ETASAL	Allison Scott	10/15/20 0930	TA-CHI
Relinquished by:	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0 → 2.0

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s).	COC No. 320-197412.2
Client Contact: Shipping/Receiving	Phone	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - Wisconsin		Job #: 320-65549-1
Address: 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484				
Phone 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email:	WO #:			
Project Name: Marinette 30015296.00009	Project #: 50017363			
Site	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-L08-10102020 (320-65549-8)	10/10/20	11:10 Central		Water			X	1	
GW-L09-10102020 (320-65549-9)	10/10/20	11:15 Central		Water			X	1	
GW-L10-10102020 (320-65549-10)	10/10/20	11:20 Central		Water			X	1	
DUP-01-10102020 (320-65549-11)	10/10/20	Central		Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
Relinquished by: [signature]	10/14/20 - 1630	ETASAC	[signature]	10/15/20 0930	TA-CHI
Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc. Job Number: 320-65549-1

Login Number: 65549 **List Source: Eurofins TestAmerica, Sacramento**
List Number: 1
Creator: Thompson, Sarah W

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	991374, 991375, 991376, 991377
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	
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	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65549-1

Login Number: 65549
List Number: 2
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago
List Creation: 10/15/20 01:13 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	
Sample custody seals, if present, are intact.	True	
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	2.0
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.	True	
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.	True	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65552-1
Client Project/Site: Marinette 30015296.00009

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski

Sandie Fredrick

Authorized for release by:
10/23/2020 10:23:16 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
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

Job ID: 320-65552-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-65552-1

Comments
No additional comments.

Receipt
The samples were received on 10/13/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.1º C, 1.4º C, 2.0º C and 3.1º C.

Receipt Exceptions
All samples received shows odds yellow/dark color. 320-65552-1, 320-65552-2, 320-65552-3, 320-65552-4, 320-65552-5, 320-65552-6, 320-65552-7, 320-65552-8, 320-65552-9, 320-65552-10 and 320-65552-11

LCMS
Method 537 (modified): Results for samples 320-65552-6, 320-65552-7, 320-65552-8 and 320-65552-9 were 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.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS in the following sample: 320-65552-3. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of 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. 320-65552-9

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of 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. CCVL 320-422844/2

Method 537 (modified): The following samples exhibited elevated noise or matrix interferences for one or more analytes causing elevation of the detection limit (EDL): 320-65552-9 . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

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

General Chemistry
No analytical or quality issues were noted, other than those described 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 320-422268. 320-422268 Method: 3535 PFC Matrix: Water

Method 3535: The following samples are yellow and contain a thin layer of sediments at the bottom of the bottle prior to extraction: 320-65552-1, 320-65552-2, 320-65552-3, 320-65552-4, 320-65552-5, 320-65552-6, 320-65552-7, 320-65552-9, 320-65552-10 and 320-65552-11. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

Method 3535: The following sample is yellow and contains floating particulates at the bottom of the bottle prior to extraction: 320-65552-8. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

Method 3535: During the solid phase extraction process, the following samples contained non-settleable particulates which clogged the solid phase extraction column: 320-65552-1, 320-65552-2, 320-65552-3, 320-65552-4, 320-65552-5, 320-65552-6, 320-65552-7, 320-65552-9, 320-65552-10 and 320-65552-11. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

Job ID: 320-65552-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

Method 3535: The following samples are yellow after final voluming: 320-65552-1 and 320-65552-7. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

Method 3535: The following samples are blue after final voluming: 320-65552-2, 320-65552-3, 320-65552-4, 320-65552-5, 320-65552-6, 320-65552-8, 320-65552-9 and 320-65552-10. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

Method 3535: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: 320-65552-8. preparation batch 320-422268 Method: 3535 PFC Matrix: Water

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

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M01-10102020

Date Collected: 10/10/20 12:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**17**		4.4	2.1	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoropentanoic acid (PFPeA)	**24**		1.8	0.43	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorohexanoic acid (PFHxA)	**24**		1.8	0.51	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoroheptanoic acid (PFHpA)	**13**		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorooctanoic acid (PFOA)	**140**		1.8	0.75	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorononanoic acid (PFNA)	**16**		1.8	0.24	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorodecanoic acid (PFDA)	**3.9**		1.8	0.27	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	0.97	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.48	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.1	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.64	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.78	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.83	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorobutanesulfonic acid (PFBS)	**1.2**	**J**	1.8	0.18	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.26	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorohexanesulfonic acid (PFHxS)	**3.8**		1.8	0.50	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorooctanesulfonic acid (PFOS)	**42**		1.8	0.48	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.33	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.85	ng/L		10/15/20 18:23	10/16/20 21:07	1
Perfluorooctanesulfonamide (FOSA)	**1.5**	**J**	1.8	0.86	ng/L		10/15/20 18:23	10/16/20 21:07	1
NEtFOSA	<1.8		1.8	0.77	ng/L		10/15/20 18:23	10/16/20 21:07	1
NMeFOSA	<1.8		1.8	0.38	ng/L		10/15/20 18:23	10/16/20 21:07	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.4		4.4	1.1	ng/L		10/15/20 18:23	10/16/20 21:07	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.4		4.4	1.1	ng/L		10/15/20 18:23	10/16/20 21:07	1
NMeFOSE	<3.5		3.5	1.2	ng/L		10/15/20 18:23	10/16/20 21:07	1
NEtFOSE	<1.8		1.8	0.75	ng/L		10/15/20 18:23	10/16/20 21:07	1
4:2 FTS	**0.96**	**J**	1.8	0.21	ng/L		10/15/20 18:23	10/16/20 21:07	1
6:2 FTS	**73**		4.4	2.2	ng/L		10/15/20 18:23	10/16/20 21:07	1
8:2 FTS	**35**		1.8	0.41	ng/L		10/15/20 18:23	10/16/20 21:07	1
10:2 FTS	<1.8		1.8	0.59	ng/L		10/15/20 18:23	10/16/20 21:07	1
DONA	<1.8		1.8	0.35	ng/L		10/15/20 18:23	10/16/20 21:07	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		10/15/20 18:23	10/16/20 21:07	1
F-53B Major	<1.8		1.8	0.21	ng/L		10/15/20 18:23	10/16/20 21:07	1
F-53B Minor	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 21:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:07*	*1*
13C5 PFPeA	*68*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:07*	*1*
13C2 PFHxA	*80*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:07*	*1*
13C4 PFHpA	*83*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:07*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M01-10102020

Date Collected: 10/10/20 12:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-1

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	85		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C5 PFNA	85		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C2 PFDA	82		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C2 PFUnA	79		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C2 PFDoA	69		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C2 PFTeDA	74		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C2 PFHxDA	63		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C3 PFBS	79		25 - 150	10/15/20 18:23	10/16/20 21:07	1
18O2 PFHxS	82		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C4 PFOS	85		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C8 FOSA	80		25 - 150	10/15/20 18:23	10/16/20 21:07	1
d3-NMeFOSAA	62		25 - 150	10/15/20 18:23	10/16/20 21:07	1
d5-NEtFOSAA	60		25 - 150	10/15/20 18:23	10/16/20 21:07	1
d-N-MeFOSA-M	62		20 - 150	10/15/20 18:23	10/16/20 21:07	1
d-N-EtFOSA-M	47		20 - 150	10/15/20 18:23	10/16/20 21:07	1
d7-N-MeFOSE-M	46		10 - 120	10/15/20 18:23	10/16/20 21:07	1
d9-N-EtFOSE-M	37		10 - 120	10/15/20 18:23	10/16/20 21:07	1
M2-4:2 FTS	94		25 - 150	10/15/20 18:23	10/16/20 21:07	1
M2-6:2 FTS	115		25 - 150	10/15/20 18:23	10/16/20 21:07	1
M2-8:2 FTS	125		25 - 150	10/15/20 18:23	10/16/20 21:07	1
13C3 HFPO-DA	82		25 - 150	10/15/20 18:23	10/16/20 21:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	160		20	7.7	mg/L			10/15/20 16:47	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M02-10102020
Date Collected: 10/10/20 12:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-2
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.2**		4.2	2.0	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoropentanoic acid (PFPeA)	**11**		1.7	0.41	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorohexanoic acid (PFHxA)	**12**		1.7	0.49	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoroheptanoic acid (PFHpA)	**7.2**		1.7	0.21	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorooctanoic acid (PFOA)	**49**		1.7	0.72	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorononanoic acid (PFNA)	**8.2**		1.7	0.23	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorodecanoic acid (PFDA)	<1.7		1.7	0.26	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.93	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.46	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.62	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.75	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.79	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorobutanesulfonic acid (PFBS)	**1.0**	**J**	1.7	0.17	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoropentanesulfonic acid (PFPeS)	<1.7		1.7	0.25	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorohexanesulfonic acid (PFHxS)	**2.7**		1.7	0.48	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.7		1.7	0.16	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorooctanesulfonic acid (PFOS)	**5.6**		1.7	0.46	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.31	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.27	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.82	ng/L		10/15/20 18:23	10/16/20 21:17	1
Perfluorooctanesulfonamide (FOSA)	<1.7		1.7	0.83	ng/L		10/15/20 18:23	10/16/20 21:17	1
NEtFOSA	<1.7		1.7	0.73	ng/L		10/15/20 18:23	10/16/20 21:17	1
NMeFOSA	<1.7		1.7	0.36	ng/L		10/15/20 18:23	10/16/20 21:17	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.2		4.2	1.0	ng/L		10/15/20 18:23	10/16/20 21:17	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.2		4.2	1.1	ng/L		10/15/20 18:23	10/16/20 21:17	1
NMeFOSE	<3.4		3.4	1.2	ng/L		10/15/20 18:23	10/16/20 21:17	1
NEtFOSE	<1.7		1.7	0.72	ng/L		10/15/20 18:23	10/16/20 21:17	1
4:2 FTS	**0.55**	**J**	1.7	0.20	ng/L		10/15/20 18:23	10/16/20 21:17	1
6:2 FTS	**27**		4.2	2.1	ng/L		10/15/20 18:23	10/16/20 21:17	1
8:2 FTS	**7.3**		1.7	0.39	ng/L		10/15/20 18:23	10/16/20 21:17	1
10:2 FTS	<1.7		1.7	0.56	ng/L		10/15/20 18:23	10/16/20 21:17	1
DONA	<1.7		1.7	0.34	ng/L		10/15/20 18:23	10/16/20 21:17	1
HFPO-DA (GenX)	<3.4		3.4	1.3	ng/L		10/15/20 18:23	10/16/20 21:17	1
F-53B Major	<1.7		1.7	0.20	ng/L		10/15/20 18:23	10/16/20 21:17	1
F-53B Minor	<1.7		1.7	0.27	ng/L		10/15/20 18:23	10/16/20 21:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*61*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:17*	*1*
13C5 PFPeA	*59*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:17*	*1*
13C2 PFHxA	*66*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:17*	*1*
13C4 PFHpA	*70*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:17*	*1*
13C4 PFOA	*69*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:17*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M02-10102020

Date Collected: 10/10/20 12:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-2

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	71		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C2 PFDA	68		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C2 PFUnA	62		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C2 PFDoA	47		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C2 PFTeDA	59		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C2 PFHxDA	57		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C3 PFBS	67		25 - 150	10/15/20 18:23	10/16/20 21:17	1
18O2 PFHxS	69		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C4 PFOS	70		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C8 FOSA	68		25 - 150	10/15/20 18:23	10/16/20 21:17	1
d3-NMeFOSAA	50		25 - 150	10/15/20 18:23	10/16/20 21:17	1
d5-NEtFOSAA	49		25 - 150	10/15/20 18:23	10/16/20 21:17	1
d-N-MeFOSA-M	46		20 - 150	10/15/20 18:23	10/16/20 21:17	1
d-N-EtFOSA-M	38		20 - 150	10/15/20 18:23	10/16/20 21:17	1
d7-N-MeFOSE-M	34		10 - 120	10/15/20 18:23	10/16/20 21:17	1
d9-N-EtFOSE-M	28		10 - 120	10/15/20 18:23	10/16/20 21:17	1
M2-4:2 FTS	77		25 - 150	10/15/20 18:23	10/16/20 21:17	1
M2-6:2 FTS	96		25 - 150	10/15/20 18:23	10/16/20 21:17	1
M2-8:2 FTS	94		25 - 150	10/15/20 18:23	10/16/20 21:17	1
13C3 HFPO-DA	68		25 - 150	10/15/20 18:23	10/16/20 21:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	320		33	13	mg/L			10/15/20 16:48	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M03-10102020
Date Collected: 10/10/20 12:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.6**		4.6	2.2	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoropentanoic acid (PFPeA)	**9.8**		1.8	0.45	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorohexanoic acid (PFHxA)	**10**		1.8	0.54	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoroheptanoic acid (PFHpA)	**5.1**		1.8	0.23	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorooctanoic acid (PFOA)	**80**		1.8	0.79	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorononanoic acid (PFNA)	**8.2**		1.8	0.25	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorodecanoic acid (PFDA)	**1.8**		1.8	0.29	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.51	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.82	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.87	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorobutanesulfonic acid (PFBS)	**0.66**	**J**	1.8	0.18	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorohexanesulfonic acid (PFHxS)	**3.0**		1.8	0.53	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.18	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorooctanesulfonic acid (PFOS)	**19**		1.8	0.50	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.30	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.90	ng/L		10/15/20 18:23	10/16/20 21:26	1
Perfluorooctanesulfonamide (FOSA)	**14**		1.8	0.91	ng/L		10/15/20 18:23	10/16/20 21:26	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/15/20 18:23	10/16/20 21:26	1
NMeFOSA	<1.8		1.8	0.40	ng/L		10/15/20 18:23	10/16/20 21:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 18:23	10/16/20 21:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**8.9**		4.6	1.2	ng/L		10/15/20 18:23	10/16/20 21:26	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 18:23	10/16/20 21:26	1
NEtFOSE	<1.8		1.8	0.79	ng/L		10/15/20 18:23	10/16/20 21:26	1
4:2 FTS	**0.71**	**J**	1.8	0.22	ng/L		10/15/20 18:23	10/16/20 21:26	1
6:2 FTS	**38**		4.6	2.3	ng/L		10/15/20 18:23	10/16/20 21:26	1
8:2 FTS	**19**		1.8	0.42	ng/L		10/15/20 18:23	10/16/20 21:26	1
10:2 FTS	<1.8		1.8	0.62	ng/L		10/15/20 18:23	10/16/20 21:26	1
DONA	<1.8		1.8	0.37	ng/L		10/15/20 18:23	10/16/20 21:26	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 18:23	10/16/20 21:26	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 21:26	1
F-53B Minor	<1.8		1.8	0.30	ng/L		10/15/20 18:23	10/16/20 21:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:26*	*1*
13C5 PFPeA	*79*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:26*	*1*
13C2 PFHxA	*83*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:26*	*1*
13C4 PFHpA	*88*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:26*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M03-10102020
Date Collected: 10/10/20 12:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-3
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	88		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C5 PFNA	89		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C2 PFDA	81		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C2 PFUnA	72		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C2 PFDoA	72		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C2 PFTeDA	71		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C2 PFHxDA	74		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C3 PFBS	80		25 - 150	10/15/20 18:23	10/16/20 21:26	1
18O2 PFHxS	84		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C4 PFOS	85		25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C8 FOSA	81		25 - 150	10/15/20 18:23	10/16/20 21:26	1
d3-NMeFOSAA	75		25 - 150	10/15/20 18:23	10/16/20 21:26	1
d5-NEtFOSAA	84		25 - 150	10/15/20 18:23	10/16/20 21:26	1
d-N-MeFOSA-M	67		20 - 150	10/15/20 18:23	10/16/20 21:26	1
d-N-EtFOSA-M	59		20 - 150	10/15/20 18:23	10/16/20 21:26	1
d7-N-MeFOSE-M	59		10 - 120	10/15/20 18:23	10/16/20 21:26	1
d9-N-EtFOSE-M	55		10 - 120	10/15/20 18:23	10/16/20 21:26	1
M2-4:2 FTS	106		25 - 150	10/15/20 18:23	10/16/20 21:26	1
M2-6:2 FTS	131		25 - 150	10/15/20 18:23	10/16/20 21:26	1
M2-8:2 FTS	155	*5	25 - 150	10/15/20 18:23	10/16/20 21:26	1
13C3 HFPO-DA	85		25 - 150	10/15/20 18:23	10/16/20 21:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	100		20	7.7	mg/L			10/15/20 16:49	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M04-10102020
Date Collected: 10/10/20 12:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**11**		4.8	2.3	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoropentanoic acid (PFPeA)	**19**		1.9	0.47	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorohexanoic acid (PFHxA)	**23**		1.9	0.55	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoroheptanoic acid (PFHpA)	**8.5**		1.9	0.24	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorooctanoic acid (PFOA)	**110**		1.9	0.81	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorononanoic acid (PFNA)	**5.8**		1.9	0.26	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoroundecanoic acid (PFUnA)	**1.5**	**J**	1.9	1.1	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.53	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.70	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.85	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.90	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorohexanesulfonic acid (PFHxS)	**5.9**		1.9	0.55	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorooctanesulfonic acid (PFOS)	**23**		1.9	0.52	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.93	ng/L		10/15/20 18:23	10/16/20 21:35	1
Perfluorooctanesulfonamide (FOSA)	**6.7**		1.9	0.94	ng/L		10/15/20 18:23	10/16/20 21:35	1
NEtFOSA	<1.9		1.9	0.83	ng/L		10/15/20 18:23	10/16/20 21:35	1
NMeFOSA	<1.9		1.9	0.41	ng/L		10/15/20 18:23	10/16/20 21:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.1	ng/L		10/15/20 18:23	10/16/20 21:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**5.8**		4.8	1.2	ng/L		10/15/20 18:23	10/16/20 21:35	1
NMeFOSE	<3.8		3.8	1.3	ng/L		10/15/20 18:23	10/16/20 21:35	1
NEtFOSE	<1.9		1.9	0.81	ng/L		10/15/20 18:23	10/16/20 21:35	1
4:2 FTS	**1.5**	**J**	1.9	0.23	ng/L		10/15/20 18:23	10/16/20 21:35	1
6:2 FTS	**63**		4.8	2.4	ng/L		10/15/20 18:23	10/16/20 21:35	1
8:2 FTS	**18**		1.9	0.44	ng/L		10/15/20 18:23	10/16/20 21:35	1
10:2 FTS	<1.9		1.9	0.64	ng/L		10/15/20 18:23	10/16/20 21:35	1
DONA	<1.9		1.9	0.38	ng/L		10/15/20 18:23	10/16/20 21:35	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		10/15/20 18:23	10/16/20 21:35	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 18:23	10/16/20 21:35	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/15/20 18:23	10/16/20 21:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*73*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:35*	*1*
13C5 PFPeA	*63*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:35*	*1*
13C2 PFHxA	*72*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:35*	*1*
13C4 PFHpA	*75*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:35*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M04-10102020

Date Collected: 10/10/20 12:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-4

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	70		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C5 PFNA	61		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C2 PFDA	71		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C2 PFUnA	62		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C2 PFDoA	57		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C2 PFTeDA	66		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C2 PFHxDA	72		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C3 PFBS	70		25 - 150	10/15/20 18:23	10/16/20 21:35	1
18O2 PFHxS	71		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C4 PFOS	69		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C8 FOSA	65		25 - 150	10/15/20 18:23	10/16/20 21:35	1
d3-NMeFOSAA	56		25 - 150	10/15/20 18:23	10/16/20 21:35	1
d5-NEtFOSAA	65		25 - 150	10/15/20 18:23	10/16/20 21:35	1
d-N-MeFOSA-M	56		20 - 150	10/15/20 18:23	10/16/20 21:35	1
d-N-EtFOSA-M	51		20 - 150	10/15/20 18:23	10/16/20 21:35	1
d7-N-MeFOSE-M	39		10 - 120	10/15/20 18:23	10/16/20 21:35	1
d9-N-EtFOSE-M	45		10 - 120	10/15/20 18:23	10/16/20 21:35	1
M2-4:2 FTS	84		25 - 150	10/15/20 18:23	10/16/20 21:35	1
M2-6:2 FTS	97		25 - 150	10/15/20 18:23	10/16/20 21:35	1
M2-8:2 FTS	112		25 - 150	10/15/20 18:23	10/16/20 21:35	1
13C3 HFPO-DA	74		25 - 150	10/15/20 18:23	10/16/20 21:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	790		50	19	mg/L			10/15/20 16:50	1

Client Sample ID: GW-M05-10102020

Date Collected: 10/10/20 13:05
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**14**		4.1	2.0	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoropentanoic acid (PFPeA)	**25**		1.7	0.41	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorohexanoic acid (PFHxA)	**27**		1.7	0.48	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoroheptanoic acid (PFHpA)	**14**		1.7	0.21	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorooctanoic acid (PFOA)	**170**		1.7	0.71	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorononanoic acid (PFNA)	**17**		1.7	0.22	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorodecanoic acid (PFDA)	**4.3**		1.7	0.26	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoroundecanoic acid (PFUnA)	**6.9**		1.7	0.91	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.46	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.61	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.74	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.78	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorobutanesulfonic acid (PFBS)	**1.2**	**J**	1.7	0.17	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoropentanesulfonic acid (PFPeS)	**0.79**	**J**	1.7	0.25	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorohexanesulfonic acid (PFHxS)	**10**		1.7	0.47	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.7		1.7	0.16	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorooctanesulfonic acid (PFOS)	**35**		1.7	0.45	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.31	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.27	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.80	ng/L		10/15/20 18:23	10/16/20 21:44	1
Perfluorooctanesulfonamide (FOSA)	**42**		1.7	0.81	ng/L		10/15/20 18:23	10/16/20 21:44	1
NEtFOSA	<1.7		1.7	0.72	ng/L		10/15/20 18:23	10/16/20 21:44	1
NMeFOSA	<1.7		1.7	0.36	ng/L		10/15/20 18:23	10/16/20 21:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.1		4.1	1.0	ng/L		10/15/20 18:23	10/16/20 21:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**5.4**		4.1	1.1	ng/L		10/15/20 18:23	10/16/20 21:44	1
NMeFOSE	<3.3		3.3	1.2	ng/L		10/15/20 18:23	10/16/20 21:44	1
NEtFOSE	<1.7		1.7	0.71	ng/L		10/15/20 18:23	10/16/20 21:44	1
4:2 FTS	**2.7**		1.7	0.20	ng/L		10/15/20 18:23	10/16/20 21:44	1
6:2 FTS	**170**		4.1	2.1	ng/L		10/15/20 18:23	10/16/20 21:44	1
8:2 FTS	**170**		1.7	0.38	ng/L		10/15/20 18:23	10/16/20 21:44	1
10:2 FTS	<1.7		1.7	0.56	ng/L		10/15/20 18:23	10/16/20 21:44	1
DONA	<1.7		1.7	0.33	ng/L		10/15/20 18:23	10/16/20 21:44	1
HFPO-DA (GenX)	<3.3		3.3	1.2	ng/L		10/15/20 18:23	10/16/20 21:44	1
F-53B Major	<1.7		1.7	0.20	ng/L		10/15/20 18:23	10/16/20 21:44	1
F-53B Minor	<1.7		1.7	0.27	ng/L		10/15/20 18:23	10/16/20 21:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:44*	*1*
13C5 PFPeA	*75*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:44*	*1*
13C2 PFHxA	*85*		*25 - 150*	*10/15/20 18:23*	*10/16/20 21:44*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M05-10102020

Date Collected: 10/10/20 13:05
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-5

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFHpA	90		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C4 PFOA	87		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C5 PFNA	90		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C2 PFDA	77		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C2 PFUnA	75		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C2 PFDoA	68		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C2 PFTeDA	70		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C2 PFHxDA	76		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C3 PFBS	84		25 - 150	10/15/20 18:23	10/16/20 21:44	1
18O2 PFHxS	85		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C4 PFOS	85		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C8 FOSA	78		25 - 150	10/15/20 18:23	10/16/20 21:44	1
d3-NMeFOSAA	68		25 - 150	10/15/20 18:23	10/16/20 21:44	1
d5-NEtFOSAA	75		25 - 150	10/15/20 18:23	10/16/20 21:44	1
d-N-MeFOSA-M	67		20 - 150	10/15/20 18:23	10/16/20 21:44	1
d-N-EtFOSA-M	57		20 - 150	10/15/20 18:23	10/16/20 21:44	1
d7-N-MeFOSE-M	48		10 - 120	10/15/20 18:23	10/16/20 21:44	1
d9-N-EtFOSE-M	41		10 - 120	10/15/20 18:23	10/16/20 21:44	1
M2-4:2 FTS	110		25 - 150	10/15/20 18:23	10/16/20 21:44	1
M2-6:2 FTS	139		25 - 150	10/15/20 18:23	10/16/20 21:44	1
M2-8:2 FTS	137		25 - 150	10/15/20 18:23	10/16/20 21:44	1
13C3 HFPO-DA	88		25 - 150	10/15/20 18:23	10/16/20 21:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	490		50	19	mg/L			10/15/20 16:51	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M06-10102020
Date Collected: 10/10/20 13:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-6
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**37**		4.6	2.2	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoropentanoic acid (PFPeA)	**100**		1.8	0.45	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorohexanoic acid (PFHxA)	**140**		1.8	0.53	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoroheptanoic acid (PFHpA)	**55**		1.8	0.23	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorononanoic acid (PFNA)	**6.9**		1.8	0.25	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.81	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorobutanesulfonic acid (PFBS)	**4.2**		1.8	0.18	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoropentanesulfonic acid (PFPeS)	**4.6**		1.8	0.27	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorohexanesulfonic acid (PFHxS)	**47**		1.8	0.52	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorooctanesulfonic acid (PFOS)	**6.8**		1.8	0.49	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.89	ng/L		10/15/20 18:23	10/16/20 22:11	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		10/15/20 18:23	10/16/20 22:11	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/15/20 18:23	10/16/20 22:11	1
NMeFOSA	<1.8		1.8	0.39	ng/L		10/15/20 18:23	10/16/20 22:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 18:23	10/16/20 22:11	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/15/20 18:23	10/16/20 22:11	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 18:23	10/16/20 22:11	1
NEtFOSE	<1.8		1.8	0.78	ng/L		10/15/20 18:23	10/16/20 22:11	1
4:2 FTS	**22**		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 22:11	1
8:2 FTS	**3.0**		1.8	0.42	ng/L		10/15/20 18:23	10/16/20 22:11	1
10:2 FTS	<1.8		1.8	0.61	ng/L		10/15/20 18:23	10/16/20 22:11	1
DONA	<1.8		1.8	0.37	ng/L		10/15/20 18:23	10/16/20 22:11	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 18:23	10/16/20 22:11	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 22:11	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/15/20 18:23	10/16/20 22:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*80*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C5 PFPeA	*75*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C2 PFHxA	*86*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C4 PFHpA	*89*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C5 PFNA	*94*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C2 PFDA	*83*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*
13C2 PFUnA	*73*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:11*	*1*

Client Sample ID: GW-M06-10102020
Date Collected: 10/10/20 13:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-6
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	59		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C2 PFTeDA	72		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C2 PFHxDA	77		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C3 PFBS	88		25 - 150	10/15/20 18:23	10/16/20 22:11	1
18O2 PFHxS	93		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C4 PFOS	93		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C8 FOSA	81		25 - 150	10/15/20 18:23	10/16/20 22:11	1
d3-NMeFOSAA	65		25 - 150	10/15/20 18:23	10/16/20 22:11	1
d5-NEtFOSAA	62		25 - 150	10/15/20 18:23	10/16/20 22:11	1
d-N-MeFOSA-M	65		20 - 150	10/15/20 18:23	10/16/20 22:11	1
d-N-EtFOSA-M	57		20 - 150	10/15/20 18:23	10/16/20 22:11	1
d7-N-MeFOSE-M	44		10 - 120	10/15/20 18:23	10/16/20 22:11	1
d9-N-EtFOSE-M	46		10 - 120	10/15/20 18:23	10/16/20 22:11	1
M2-4:2 FTS	106		25 - 150	10/15/20 18:23	10/16/20 22:11	1
M2-8:2 FTS	128		25 - 150	10/15/20 18:23	10/16/20 22:11	1
13C3 HFPO-DA	87		25 - 150	10/15/20 18:23	10/16/20 22:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	700		9.1	3.9	ng/L		10/15/20 18:23	10/17/20 18:15	5
6:2 FTS	960		23	11	ng/L		10/15/20 18:23	10/17/20 18:15	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	89		25 - 150	10/15/20 18:23	10/17/20 18:15	5
M2-6:2 FTS	101		25 - 150	10/15/20 18:23	10/17/20 18:15	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	260		20	7.7	mg/L			10/15/20 16:51	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M07-10102020

Date Collected: 10/10/20 13:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-7

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**310**		4.6	2.2	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorononanoic acid (PFNA)	**220**		1.9	0.25	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorodecanoic acid (PFDA)	**18**		1.9	0.29	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluoroundecanoic acid (PFUnA)	**35**		1.9	1.0	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.82	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.87	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorobutanesulfonic acid (PFBS)	**7.5**		1.9	0.19	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluoropentanesulfonic acid (PFPeS)	**9.9**		1.9	0.28	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorohexanesulfonic acid (PFHxS)	**220**		1.9	0.53	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluoroheptanesulfonic Acid (PFHpS)	**6.7**		1.9	0.18	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.34	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.90	ng/L		10/15/20 18:23	10/16/20 22:20	1
Perfluorooctanesulfonamide (FOSA)	**260**		1.9	0.91	ng/L		10/15/20 18:23	10/16/20 22:20	1
NEtFOSA	<1.9		1.9	0.81	ng/L		10/15/20 18:23	10/16/20 22:20	1
NMeFOSA	<1.9		1.9	0.40	ng/L		10/15/20 18:23	10/16/20 22:20	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 18:23	10/16/20 22:20	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**23**		4.6	1.2	ng/L		10/15/20 18:23	10/16/20 22:20	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 18:23	10/16/20 22:20	1
NEtFOSE	<1.9		1.9	0.79	ng/L		10/15/20 18:23	10/16/20 22:20	1
4:2 FTS	**110**		1.9	0.22	ng/L		10/15/20 18:23	10/16/20 22:20	1
DONA	<1.9		1.9	0.37	ng/L		10/15/20 18:23	10/16/20 22:20	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 18:23	10/16/20 22:20	1
F-53B Major	<1.9		1.9	0.22	ng/L		10/15/20 18:23	10/16/20 22:20	1
F-53B Minor	<1.9		1.9	0.30	ng/L		10/15/20 18:23	10/16/20 22:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C5 PFNA	*113*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C2 PFDA	*107*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C2 PFUnA	*96*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C2 PFDoA	*79*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C2 PFTeDA	*72*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C2 PFHxDA	*47*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C3 PFBS	*100*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
18O2 PFHxS	*104*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C4 PFOS	*108*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C8 FOSA	*97*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
d3-NMeFOSAA	*90*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M07-10102020

Date Collected: 10/10/20 13:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-7

Matrix: Water

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*97*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
d-N-MeFOSA-M	*67*		*20 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
d-N-EtFOSA-M	*63*		*20 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
d7-N-MeFOSE-M	*58*		*10 - 120*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
d9-N-EtFOSE-M	*58*		*10 - 120*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
M2-4:2 FTS	*119*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*
13C3 HFPO-DA	*110*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoropentanoic acid (PFPeA)	**1300**		37	9.1	ng/L		10/15/20 18:23	10/17/20 18:24	20
Perfluorohexanoic acid (PFHxA)	**1100**		37	11	ng/L		10/15/20 18:23	10/17/20 18:24	20
Perfluoroheptanoic acid (PFHpA)	**600**		37	4.6	ng/L		10/15/20 18:23	10/17/20 18:24	20
Perfluorooctanoic acid (PFOA)	**4300**		37	16	ng/L		10/15/20 18:23	10/17/20 18:24	20
Perfluorooctanesulfonic acid (PFOS)	**420**		37	10	ng/L		10/15/20 18:23	10/17/20 18:24	20
6:2 FTS	**4000**		93	46	ng/L		10/15/20 18:23	10/17/20 18:24	20
8:2 FTS	**650**		37	8.5	ng/L		10/15/20 18:23	10/17/20 18:24	20
10:2 FTS	<37		37	12	ng/L		10/15/20 18:23	10/17/20 18:24	20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFPeA	*82*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*
13C2 PFHxA	*78*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*
13C4 PFHpA	*84*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*
13C4 PFOA	*85*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*
M2-6:2 FTS	*102*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*
M2-8:2 FTS	*94*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:24*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**320**		20	7.7	mg/L			10/15/20 16:52	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M08-10102020

Date Collected: 10/10/20 13:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-8

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**55**		5.8	2.8	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoropentanoic acid (PFPeA)	**160**		2.3	0.57	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorohexanoic acid (PFHxA)	**130**		2.3	0.67	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoroheptanoic acid (PFHpA)	**59**		2.3	0.29	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorooctanoic acid (PFOA)	**370**		2.3	0.99	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorononanoic acid (PFNA)	**36**		2.3	0.31	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorodecanoic acid (PFDA)	**2.9**		2.3	0.36	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoroundecanoic acid (PFUnA)	<2.3		2.3	1.3	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorododecanoic acid (PFDoA)	**0.87**	**J**	2.3	0.64	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorotridecanoic acid (PFTriA)	<2.3		2.3	1.5	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorotetradecanoic acid (PFTeA)	<2.3		2.3	0.85	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.3		2.3	1.0	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.3		2.3	1.1	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.3		2.3	0.23	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.3		2.3	0.35	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorohexanesulfonic acid (PFHxS)	**20**		2.3	0.66	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.3		2.3	0.22	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorooctanesulfonic acid (PFOS)	**57**		2.3	0.63	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorononanesulfonic acid (PFNS)	<2.3		2.3	0.43	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorodecanesulfonic acid (PFDS)	<2.3		2.3	0.37	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorododecanesulfonic acid (PFDoS)	<2.3		2.3	1.1	ng/L		10/15/20 18:23	10/17/20 18:52	1
Perfluorooctanesulfonamide (FOSA)	**3.5**		2.3	1.1	ng/L		10/15/20 18:23	10/17/20 18:52	1
NEtFOSA	<2.3		2.3	1.0	ng/L		10/15/20 18:23	10/17/20 18:52	1
NMeFOSA	<2.3		2.3	0.50	ng/L		10/15/20 18:23	10/17/20 18:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.8		5.8	1.4	ng/L		10/15/20 18:23	10/17/20 18:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.8		5.8	1.5	ng/L		10/15/20 18:23	10/17/20 18:52	1
NMeFOSE	<4.6		4.6	1.6	ng/L		10/15/20 18:23	10/17/20 18:52	1
NEtFOSE	<2.3		2.3	0.99	ng/L		10/15/20 18:23	10/17/20 18:52	1
4:2 FTS	**10**		2.3	0.28	ng/L		10/15/20 18:23	10/17/20 18:52	1
8:2 FTS	**120**		2.3	0.53	ng/L		10/15/20 18:23	10/17/20 18:52	1
10:2 FTS	<2.3		2.3	0.78	ng/L		10/15/20 18:23	10/17/20 18:52	1
DONA	<2.3		2.3	0.46	ng/L		10/15/20 18:23	10/17/20 18:52	1
HFPO-DA (GenX)	<4.6		4.6	1.7	ng/L		10/15/20 18:23	10/17/20 18:52	1
F-53B Major	<2.3		2.3	0.28	ng/L		10/15/20 18:23	10/17/20 18:52	1
F-53B Minor	<2.3		2.3	0.37	ng/L		10/15/20 18:23	10/17/20 18:52	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:52*	*1*
13C5 PFPeA	*74*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:52*	*1*
13C2 PFHxA	*97*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:52*	*1*
13C4 PFHpA	*98*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:52*	*1*
13C4 PFOA	*93*		*25 - 150*	*10/15/20 18:23*	*10/17/20 18:52*	*1*

Client Sample ID: GW-M08-10102020
Date Collected: 10/10/20 13:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-8
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	95		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C2 PFDA	92		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C2 PFUnA	70		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C2 PFDoA	58		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C2 PFTeDA	47		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C2 PFHxDA	20	*5	25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C3 PFBS	98		25 - 150	10/15/20 18:23	10/17/20 18:52	1
18O2 PFHxS	103		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C4 PFOS	104		25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C8 FOSA	74		25 - 150	10/15/20 18:23	10/17/20 18:52	1
d3-NMeFOSAA	66		25 - 150	10/15/20 18:23	10/17/20 18:52	1
d5-NEtFOSAA	61		25 - 150	10/15/20 18:23	10/17/20 18:52	1
d-N-MeFOSA-M	76		20 - 150	10/15/20 18:23	10/17/20 18:52	1
d-N-EtFOSA-M	63		20 - 150	10/15/20 18:23	10/17/20 18:52	1
d7-N-MeFOSE-M	62		10 - 120	10/15/20 18:23	10/17/20 18:52	1
d9-N-EtFOSE-M	52		10 - 120	10/15/20 18:23	10/17/20 18:52	1
M2-4:2 FTS	133		25 - 150	10/15/20 18:23	10/17/20 18:52	1
M2-8:2 FTS	182	*5	25 - 150	10/15/20 18:23	10/17/20 18:52	1
13C3 HFPO-DA	107		25 - 150	10/15/20 18:23	10/17/20 18:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	730		29	15	ng/L		10/15/20 18:23	10/17/20 18:34	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	157	*5	25 - 150	10/15/20 18:23	10/17/20 18:34	5

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M09-10102020
Date Collected: 10/10/20 14:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-9
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**73**		4.9	2.4	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoropentanoic acid (PFPeA)	**180**		2.0	0.48	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorohexanoic acid (PFHxA)	**110**		2.0	0.57	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoroheptanoic acid (PFHpA)	**58**		2.0	0.25	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorooctanoic acid (PFOA)	**89**		2.0	0.84	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorononanoic acid (PFNA)	**18**		2.0	0.27	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorodecanoic acid (PFDA)	**18**		2.0	0.31	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoroundecanoic acid (PFUnA)	<3.2	G	3.2	3.2	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.72	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.88	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.93	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorobutanesulfonic acid (PFBS)	**3.0**		2.0	0.20	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorohexanesulfonic acid (PFHxS)	**5.6**		2.0	0.56	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorooctanesulfonic acid (PFOS)	**53**		2.0	0.53	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.96	ng/L		10/15/20 18:23	10/16/20 22:39	1
Perfluorooctanesulfonamide (FOSA)	**20**		2.0	0.97	ng/L		10/15/20 18:23	10/16/20 22:39	1
NEtFOSA	<2.0		2.0	0.86	ng/L		10/15/20 18:23	10/16/20 22:39	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/15/20 18:23	10/16/20 22:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		10/15/20 18:23	10/16/20 22:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.9		4.9	1.3	ng/L		10/15/20 18:23	10/16/20 22:39	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/15/20 18:23	10/16/20 22:39	1
NEtFOSE	<2.0		2.0	0.84	ng/L		10/15/20 18:23	10/16/20 22:39	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/15/20 18:23	10/16/20 22:39	1
DONA	<2.0		2.0	0.40	ng/L		10/15/20 18:23	10/16/20 22:39	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/15/20 18:23	10/16/20 22:39	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 18:23	10/16/20 22:39	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/15/20 18:23	10/16/20 22:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*45*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C5 PFPeA	*44*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C2 PFHxA	*45*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C4 PFHpA	*45*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C4 PFOA	*47*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C5 PFNA	*48*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*
13C2 PFDA	*44*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:39*	*1*

Client Sample ID: GW-M09-10102020
Date Collected: 10/10/20 14:10
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-9
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	38		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C2 PFDoA	29		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C2 PFTeDA	36		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C2 PFHxDA	39		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C3 PFBS	45		25 - 150	10/15/20 18:23	10/16/20 22:39	1
18O2 PFHxS	46		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C4 PFOS	47		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C8 FOSA	41		25 - 150	10/15/20 18:23	10/16/20 22:39	1
d3-NMeFOSAA	35		25 - 150	10/15/20 18:23	10/16/20 22:39	1
d5-NEtFOSAA	35		25 - 150	10/15/20 18:23	10/16/20 22:39	1
d-N-MeFOSA-M	32		20 - 150	10/15/20 18:23	10/16/20 22:39	1
d-N-EtFOSA-M	30		20 - 150	10/15/20 18:23	10/16/20 22:39	1
d7-N-MeFOSE-M	23		10 - 120	10/15/20 18:23	10/16/20 22:39	1
d9-N-EtFOSE-M	23		10 - 120	10/15/20 18:23	10/16/20 22:39	1
M2-4:2 FTS	59		25 - 150	10/15/20 18:23	10/16/20 22:39	1
13C3 HFPO-DA	45		25 - 150	10/15/20 18:23	10/16/20 22:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	**210**		25	12	ng/L		10/15/20 18:23	10/17/20 18:43	5
8:2 FTS	**460**		9.9	2.3	ng/L		10/15/20 18:23	10/17/20 18:43	5
10:2 FTS	<9.9		9.9	3.3	ng/L		10/15/20 18:23	10/17/20 18:43	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	56		25 - 150	10/15/20 18:23	10/17/20 18:43	5
M2-8:2 FTS	61		25 - 150	10/15/20 18:23	10/17/20 18:43	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**200**		20	7.7	mg/L			10/15/20 17:27	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M10-10102020
Date Collected: 10/10/20 14:25
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-10
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**21**		4.4	2.1	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoropentanoic acid (PFPeA)	**33**		1.8	0.43	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorohexanoic acid (PFHxA)	**30**		1.8	0.51	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoroheptanoic acid (PFHpA)	**18**		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorooctanoic acid (PFOA)	**250**		1.8	0.75	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorononanoic acid (PFNA)	**2.4**		1.8	0.24	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.27	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	0.97	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.49	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.65	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.79	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.83	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorobutanesulfonic acid (PFBS)	**1.2**	**J**	1.8	0.18	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoropentanesulfonic acid (PFPeS)	**0.46**	**J**	1.8	0.27	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorohexanesulfonic acid (PFHxS)	**60**		1.8	0.50	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	**3.9**		1.8	0.17	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorooctanesulfonic acid (PFOS)	**27**		1.8	0.48	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.33	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.86	ng/L		10/15/20 18:23	10/16/20 22:48	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.87	ng/L		10/15/20 18:23	10/16/20 22:48	1
NEtFOSA	<1.8		1.8	0.77	ng/L		10/15/20 18:23	10/16/20 22:48	1
NMeFOSA	<1.8		1.8	0.38	ng/L		10/15/20 18:23	10/16/20 22:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.4		4.4	1.1	ng/L		10/15/20 18:23	10/16/20 22:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.4		4.4	1.2	ng/L		10/15/20 18:23	10/16/20 22:48	1
NMeFOSE	<3.5		3.5	1.2	ng/L		10/15/20 18:23	10/16/20 22:48	1
NEtFOSE	<1.8		1.8	0.75	ng/L		10/15/20 18:23	10/16/20 22:48	1
4:2 FTS	**0.71**	**J**	1.8	0.21	ng/L		10/15/20 18:23	10/16/20 22:48	1
6:2 FTS	**63**		4.4	2.2	ng/L		10/15/20 18:23	10/16/20 22:48	1
8:2 FTS	**15**		1.8	0.41	ng/L		10/15/20 18:23	10/16/20 22:48	1
10:2 FTS	<1.8		1.8	0.59	ng/L		10/15/20 18:23	10/16/20 22:48	1
DONA	<1.8		1.8	0.35	ng/L		10/15/20 18:23	10/16/20 22:48	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		10/15/20 18:23	10/16/20 22:48	1
F-53B Major	<1.8		1.8	0.21	ng/L		10/15/20 18:23	10/16/20 22:48	1
F-53B Minor	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 22:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*84*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:48*	*1*
13C5 PFPeA	*79*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:48*	*1*
13C2 PFHxA	*84*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:48*	*1*
13C4 PFHpA	*89*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:48*	*1*
13C4 PFOA	*87*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:48*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M10-10102020

Date Collected: 10/10/20 14:25
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-10

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	87		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C2 PFDA	81		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C2 PFUnA	77		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C2 PFDoA	63		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C2 PFTeDA	74		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C2 PFHxDA	59		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C3 PFBS	87		25 - 150	10/15/20 18:23	10/16/20 22:48	1
18O2 PFHxS	88		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C4 PFOS	90		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C8 FOSA	81		25 - 150	10/15/20 18:23	10/16/20 22:48	1
d3-NMeFOSAA	60		25 - 150	10/15/20 18:23	10/16/20 22:48	1
d5-NEtFOSAA	61		25 - 150	10/15/20 18:23	10/16/20 22:48	1
d-N-MeFOSA-M	64		20 - 150	10/15/20 18:23	10/16/20 22:48	1
d-N-EtFOSA-M	49		20 - 150	10/15/20 18:23	10/16/20 22:48	1
d7-N-MeFOSE-M	39		10 - 120	10/15/20 18:23	10/16/20 22:48	1
d9-N-EtFOSE-M	32		10 - 120	10/15/20 18:23	10/16/20 22:48	1
M2-4:2 FTS	101		25 - 150	10/15/20 18:23	10/16/20 22:48	1
M2-6:2 FTS	115		25 - 150	10/15/20 18:23	10/16/20 22:48	1
M2-8:2 FTS	107		25 - 150	10/15/20 18:23	10/16/20 22:48	1
13C3 HFPO-DA	86		25 - 150	10/15/20 18:23	10/16/20 22:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	250		20	7.7	mg/L			10/15/20 17:28	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: DUP-02-10102020

Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.6**		4.4	2.1	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoropentanoic acid (PFPeA)	**10**		1.8	0.43	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorohexanoic acid (PFHxA)	**15**		1.8	0.51	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoroheptanoic acid (PFHpA)	**5.2**		1.8	0.22	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorooctanoic acid (PFOA)	**76**		1.8	0.74	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorononanoic acid (PFNA)	<1.8		1.8	0.24	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.27	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	0.96	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.48	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.1	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.64	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.78	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.82	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorobutanesulfonic acid (PFBS)	**0.68**	**J**	1.8	0.18	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoropentanesulfonic acid (PFPeS)	<1.8		1.8	0.26	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorohexanesulfonic acid (PFHxS)	**4.0**		1.8	0.50	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.8		1.8	0.17	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorooctanesulfonic acid (PFOS)	**17**		1.8	0.47	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.32	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.85	ng/L		10/15/20 18:23	10/16/20 22:57	1
Perfluorooctanesulfonamide (FOSA)	**5.8**		1.8	0.86	ng/L		10/15/20 18:23	10/16/20 22:57	1
NEtFOSA	<1.8		1.8	0.76	ng/L		10/15/20 18:23	10/16/20 22:57	1
NMeFOSA	<1.8		1.8	0.38	ng/L		10/15/20 18:23	10/16/20 22:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.4		4.4	1.1	ng/L		10/15/20 18:23	10/16/20 22:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**5.0**		4.4	1.1	ng/L		10/15/20 18:23	10/16/20 22:57	1
NMeFOSE	<3.5		3.5	1.2	ng/L		10/15/20 18:23	10/16/20 22:57	1
NEtFOSE	<1.8		1.8	0.74	ng/L		10/15/20 18:23	10/16/20 22:57	1
4:2 FTS	**0.68**	**J**	1.8	0.21	ng/L		10/15/20 18:23	10/16/20 22:57	1
6:2 FTS	**22**		4.4	2.2	ng/L		10/15/20 18:23	10/16/20 22:57	1
8:2 FTS	**11**		1.8	0.40	ng/L		10/15/20 18:23	10/16/20 22:57	1
10:2 FTS	<1.8		1.8	0.59	ng/L		10/15/20 18:23	10/16/20 22:57	1
DONA	<1.8		1.8	0.35	ng/L		10/15/20 18:23	10/16/20 22:57	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		10/15/20 18:23	10/16/20 22:57	1
F-53B Major	<1.8		1.8	0.21	ng/L		10/15/20 18:23	10/16/20 22:57	1
F-53B Minor	<1.8		1.8	0.28	ng/L		10/15/20 18:23	10/16/20 22:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:57*	*1*
13C5 PFPeA	*75*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:57*	*1*
13C2 PFHxA	*81*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:57*	*1*
13C4 PFHpA	*82*		*25 - 150*	*10/15/20 18:23*	*10/16/20 22:57*	*1*

Client Sample ID: DUP-02-10102020
Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-11
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	87		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C5 PFNA	85		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C2 PFDA	79		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C2 PFUnA	72		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C2 PFDoA	66		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C2 PFTeDA	69		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C2 PFHxDA	72		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C3 PFBS	79		25 - 150	10/15/20 18:23	10/16/20 22:57	1
18O2 PFHxS	80		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C4 PFOS	76		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C8 FOSA	81		25 - 150	10/15/20 18:23	10/16/20 22:57	1
d3-NMeFOSAA	55		25 - 150	10/15/20 18:23	10/16/20 22:57	1
d5-NEtFOSAA	60		25 - 150	10/15/20 18:23	10/16/20 22:57	1
d-N-MeFOSA-M	59		20 - 150	10/15/20 18:23	10/16/20 22:57	1
d-N-EtFOSA-M	52		20 - 150	10/15/20 18:23	10/16/20 22:57	1
d7-N-MeFOSE-M	41		10 - 120	10/15/20 18:23	10/16/20 22:57	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 18:23	10/16/20 22:57	1
M2-4:2 FTS	87		25 - 150	10/15/20 18:23	10/16/20 22:57	1
M2-6:2 FTS	101		25 - 150	10/15/20 18:23	10/16/20 22:57	1
M2-8:2 FTS	101		25 - 150	10/15/20 18:23	10/16/20 22:57	1
13C3 HFPO-DA	81		25 - 150	10/15/20 18:23	10/16/20 22:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	540		33	13	mg/L			10/15/20 16:53	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-65552-1	GW-M01-10102020	69	68	80	83	85	85	82	79
320-65552-2	GW-M02-10102020	61	59	66	70	69	71	68	62
320-65552-3	GW-M03-10102020	79	79	83	88	88	89	81	72
320-65552-4	GW-M04-10102020	73	63	72	75	70	61	71	62
320-65552-5	GW-M05-10102020	80	75	85	90	87	90	77	75
320-65552-6	GW-M06-10102020	80	75	86	89		94	83	73
320-65552-6 - DL	GW-M06-10102020					89			
320-65552-7	GW-M07-10102020	88					113	107	96
320-65552-7 - DL	GW-M07-10102020		82	78	84	85			
320-65552-8 - DL	GW-M08-10102020								
320-65552-8	GW-M08-10102020	72	74	97	98	93	95	92	70
320-65552-9	GW-M09-10102020	45	44	45	45	47	48	44	38
320-65552-9 - DL	GW-M09-10102020								
320-65552-10	GW-M10-10102020	84	79	84	89	87	87	81	77
320-65552-11	DUP-02-10102020	79	75	81	82	87	85	79	72
LCS 320-422268/2-A	Lab Control Sample	89	90	87	90	93	95	88	88
LCSD 320-422268/3-A	Lab Control Sample Dup	94	97	93	95	97	96	98	101
MB 320-422268/1-A	Method Blank	91	90	88	91	97	95	89	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOSA (25-150)
320-65552-1	GW-M01-10102020	69	74	63	79	82	85	80	62
320-65552-2	GW-M02-10102020	47	59	57	67	69	70	68	50
320-65552-3	GW-M03-10102020	72	71	74	80	84	85	81	75
320-65552-4	GW-M04-10102020	57	66	72	70	71	69	65	56
320-65552-5	GW-M05-10102020	68	70	76	84	85	85	78	68
320-65552-6	GW-M06-10102020	59	72	77	88	93	93	81	65
320-65552-6 - DL	GW-M06-10102020								
320-65552-7	GW-M07-10102020	79	72	47	100	104	108	97	90
320-65552-7 - DL	GW-M07-10102020								
320-65552-8 - DL	GW-M08-10102020								
320-65552-8	GW-M08-10102020	58	47	20 *5	98	103	104	74	66
320-65552-9	GW-M09-10102020	29	36	39	45	46	47	41	35
320-65552-9 - DL	GW-M09-10102020								
320-65552-10	GW-M10-10102020	63	74	59	87	88	90	81	60
320-65552-11	DUP-02-10102020	66	69	72	79	80	76	81	55
LCS 320-422268/2-A	Lab Control Sample	75	82	91	93	95	97	88	94
LCSD 320-422268/3-A	Lab Control Sample Dup	95	84	97	101	99	103	95	104
MB 320-422268/1-A	Method Blank	89	84	97	93	95	97	89	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOSA (25-150)	dMeFOSAA (20-150)	dEtFOSAA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65552-1	GW-M01-10102020	60	62	47	46	37	94	115	125
320-65552-2	GW-M02-10102020	49	46	38	34	28	77	96	94
320-65552-3	GW-M03-10102020	84	67	59	59	55	106	131	155 *5
320-65552-4	GW-M04-10102020	65	56	51	39	45	84	97	112
320-65552-5	GW-M05-10102020	75	67	57	48	41	110	139	137
320-65552-6	GW-M06-10102020	62	65	57	44	46	106		128
320-65552-6 - DL	GW-M06-10102020							101	

Isotope Dilution Summary

Client: ARCADIS U.S., Inc. Job ID: 320-65552-1
Project/Site: Marinette 30015296.00009

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65552-7	GW-M07-10102020	97	67	63	58	58	119		
320-65552-7 - DL	GW-M07-10102020							102	94
320-65552-8 - DL	GW-M08-10102020							157 *5	
320-65552-8	GW-M08-10102020	61	76	63	62	52	133		182 *5
320-65552-9	GW-M09-10102020	35	32	30	23	23	59		
320-65552-9 - DL	GW-M09-10102020							56	61
320-65552-10	GW-M10-10102020	61	64	49	39	32	101	115	107
320-65552-11	DUP-02-10102020	60	59	52	41	36	87	101	101
LCS 320-422268/2-A	Lab Control Sample	89	77	51	29	23	99	105	105
LCSD 320-422268/3-A	Lab Control Sample Dup	104	76	57	35	29	103	108	106
MB 320-422268/1-A	Method Blank	96	93	92	58	54	99	110	106

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65552-1	GW-M01-10102020	82
320-65552-2	GW-M02-10102020	68
320-65552-3	GW-M03-10102020	85
320-65552-4	GW-M04-10102020	74
320-65552-5	GW-M05-10102020	88
320-65552-6	GW-M06-10102020	87
320-65552-6 - DL	GW-M06-10102020	
320-65552-7	GW-M07-10102020	110
320-65552-7 - DL	GW-M07-10102020	
320-65552-8 - DL	GW-M08-10102020	
320-65552-8	GW-M08-10102020	107
320-65552-9	GW-M09-10102020	45
320-65552-9 - DL	GW-M09-10102020	
320-65552-10	GW-M10-10102020	86
320-65552-11	DUP-02-10102020	81
LCS 320-422268/2-A	Lab Control Sample	90
LCSD 320-422268/3-A	Lab Control Sample Dup	95
MB 320-422268/1-A	Method Blank	90

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

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

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

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-422268/1-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422268

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/15/20 18:23	10/16/20 20:22	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/15/20 18:23	10/16/20 20:22	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/15/20 18:23	10/16/20 20:22	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/15/20 18:23	10/16/20 20:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		10/15/20 18:23	10/16/20 20:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		10/15/20 18:23	10/16/20 20:22	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/15/20 18:23	10/16/20 20:22	1
NEtFOSE	<2.0		2.0	0.85	ng/L		10/15/20 18:23	10/16/20 20:22	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/15/20 18:23	10/16/20 20:22	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/15/20 18:23	10/16/20 20:22	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/15/20 18:23	10/16/20 20:22	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/15/20 18:23	10/16/20 20:22	1
DONA	<2.0		2.0	0.40	ng/L		10/15/20 18:23	10/16/20 20:22	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/15/20 18:23	10/16/20 20:22	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 18:23	10/16/20 20:22	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/15/20 18:23	10/16/20 20:22	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*91*		*25 - 150*	*10/15/20 18:23*	*10/16/20 20:22*	*1*
13C5 PFPeA	*90*		*25 - 150*	*10/15/20 18:23*	*10/16/20 20:22*	*1*
13C2 PFHxA	*88*		*25 - 150*	*10/15/20 18:23*	*10/16/20 20:22*	*1*
13C4 PFHpA	*91*		*25 - 150*	*10/15/20 18:23*	*10/16/20 20:22*	*1*
13C4 PFOA	*97*		*25 - 150*	*10/15/20 18:23*	*10/16/20 20:22*	*1*

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

Lab Sample ID: MB 320-422268/1-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422268

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	95		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C2 PFDA	89		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C2 PFUnA	93		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C2 PFDoA	89		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C2 PFTeDA	84		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C2 PFHxDA	97		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C3 PFBS	93		25 - 150	10/15/20 18:23	10/16/20 20:22	1
18O2 PFHxS	95		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C4 PFOS	97		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C8 FOSA	89		25 - 150	10/15/20 18:23	10/16/20 20:22	1
d3-NMeFOSAA	93		25 - 150	10/15/20 18:23	10/16/20 20:22	1
d5-NEtFOSAA	96		25 - 150	10/15/20 18:23	10/16/20 20:22	1
d-N-MeFOSA-M	93		20 - 150	10/15/20 18:23	10/16/20 20:22	1
d-N-EtFOSA-M	92		20 - 150	10/15/20 18:23	10/16/20 20:22	1
d7-N-MeFOSE-M	58		10 - 120	10/15/20 18:23	10/16/20 20:22	1
d9-N-EtFOSE-M	54		10 - 120	10/15/20 18:23	10/16/20 20:22	1
M2-4:2 FTS	99		25 - 150	10/15/20 18:23	10/16/20 20:22	1
M2-6:2 FTS	110		25 - 150	10/15/20 18:23	10/16/20 20:22	1
M2-8:2 FTS	106		25 - 150	10/15/20 18:23	10/16/20 20:22	1
13C3 HFPO-DA	90		25 - 150	10/15/20 18:23	10/16/20 20:22	1

Lab Sample ID: LCS 320-422268/2-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422268

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	42.6		ng/L		106	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	38.1		ng/L		95	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	41.5		ng/L		104	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	41.9		ng/L		105	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	39.7		ng/L		99	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.8		ng/L		102	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	44.4		ng/L		111	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	42.7		ng/L		107	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	44.6		ng/L		111	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	44.9		ng/L		112	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	43.3		ng/L		108	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	39.4		ng/L		98	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	38.5		ng/L		96	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	37.6		ng/L		106	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	42.4		ng/L		113	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	37.2		ng/L		102	59 - 119

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

Lab Sample ID: LCS 320-422268/2-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422268

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.1		ng/L		108	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	39.4		ng/L		106	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	40.4		ng/L		105	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.2		ng/L		102	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	36.9		ng/L		95	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	47.1		ng/L		118	73 - 133
NMeFOSA	40.0	38.5		ng/L		96	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.0		ng/L		105	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	43.2		ng/L		108	76 - 136
NMeFOSE	40.0	38.3		ng/L		96	70 - 130
NEtFOSE	40.0	38.3		ng/L		96	71 - 131
4:2 FTS	37.4	37.3		ng/L		100	79 - 139
6:2 FTS	37.9	32.1		ng/L		85	59 - 175
8:2 FTS	38.3	40.2		ng/L		105	75 - 135
10:2 FTS	38.6	41.1		ng/L		107	64 - 142
DONA	37.7	39.8		ng/L		105	79 - 139
HFPO-DA (GenX)	40.0	42.1		ng/L		105	51 - 173
F-53B Major	37.3	37.2		ng/L		100	75 - 135
F-53B Minor	37.7	35.9		ng/L		95	54 - 114

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*89*		*25 - 150*
13C5 PFPeA	*90*		*25 - 150*
13C2 PFHxA	*87*		*25 - 150*
13C4 PFHpA	*90*		*25 - 150*
13C4 PFOA	*93*		*25 - 150*
13C5 PFNA	*95*		*25 - 150*
13C2 PFDA	*88*		*25 - 150*
13C2 PFUnA	*88*		*25 - 150*
13C2 PFDoA	*75*		*25 - 150*
13C2 PFTeDA	*82*		*25 - 150*
13C2 PFHxDA	*91*		*25 - 150*
13C3 PFBS	*93*		*25 - 150*
18O2 PFHxS	*95*		*25 - 150*
13C4 PFOS	*97*		*25 - 150*
13C8 FOSA	*88*		*25 - 150*
d3-NMeFOSAA	*94*		*25 - 150*
d5-NEtFOSAA	*89*		*25 - 150*
d-N-MeFOSA-M	*77*		*20 - 150*
d-N-EtFOSA-M	*51*		*20 - 150*
d7-N-MeFOSE-M	*29*		*10 - 120*
d9-N-EtFOSE-M	*23*		*10 - 120*
M2-4:2 FTS	*99*		*25 - 150*

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

Lab Sample ID: LCS 320-422268/2-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422268

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	105		25 - 150
M2-8:2 FTS	105		25 - 150
13C3 HFPO-DA	90		25 - 150

Lab Sample ID: LCSD 320-422268/3-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422268

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	42.0		ng/L		105	76 - 136	1	30
Perfluoropentanoic acid (PFPeA)	40.0	37.7		ng/L		94	71 - 131	1	30
Perfluorohexanoic acid (PFHxA)	40.0	42.1		ng/L		105	73 - 133	1	30
Perfluoroheptanoic acid (PFHpA)	40.0	40.6		ng/L		102	72 - 132	3	30
Perfluorooctanoic acid (PFOA)	40.0	39.9		ng/L		100	70 - 130	0	30
Perfluorononanoic acid (PFNA)	40.0	41.6		ng/L		104	75 - 135	2	30
Perfluorodecanoic acid (PFDA)	40.0	41.1		ng/L		103	76 - 136	8	30
Perfluoroundecanoic acid (PFUnA)	40.0	40.3		ng/L		101	68 - 128	6	30
Perfluorododecanoic acid (PFDoA)	40.0	41.8		ng/L		104	71 - 131	6	30
Perfluorotridecanoic acid (PFTriA)	40.0	41.1		ng/L		103	71 - 131	9	30
Perfluorotetradecanoic acid (PFTeA)	40.0	45.1		ng/L		113	70 - 130	4	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	37.8		ng/L		94	76 - 136	4	30
Perfluoro-n-octadecanoic acid (PFODA)	40.0	42.9		ng/L		107	58 - 145	11	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.0		ng/L		102	67 - 127	4	30
Perfluoropentanesulfonic acid (PFPeS)	37.5	40.6		ng/L		108	66 - 126	5	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.2		ng/L		100	59 - 119	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.0		ng/L		108	76 - 136	0	30
Perfluorooctanesulfonic acid (PFOS)	37.1	38.0		ng/L		102	70 - 130	4	30
Perfluorononanesulfonic acid (PFNS)	38.4	39.0		ng/L		102	75 - 135	3	30
Perfluorodecanesulfonic acid (PFDS)	38.6	39.6		ng/L		103	71 - 131	1	30
Perfluorododecanesulfonic acid (PFDoS)	38.7	36.4		ng/L		94	67 - 127	1	30
Perfluorooctanesulfonamide (FOSA)	40.0	45.8		ng/L		115	73 - 133	3	30
NMeFOSA	40.0	36.8		ng/L		92	67 - 154	5	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.9		ng/L		107	76 - 136	2	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.4		ng/L		94	76 - 136	14	30
NMeFOSE	40.0	47.6		ng/L		119	70 - 130	22	30
NEtFOSE	40.0	41.5		ng/L		104	71 - 131	8	30

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

Lab Sample ID: LCSD 320-422268/3-A
Matrix: Water
Analysis Batch: 422641

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 422268

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS			37.4	36.7		ng/L		98	79 - 139	2	30
6:2 FTS			37.9	32.7		ng/L		86	59 - 175	2	30
8:2 FTS			38.3	39.0		ng/L		102	75 - 135	3	30
10:2 FTS			38.6	43.2		ng/L		112	64 - 142	5	30
DONA			37.7	37.0		ng/L		98	79 - 139	7	30
HFPO-DA (GenX)			40.0	38.6		ng/L		96	51 - 173	9	30
F-53B Major			37.3	37.7		ng/L		101	75 - 135	1	30
F-53B Minor			37.7	36.6		ng/L		97	54 - 114	2	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*94*		*25 - 150*
13C5 PFPeA	*97*		*25 - 150*
13C2 PFHxA	*93*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C4 PFOA	*97*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*98*		*25 - 150*
13C2 PFUnA	*101*		*25 - 150*
13C2 PFDoA	*95*		*25 - 150*
13C2 PFTeDA	*84*		*25 - 150*
13C2 PFHxDA	*97*		*25 - 150*
13C3 PFBS	*101*		*25 - 150*
18O2 PFHxS	*99*		*25 - 150*
13C4 PFOS	*103*		*25 - 150*
13C8 FOSA	*95*		*25 - 150*
d3-NMeFOSAA	*104*		*25 - 150*
d5-NEtFOSAA	*104*		*25 - 150*
d-N-MeFOSA-M	*76*		*20 - 150*
d-N-EtFOSA-M	*57*		*20 - 150*
d7-N-MeFOSE-M	*35*		*10 - 120*
d9-N-EtFOSE-M	*29*		*10 - 120*
M2-4:2 FTS	*103*		*25 - 150*
M2-6:2 FTS	*108*		*25 - 150*
M2-8:2 FTS	*106*		*25 - 150*
13C3 HFPO-DA	*95*		*25 - 150*

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-566813/1
Matrix: Water
Analysis Batch: 566813

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			10/15/20 16:35	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 500-566813/2
Matrix: Water
Analysis Batch: 566813

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	183		mg/L		91	80 - 120

Lab Sample ID: MB 500-566818/1
Matrix: Water
Analysis Batch: 566818

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			10/15/20 17:25	1

Lab Sample ID: LCS 500-566818/2
Matrix: Water
Analysis Batch: 566818

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	186		mg/L		93	80 - 120

LCMS

Prep Batch: 422268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-1	GW-M01-10102020	Total/NA	Water	3535	
320-65552-2	GW-M02-10102020	Total/NA	Water	3535	
320-65552-3	GW-M03-10102020	Total/NA	Water	3535	
320-65552-4	GW-M04-10102020	Total/NA	Water	3535	
320-65552-5	GW-M05-10102020	Total/NA	Water	3535	
320-65552-6	GW-M06-10102020	Total/NA	Water	3535	
320-65552-6 - DL	GW-M06-10102020	Total/NA	Water	3535	
320-65552-7 - DL	GW-M07-10102020	Total/NA	Water	3535	
320-65552-7	GW-M07-10102020	Total/NA	Water	3535	
320-65552-8 - DL	GW-M08-10102020	Total/NA	Water	3535	
320-65552-8	GW-M08-10102020	Total/NA	Water	3535	
320-65552-9 - DL	GW-M09-10102020	Total/NA	Water	3535	
320-65552-9	GW-M09-10102020	Total/NA	Water	3535	
320-65552-10	GW-M10-10102020	Total/NA	Water	3535	
320-65552-11	DUP-02-10102020	Total/NA	Water	3535	
MB 320-422268/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-422268/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-422268/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 422641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-1	GW-M01-10102020	Total/NA	Water	537 (modified)	422268
320-65552-2	GW-M02-10102020	Total/NA	Water	537 (modified)	422268
320-65552-3	GW-M03-10102020	Total/NA	Water	537 (modified)	422268
320-65552-4	GW-M04-10102020	Total/NA	Water	537 (modified)	422268
320-65552-5	GW-M05-10102020	Total/NA	Water	537 (modified)	422268
320-65552-6	GW-M06-10102020	Total/NA	Water	537 (modified)	422268
320-65552-7	GW-M07-10102020	Total/NA	Water	537 (modified)	422268
320-65552-9	GW-M09-10102020	Total/NA	Water	537 (modified)	422268
320-65552-10	GW-M10-10102020	Total/NA	Water	537 (modified)	422268
320-65552-11	DUP-02-10102020	Total/NA	Water	537 (modified)	422268
MB 320-422268/1-A	Method Blank	Total/NA	Water	537 (modified)	422268
LCS 320-422268/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	422268
LCSD 320-422268/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	422268

Analysis Batch: 422964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-6 - DL	GW-M06-10102020	Total/NA	Water	537 (modified)	422268
320-65552-7 - DL	GW-M07-10102020	Total/NA	Water	537 (modified)	422268
320-65552-8 - DL	GW-M08-10102020	Total/NA	Water	537 (modified)	422268
320-65552-8	GW-M08-10102020	Total/NA	Water	537 (modified)	422268
320-65552-9 - DL	GW-M09-10102020	Total/NA	Water	537 (modified)	422268

General Chemistry

Analysis Batch: 566813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-1	GW-M01-10102020	Total/NA	Water	SM 2540D	
320-65552-2	GW-M02-10102020	Total/NA	Water	SM 2540D	
320-65552-3	GW-M03-10102020	Total/NA	Water	SM 2540D	
320-65552-4	GW-M04-10102020	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 566813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-5	GW-M05-10102020	Total/NA	Water	SM 2540D	
320-65552-6	GW-M06-10102020	Total/NA	Water	SM 2540D	
320-65552-7	GW-M07-10102020	Total/NA	Water	SM 2540D	
320-65552-11	DUP-02-10102020	Total/NA	Water	SM 2540D	
MB 500-566813/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-566813/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 566818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65552-9	GW-M09-10102020	Total/NA	Water	SM 2540D	
320-65552-10	GW-M10-10102020	Total/NA	Water	SM 2540D	
MB 500-566818/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-566818/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M01-10102020
Date Collected: 10/10/20 12:15
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			283.7 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 21:07	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:47		
								(End) 10/15/20 16:48		

Client Sample ID: GW-M02-10102020
Date Collected: 10/10/20 12:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			296.6 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 21:17	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	30 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:48		
								(End) 10/15/20 16:49		

Client Sample ID: GW-M03-10102020
Date Collected: 10/10/20 12:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			270.6 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 21:26	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:49		
								(End) 10/15/20 16:50		

Client Sample ID: GW-M04-10102020
Date Collected: 10/10/20 12:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.3 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 21:35	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	20 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:50		
								(End) 10/15/20 16:51		

Client Sample ID: GW-M05-10102020
Date Collected: 10/10/20 13:05
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65552-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			301.3 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 21:44	K1S	TAL SAC

Client Sample ID: GW-M05-10102020

Lab Sample ID: 320-65552-5

Date Collected: 10/10/20 13:05

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	20 mL	200 mL	566813		SMO	TAL CHI

Client Sample ID: GW-M06-10102020

Lab Sample ID: 320-65552-6

Date Collected: 10/10/20 13:15

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273.3 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 22:11	K1S	TAL SAC
Total/NA	Prep	3535	DL		273.3 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422964	10/17/20 18:15	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:51		
								(End) 10/15/20 16:52		

Client Sample ID: GW-M07-10102020

Lab Sample ID: 320-65552-7

Date Collected: 10/10/20 13:30

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.7 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 22:20	K1S	TAL SAC
Total/NA	Prep	3535	DL		269.7 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)	DL	20			422964	10/17/20 18:24	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:52		
								(End) 10/15/20 16:53		

Client Sample ID: GW-M08-10102020

Lab Sample ID: 320-65552-8

Date Collected: 10/10/20 13:45

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		215.4 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422964	10/17/20 18:34	GMK	TAL SAC
Total/NA	Prep	3535			215.4 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422964	10/17/20 18:52	GMK	TAL SAC

Client Sample ID: GW-M09-10102020

Lab Sample ID: 320-65552-9

Date Collected: 10/10/20 14:10

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.8 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 22:39	K1S	TAL SAC

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Client Sample ID: GW-M09-10102020

Lab Sample ID: 320-65552-9

Date Collected: 10/10/20 14:10
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		252.8 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422964	10/17/20 18:43	GMK	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:27		
								(End) 10/15/20 17:28		

Client Sample ID: GW-M10-10102020

Lab Sample ID: 320-65552-10

Date Collected: 10/10/20 14:25
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			282.4 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 22:48	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:28		
								(End) 10/15/20 17:29		

Client Sample ID: DUP-02-10102020

Lab Sample ID: 320-65552-11

Date Collected: 10/10/20 00:00
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			285.3 mL	10.00 mL	422268	10/15/20 18:23	PV	TAL SAC
Total/NA	Analysis	537 (modified)		1			422641	10/16/20 22:57	K1S	TAL SAC
Total/NA	Analysis	SM 2540D		1	30 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:53		
								(End) 10/15/20 16:54		

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 320-65552-1
Project/Site: Marinette 30015296.00009

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	08-03-23
Nevada	State	CA000442021-1	07-31-21
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-20
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65552-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65552-1	GW-M01-10102020	Water	10/10/20 12:15	10/13/20 10:00	
320-65552-2	GW-M02-10102020	Water	10/10/20 12:30	10/13/20 10:00	
320-65552-3	GW-M03-10102020	Water	10/10/20 12:45	10/13/20 10:00	
320-65552-4	GW-M04-10102020	Water	10/10/20 12:55	10/13/20 10:00	
320-65552-5	GW-M05-10102020	Water	10/10/20 13:05	10/13/20 10:00	
320-65552-6	GW-M06-10102020	Water	10/10/20 13:15	10/13/20 10:00	
320-65552-7	GW-M07-10102020	Water	10/10/20 13:30	10/13/20 10:00	
320-65552-8	GW-M08-10102020	Water	10/10/20 13:45	10/13/20 10:00	
320-65552-9	GW-M09-10102020	Water	10/10/20 14:10	10/13/20 10:00	
320-65552-10	GW-M10-10102020	Water	10/10/20 14:25	10/13/20 10:00	
320-65552-11	DUP-02-10102020	Water	10/10/20 00:00	10/13/20 10:00	

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Amy Siefker	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-85814-38797.6
Client Contact: Elizabeth Hover	Phone:	E-Mail: sandra.fredrick@eurofinset.com		Page: Page 1 of 1
Company: ARCADIS U.S., Inc.				Job #:

Address: 126 North Jefferson Street Suite 400	Due Date Requested:	Analysis Requested
City: Milwaukee	TAT Requested (days): Standard	
State, Zip: WI, 53202	PO #: 30015296.00009	
Phone:	WO #:	
Email: Elizabeth.Hover@arcadis.com	Project #: 50017363	
Project Name: Marinette 30015296.00009	SSOW#:	
Site: Marinette, WI		

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D - TSS	PFC_IDA - PFAS, Extended List (36 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
GW-M01-10102020	10/10/20	1215	G	Water	N	N	X	X		
GW-M02-10102020		1230		Water						
GW-M03-10102020		1245		Water						
GW-M04-10102020		1255		Water						
GW-M05-10102020		1305		Water						
GW-M06-10102020		1315		Water						
GW-M07-10102020		1330		Water						
• GW-M08-10102020		1345		Water				X		Limited volume
GW-M09-10102020		1410		Water			X			
GW-M10-10102020		1425		Water			X			
✓ DUP-02-10102020		—		Water			X			Duplicate

320-65552 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Amy Siefker	10/12/20 / 1200	Arcadis		10/13/20 1000	Eta Sac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☒ Yes ☐ No	Custody Seal No.: 991374, 991375, 991376, 991377	Cooler Temperature(s) °C and Other Remarks: 1.1, 2.0, 3.1, 1.4

Ver: 01/16/2019

• Received one container - Limited volume

SK 10/13/20

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM.	Carrier Tracking No(s)	COC No:
Client Contact. Shipping/Receiving	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin Wisconsin	Page. Page 1 of 2
Company. TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #. 320-65552-1
Address. 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City University Park	TAT Requested (days):			
State, Zip. IL, 60484	PO #.			
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	WO #:			
Email:	Project #: 50017363			
Project Name: Marinette 30015296.00009	SSOW#:			
Site:				

320-65552 COC

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-M01-10102020 (320-65552-1)	10/10/20	12:15 Central		Water			X	1	
GW-M02-10102020 (320-65552-2)	10/10/20	12:30 Central		Water			X	1	
GW-M03-10102020 (320-65552-3)	10/10/20	12:45 Central		Water			X	1	
GW-M04-10102020 (320-65552-4)	10/10/20	12:55 Central		Water			X	1	
GW-M05-10102020 (320-65552-5)	10/10/20	13:05 Central		Water			X	1	
GW-M06-10102020 (320-65552-6)	10/10/20	13:15 Central		Water			X	1	
GW-M07-10102020 (320-65552-7)	10/10/20	13:30 Central		Water			X	1	
GW-M09-10102020 (320-65552-9)	10/10/20	14:10 Central		Water			X	1	
GW-M10-10102020 (320-65552-10)	10/10/20	14:25 Central		Water			X	1	

Note. Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Juan Lon	10/14/20 - 1630	ETASAL	Shan Scott	10/15/20 0930	TACHI
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0 → 2.0

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 320-197413.2
Client Contact: Shipping/Receiving	Phone	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 320-65552-1
Address: 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #			
Email:	WO #:			
Project Name: Marinette 30015296.00009	Project #: 50017363			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DUP-02-10102020 (320-65552-11)	10/10/20	Central		Water			X	1	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/14/20 - 1630	ETASAC	[signature]	10/15/20 0930	TA-Sac
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65552-1

Login Number: 65552
List Number: 1
Creator: Thompson, Sarah W

List Source: Eurofins TestAmerica, Sacramento

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	991374, 991375, 991376, 991377
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	
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	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65552-1

Login Number: 65552
List Number: 2
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago
List Creation: 10/15/20 01:13 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	
Sample custody seals, if present, are intact.	True	
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	2.0
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.	True	
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.	True	

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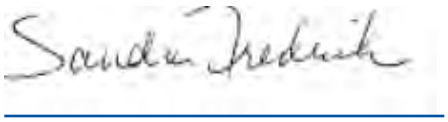
ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-65555-1
Client Project/Site: Marinette 30015296.00009

For:
ARCADIS U.S., Inc.
126 North Jefferson Street
Suite 400
Milwaukee, Wisconsin 53202

Attn: Lisa Rutkowski



Authorized for release by:
10/27/2020 11:48:48 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

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

Job ID: 320-65555-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Job Narrative
320-65555-1

Comments
No additional comments.

Receipt
The samples were received on 10/13/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.1º C, 1.4º C, 2.0º C and 3.1º C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. 320-65555-5, 320-65555-5[MS], 320-65555-5[MSD] and 320-65555-6 COC list MS/MSD for sample 5 on perform MS/MSD (Yes or No) and sample 6 on special instructions. During labeling MS/MSD was for sample 5 as extra containers provided had sample 5 ID, time and date.

320-65555-1. For sample 1, only 1 container was provided and was 1/3 filled.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): 320-65555-12. For sample 12, both containers had time 1800. COC does not list time for sample. Sample was logged in and labeled according to time on container.

Samples 2-11 (including 5 MS/MSD) have discoloration. 320-65555-2, 320-65555-3, 320-65555-4, 320-65555-5, 320-65555-5[MS], 320-65555-5[MSD], 320-65555-6, 320-65555-7, 320-65555-8, 320-65555-9, 320-65555-10 and 320-65555-11

LCMS
Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for 13C4 PFOS for the following sample: 320-65555-4. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: 320-65555-6. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following sample: 320-65555-9. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS in the following samples: 320-65555-10 and 320-65555-11. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS in the following sample: 320-65555-4. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Results for samples 320-65555-2, 320-65555-4, 320-65555-7 and 320-65555-11 were 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

Method 537 (modified): The "I" qualifier means the transition mass ratio for the indicated analyte was outside of 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. CCVL 320-422844/2

Method 537 (modified): Results for samples 320-65555-3, 320-65555-5, 320-65555-5[MS] and 320-65555-5[MSD] were reported from the analysis of a diluted extract due to high concentration of the target analyte as well as in the analysis of the undiluted extract. The dilution

Job ID: 320-65555-1 (Continued)

Laboratory: Eurofins TestAmerica, Sacramento (Continued)

factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): The matrix spike / matrix spike duplicate (MS/MSD) precision for Perfluoroundecanoic acid and NEtFOSApreparation batch 320-422136 and analytical batch 320-423966 was outside control limits. Sample matrix interference and/or sample non-homogeneity is suspected.

Method 537 (modified): Due to high Isotope Dilution Analyte (IDA) recovery of M2-6:2 FTS in the original extract, the following sample required a 500x dilution: 320-65555-3 Internal standard and isotope dilution analyte solutions were refortified into the extract after dilution so quantitation could be performed.

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

General Chemistry
Method SM 2540D: The matrix spike duplicate (MSD) recovery for analytical batch 500-566818 was outside control limits for TSS. Sample matrix interference and/or non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.320-65555-5[MSD]

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 samples contain a thin layer of sediments at the bottom of the bottles prior to extraction 320-65555-1, 320-65555-2, 320-65555-3, 320-65555-4, 320-65555-5, 320-65555-5[MS], 320-65555-5[MSD], 320-65555-6, 320-65555-7, 320-65555-8, 320-65555-9, 320-65555-10 and 320-65555-11 Method Code :3535 PFC Matrix:Water preparation batch 320-422136

Method 3535: Due to the excess amount of sediment, the following samples were fortified with IDA then centrifuged and decanted into new container: 320-65555-1, 320-65555-2, 320-65555-3, 320-65555-4, 320-65555-5, 320-65555-5[MS], 320-65555-5[MSD], 320-65555-6, 320-65555-7, 320-65555-8, 320-65555-9, 320-65555-10 and 320-65555-11. The samples centrifuged tubes were kept for the eluting process. Method Code :3535 PFC Matrix:Water preparation batch 320-422136

Method 3535: The following samples were yellow after final volume: 320-65555-5, 320-65555-5[MS] and 320-65555-5[MSD]. Method Code :3535 PFC Matrix:Water preparation batch 320-422136

Method 3535: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: 320-65555-1. Method Code :3535 PFC Matrix:Water preparation batch 320-422136

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U01-10102020 — Lab Sample ID: 320-65555-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	64		9.3	4.5	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	140		3.7	0.91	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	140		3.7	1.1	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	65		3.7	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	250		3.7	1.6	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	44		3.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	3.8		3.7	2.0	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	3.0	J	3.7	0.37	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	34		3.7	1.1	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	3.4	J	3.7	0.35	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	100		3.7	1.0	ng/L	1		537 (modified)	Total/NA
4:2 FTS	5.8		3.7	0.45	ng/L	1		537 (modified)	Total/NA
6:2 FTS	670		9.3	4.7	ng/L	1		537 (modified)	Total/NA
8:2 FTS	57		3.7	0.86	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-U02-10102020 — Lab Sample ID: 320-65555-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	25		4.9	2.4	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	65		2.0	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	52		2.0	0.57	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	21		2.0	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	110		2.0	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	18		2.0	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.3		2.0	0.30	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.3	J	2.0	1.1	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.3	J	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.4		2.0	0.56	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	42		2.0	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	6.7		2.0	0.96	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.8	J	4.9	1.3	ng/L	1		537 (modified)	Total/NA
4:2 FTS	5.0		2.0	0.24	ng/L	1		537 (modified)	Total/NA
8:2 FTS	63		2.0	0.45	ng/L	1		537 (modified)	Total/NA
6:2 FTS - DL	520		24	12	ng/L	5		537 (modified)	Total/NA
Total Suspended Solids	360		33	13	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U03-10102020 — Lab Sample ID: 320-65555-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1400		430	210	ng/L	100		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5700		170	42	ng/L	100		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5100		170	50	ng/L	100		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2000		170	22	ng/L	100		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12000		170	74	ng/L	100		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	540		170	23	ng/L	100		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	82	J	170	27	ng/L	100		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	200		170	49	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1300		170	47	ng/L	100		537 (modified)	Total/NA
4:2 FTS	440		170	21	ng/L	100		537 (modified)	Total/NA
8:2 FTS	3200		170	40	ng/L	100		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-U03-10102020 (Continued) — Lab Sample ID: 320-65555-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 FTS - DL	41000		2200	1100	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	540		20	7.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U04-10102020 — Lab Sample ID: 320-65555-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorononanoic acid (PFNA)	380		2.2	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	89		2.2	0.34	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	8.9		2.2	0.22	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	11		2.2	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	130		2.2	0.62	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	10		2.2	0.21	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	13		2.2	1.1	ng/L	1		537 (modified)	Total/NA
4:2 FTS	370		2.2	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA) - DL	1400		540	260	ng/L	100		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA) - DL	5200		220	53	ng/L	100		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	5500		220	63	ng/L	100		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	1900		220	27	ng/L	100		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	14000		220	92	ng/L	100		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	820		220	58	ng/L	100		537 (modified)	Total/NA
6:2 FTS - DL	14000		540	270	ng/L	100		537 (modified)	Total/NA
8:2 FTS - DL	3600		220	50	ng/L	100		537 (modified)	Total/NA
Total Suspended Solids	18000		1000	390	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U05-10102020 — Lab Sample ID: 320-65555-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	13	J	27	13	ng/L	5		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.8	J	11	2.7	ng/L	5		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.9	J	11	3.2	ng/L	5		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.4	J	11	1.4	ng/L	5		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13		11	4.6	ng/L	5		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	11	1.1	ng/L	5		537 (modified)	Total/NA
Total Suspended Solids	810	F2 F1	100	39	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U06-10102020 — Lab Sample ID: 320-65555-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	76		4.3	2.1	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	190		1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	150		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	94		1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	170		1.7	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	13		1.7	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.8		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	1.3	J	1.7	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	23		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	21		1.7	0.47	ng/L	1		537 (modified)	Total/NA
4:2 FTS	0.46	J	1.7	0.21	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-U06-10102020 (Continued) — Lab Sample ID: 320-65555-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
6:2 FTS	58		4.3	2.2	ng/L	1		537 (modified)	Total/NA
8:2 FTS	1.5	J	1.7	0.40	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	900		50	19	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U07-10102020 — Lab Sample ID: 320-65555-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	120		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	340		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	230		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	120		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	170		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	18		1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	3.6		1.8	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	44		1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.0		1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	34		1.8	0.49	ng/L	1		537 (modified)	Total/NA
4:2 FTS	3.5		1.8	0.22	ng/L	1		537 (modified)	Total/NA
8:2 FTS	15		1.8	0.42	ng/L	1		537 (modified)	Total/NA
6:2 FTS - DL	410		23	11	ng/L	5		537 (modified)	Total/NA
Total Suspended Solids	1000		100	39	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U08-10102020 — Lab Sample ID: 320-65555-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	83		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	220		1.9	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	170		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	110		1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	300		1.9	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	21		1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.0		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	4.6		1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	110		1.9	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.0		1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	37		1.9	0.50	ng/L	1		537 (modified)	Total/NA
4:2 FTS	5.2		1.9	0.22	ng/L	1		537 (modified)	Total/NA
6:2 FTS	240		4.6	2.3	ng/L	1		537 (modified)	Total/NA
8:2 FTS	9.1		1.9	0.43	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	280		100	39	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U09-10102020 — Lab Sample ID: 320-65555-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	36		5.1	2.5	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	83		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	61		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	42		2.0	0.26	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-U09-10102020 (Continued) — Lab Sample ID: 320-65555-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	67		2.0	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	3.6		2.0	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	1.1	J	2.0	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.62	J	2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.9		2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.0		2.0	0.55	ng/L	1		537 (modified)	Total/NA
4:2 FTS	0.73	J	2.0	0.25	ng/L	1		537 (modified)	Total/NA
6:2 FTS	41		5.1	2.6	ng/L	1		537 (modified)	Total/NA
8:2 FTS	2.7		2.0	0.47	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	3200		200	77	mg/L	1		SM 2540D	Total/NA

Client Sample ID: GW-U10-10102020 — Lab Sample ID: 320-65555-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	19		4.8	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	46		1.9	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	27		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	17		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.73	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.1		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.4		1.9	0.51	ng/L	1		537 (modified)	Total/NA
6:2 FTS	13		4.8	2.4	ng/L	1		537 (modified)	Total/NA
Total Suspended Solids	820		200	77	mg/L	1		SM 2540D	Total/NA

Client Sample ID: DUP-03-10102020 — Lab Sample ID: 320-65555-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	25		4.7	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	67		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	53		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	22		1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	110		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	20		1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.4		1.9	0.29	ng/L	1		537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.4	J	1.9	1.0	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.58	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.3		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	43		1.9	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	6.2		1.9	0.92	ng/L	1		537 (modified)	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.6	J	4.7	1.2	ng/L	1		537 (modified)	Total/NA
4:2 FTS	5.0		1.9	0.23	ng/L	1		537 (modified)	Total/NA
8:2 FTS	63		1.9	0.43	ng/L	1		537 (modified)	Total/NA
6:2 FTS - DL	240		24	12	ng/L	5		537 (modified)	Total/NA
Total Suspended Solids	320		20	7.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: Field Blank-10-10-2020 — Lab Sample ID: 320-65555-12

No Detections.

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U01-10102020

Date Collected: 10/10/20 14:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**64**		9.3	4.5	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoropentanoic acid (PFPeA)	**140**		3.7	0.91	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorohexanoic acid (PFHxA)	**140**		3.7	1.1	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoroheptanoic acid (PFHpA)	**65**		3.7	0.47	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorooctanoic acid (PFOA)	**250**		3.7	1.6	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorononanoic acid (PFNA)	**44**		3.7	0.50	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorodecanoic acid (PFDA)	<3.7		3.7	0.58	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoroundecanoic acid (PFUnA)	**3.8**		3.7	2.0	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorododecanoic acid (PFDoA)	<3.7		3.7	1.0	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorotridecanoic acid (PFTriA)	<3.7		3.7	2.4	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorotetradecanoic acid (PFTeA)	<3.7		3.7	1.4	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<3.7		3.7	1.7	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoro-n-octadecanoic acid (PFODA)	<3.7		3.7	1.8	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorobutanesulfonic acid (PFBS)	**3.0**	**J**	3.7	0.37	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoropentanesulfonic acid (PFPeS)	<3.7		3.7	0.56	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorohexanesulfonic acid (PFHxS)	**34**		3.7	1.1	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	**3.4**	**J**	3.7	0.35	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorooctanesulfonic acid (PFOS)	**100**		3.7	1.0	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorononanesulfonic acid (PFNS)	<3.7		3.7	0.69	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorodecanesulfonic acid (PFDS)	<3.7		3.7	0.60	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorododecanesulfonic acid (PFDoS)	<3.7		3.7	1.8	ng/L		10/15/20 13:38	10/17/20 00:10	1
Perfluorooctanesulfonamide (FOSA)	<3.7		3.7	1.8	ng/L		10/15/20 13:38	10/17/20 00:10	1
NEtFOSA	<3.7		3.7	1.6	ng/L		10/15/20 13:38	10/17/20 00:10	1
NMeFOSA	<3.7		3.7	0.80	ng/L		10/15/20 13:38	10/17/20 00:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<9.3		9.3	2.2	ng/L		10/15/20 13:38	10/17/20 00:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<9.3		9.3	2.4	ng/L		10/15/20 13:38	10/17/20 00:10	1
NMeFOSE	<7.5		7.5	2.6	ng/L		10/15/20 13:38	10/17/20 00:10	1
NEtFOSE	<3.7		3.7	1.6	ng/L		10/15/20 13:38	10/17/20 00:10	1
4:2 FTS	**5.8**		3.7	0.45	ng/L		10/15/20 13:38	10/17/20 00:10	1
6:2 FTS	**670**		9.3	4.7	ng/L		10/15/20 13:38	10/17/20 00:10	1
8:2 FTS	**57**		3.7	0.86	ng/L		10/15/20 13:38	10/17/20 00:10	1
10:2 FTS	<3.7		3.7	1.2	ng/L		10/15/20 13:38	10/17/20 00:10	1
DONA	<3.7		3.7	0.75	ng/L		10/15/20 13:38	10/17/20 00:10	1
HFPO-DA (GenX)	<7.5		7.5	2.8	ng/L		10/15/20 13:38	10/17/20 00:10	1
F-53B Major	<3.7		3.7	0.45	ng/L		10/15/20 13:38	10/17/20 00:10	1
F-53B Minor	<3.7		3.7	0.60	ng/L		10/15/20 13:38	10/17/20 00:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*66*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:10*	*1*
13C5 PFPeA	*59*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:10*	*1*
13C2 PFHxA	*66*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:10*	*1*
13C4 PFHpA	*71*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:10*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U01-10102020
Date Collected: 10/10/20 14:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-1
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	68		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C5 PFNA	69		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C2 PFDA	64		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C2 PFUnA	60		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C2 PFDoA	56		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C2 PFTeDA	50		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C2 PFHxDA	40		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C3 PFBS	70		25 - 150	10/15/20 13:38	10/17/20 00:10	1
18O2 PFHxS	71		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C4 PFOS	73		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C8 FOSA	61		25 - 150	10/15/20 13:38	10/17/20 00:10	1
d3-NMeFOSAA	57		25 - 150	10/15/20 13:38	10/17/20 00:10	1
d5-NEtFOSAA	66		25 - 150	10/15/20 13:38	10/17/20 00:10	1
d-N-MeFOSA-M	62		20 - 150	10/15/20 13:38	10/17/20 00:10	1
d-N-EtFOSA-M	55		20 - 150	10/15/20 13:38	10/17/20 00:10	1
d7-N-MeFOSE-M	35		10 - 120	10/15/20 13:38	10/17/20 00:10	1
d9-N-EtFOSE-M	31		10 - 120	10/15/20 13:38	10/17/20 00:10	1
M2-4:2 FTS	88		25 - 150	10/15/20 13:38	10/17/20 00:10	1
M2-6:2 FTS	100		25 - 150	10/15/20 13:38	10/17/20 00:10	1
M2-8:2 FTS	93		25 - 150	10/15/20 13:38	10/17/20 00:10	1
13C3 HFPO-DA	71		25 - 150	10/15/20 13:38	10/17/20 00:10	1

Client Sample ID: GW-U02-10102020

Date Collected: 10/10/20 14:40
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**25**		4.9	2.4	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoropentanoic acid (PFPeA)	**65**		2.0	0.48	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorohexanoic acid (PFHxA)	**52**		2.0	0.57	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoroheptanoic acid (PFHpA)	**21**		2.0	0.24	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorooctanoic acid (PFOA)	**110**		2.0	0.83	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorononanoic acid (PFNA)	**18**		2.0	0.26	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorodecanoic acid (PFDA)	**2.3**		2.0	0.30	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoroundecanoic acid (PFUnA)	**1.3**	**J**	2.0	1.1	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.54	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.71	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.87	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.92	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorobutanesulfonic acid (PFBS)	**1.3**	**J**	2.0	0.20	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.29	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorohexanesulfonic acid (PFHxS)	**8.4**		2.0	0.56	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorooctanesulfonic acid (PFOS)	**42**		2.0	0.53	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.36	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.31	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.95	ng/L		10/15/20 13:38	10/17/20 00:19	1
Perfluorooctanesulfonamide (FOSA)	**6.7**		2.0	0.96	ng/L		10/15/20 13:38	10/17/20 00:19	1
NEtFOSA	<2.0		2.0	0.85	ng/L		10/15/20 13:38	10/17/20 00:19	1
NMeFOSA	<2.0		2.0	0.42	ng/L		10/15/20 13:38	10/17/20 00:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.9		4.9	1.2	ng/L		10/15/20 13:38	10/17/20 00:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**1.8**	**J**	4.9	1.3	ng/L		10/15/20 13:38	10/17/20 00:19	1
NMeFOSE	<3.9		3.9	1.4	ng/L		10/15/20 13:38	10/17/20 00:19	1
NEtFOSE	<2.0		2.0	0.83	ng/L		10/15/20 13:38	10/17/20 00:19	1
4:2 FTS	**5.0**		2.0	0.24	ng/L		10/15/20 13:38	10/17/20 00:19	1
8:2 FTS	**63**		2.0	0.45	ng/L		10/15/20 13:38	10/17/20 00:19	1
10:2 FTS	<2.0		2.0	0.66	ng/L		10/15/20 13:38	10/17/20 00:19	1
DONA	<2.0		2.0	0.39	ng/L		10/15/20 13:38	10/17/20 00:19	1
HFPO-DA (GenX)	<3.9		3.9	1.5	ng/L		10/15/20 13:38	10/17/20 00:19	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 13:38	10/17/20 00:19	1
F-53B Minor	<2.0		2.0	0.31	ng/L		10/15/20 13:38	10/17/20 00:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*78*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:19*	*1*
13C5 PFPeA	*76*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:19*	*1*
13C2 PFHxA	*79*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:19*	*1*
13C4 PFHpA	*83*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:19*	*1*

Client Sample ID: GW-U02-10102020
Date Collected: 10/10/20 14:40
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-2
Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	83		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C5 PFNA	84		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C2 PFDA	80		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C2 PFUnA	81		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C2 PFDoA	60		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C2 PFTeDA	71		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C2 PFHxDA	62		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C3 PFBS	74		25 - 150	10/15/20 13:38	10/17/20 00:19	1
18O2 PFHxS	76		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C4 PFOS	79		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C8 FOSA	81		25 - 150	10/15/20 13:38	10/17/20 00:19	1
d3-NMeFOSAA	78		25 - 150	10/15/20 13:38	10/17/20 00:19	1
d5-NEtFOSAA	85		25 - 150	10/15/20 13:38	10/17/20 00:19	1
d-N-MeFOSA-M	59		20 - 150	10/15/20 13:38	10/17/20 00:19	1
d-N-EtFOSA-M	48		20 - 150	10/15/20 13:38	10/17/20 00:19	1
d7-N-MeFOSE-M	37		10 - 120	10/15/20 13:38	10/17/20 00:19	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 13:38	10/17/20 00:19	1
M2-4:2 FTS	101		25 - 150	10/15/20 13:38	10/17/20 00:19	1
M2-8:2 FTS	141		25 - 150	10/15/20 13:38	10/17/20 00:19	1
13C3 HFPO-DA	79		25 - 150	10/15/20 13:38	10/17/20 00:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	520		24	12	ng/L		10/15/20 13:38	10/17/20 19:37	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	102		25 - 150	10/15/20 13:38	10/17/20 19:37	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	360		33	13	mg/L			10/15/20 17:29	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U03-10102020

Date Collected: 10/10/20 14:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1400**		430	210	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoropentanoic acid (PFPeA)	**5700**		170	42	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorohexanoic acid (PFHxA)	**5100**		170	50	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoroheptanoic acid (PFHpA)	**2000**		170	22	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorooctanoic acid (PFOA)	**12000**		170	74	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorononanoic acid (PFNA)	**540**		170	23	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorodecanoic acid (PFDA)	**82**	**J**	170	27	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoroundecanoic acid (PFUnA)	<170		170	95	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorododecanoic acid (PFDoA)	<170		170	48	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorotridecanoic acid (PFTriA)	<170		170	110	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorotetradecanoic acid (PFTeA)	<170		170	63	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoro-n-hexadecanoic acid (PFHxDA)	<170		170	77	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoro-n-octadecanoic acid (PFODA)	<170		170	81	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorobutanesulfonic acid (PFBS)	<170		170	17	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoropentanesulfonic acid (PFPeS)	<170		170	26	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorohexanesulfonic acid (PFHxS)	**200**		170	49	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluoroheptanesulfonic Acid (PFHpS)	<170		170	16	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorooctanesulfonic acid (PFOS)	**1300**		170	47	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorononanesulfonic acid (PFNS)	<170		170	32	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorodecanesulfonic acid (PFDS)	<170		170	28	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorododecanesulfonic acid (PFDoS)	<170		170	84	ng/L		10/15/20 13:38	10/20/20 15:46	100
Perfluorooctanesulfonamide (FOSA)	<170		170	85	ng/L		10/15/20 13:38	10/20/20 15:46	100
NEtFOSA	<170		170	75	ng/L		10/15/20 13:38	10/20/20 15:46	100
NMeFOSA	<170		170	37	ng/L		10/15/20 13:38	10/20/20 15:46	100
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<430		430	100	ng/L		10/15/20 13:38	10/20/20 15:46	100
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<430		430	110	ng/L		10/15/20 13:38	10/20/20 15:46	100
NMeFOSE	<350		350	120	ng/L		10/15/20 13:38	10/20/20 15:46	100
NEtFOSE	<170		170	74	ng/L		10/15/20 13:38	10/20/20 15:46	100
4:2 FTS	**440**		170	21	ng/L		10/15/20 13:38	10/20/20 15:46	100
8:2 FTS	**3200**		170	40	ng/L		10/15/20 13:38	10/20/20 15:46	100
10:2 FTS	<170		170	58	ng/L		10/15/20 13:38	10/20/20 15:46	100
DONA	<170		170	35	ng/L		10/15/20 13:38	10/20/20 15:46	100
HFPO-DA (GenX)	<350		350	130	ng/L		10/15/20 13:38	10/20/20 15:46	100
F-53B Major	<170		170	21	ng/L		10/15/20 13:38	10/20/20 15:46	100
F-53B Minor	<170		170	28	ng/L		10/15/20 13:38	10/20/20 15:46	100

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*60*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*
13C5 PFPeA	*64*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*
13C2 PFHxA	*65*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*
13C4 PFHpA	*61*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*
13C4 PFOA	*70*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*
13C5 PFNA	*66*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:46*	*100*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U03-10102020

Date Collected: 10/10/20 14:55
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-3

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	67		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C2 PFUnA	55		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C2 PFDoA	53		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C2 PFTeDA	47		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C2 PFHxDA	26		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C3 PFBS	67		25 - 150	10/15/20 13:38	10/20/20 15:46	100
18O2 PFHxS	58		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C4 PFOS	53		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C8 FOSA	53		25 - 150	10/15/20 13:38	10/20/20 15:46	100
d3-NMeFOSAA	67		25 - 150	10/15/20 13:38	10/20/20 15:46	100
d5-NEtFOSAA	58		25 - 150	10/15/20 13:38	10/20/20 15:46	100
d-N-MeFOSA-M	34		20 - 150	10/15/20 13:38	10/20/20 15:46	100
d-N-EtFOSA-M	33		20 - 150	10/15/20 13:38	10/20/20 15:46	100
d7-N-MeFOSE-M	23		10 - 120	10/15/20 13:38	10/20/20 15:46	100
d9-N-EtFOSE-M	28		10 - 120	10/15/20 13:38	10/20/20 15:46	100
M2-4:2 FTS	64		25 - 150	10/15/20 13:38	10/20/20 15:46	100
M2-8:2 FTS	75		25 - 150	10/15/20 13:38	10/20/20 15:46	100
13C3 HFPO-DA	67		25 - 150	10/15/20 13:38	10/20/20 15:46	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	41000		2200	1100	ng/L		10/15/20 13:38	10/22/20 20:00	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	107		25 - 150	10/15/20 13:38	10/22/20 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	540		20	7.7	mg/L			10/15/20 17:30	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U04-10102020

Date Collected: 10/10/20 15:05
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	**380**		2.2	0.29	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorodecanoic acid (PFDA)	**89**		2.2	0.34	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluoroundecanoic acid (PFUnA)	<2.2		2.2	1.2	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorododecanoic acid (PFDoA)	<2.2		2.2	0.60	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorotridecanoic acid (PFTriA)	<2.2		2.2	1.4	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorotetradecanoic acid (PFTeA)	<2.2		2.2	0.79	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.2		2.2	0.96	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.2		2.2	1.0	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorobutanesulfonic acid (PFBS)	**8.9**		2.2	0.22	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluoropentanesulfonic acid (PFPeS)	**11**		2.2	0.32	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorohexanesulfonic acid (PFHxS)	**130**		2.2	0.62	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	**10**		2.2	0.21	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorononanesulfonic acid (PFNS)	<2.2		2.2	0.40	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorodecanesulfonic acid (PFDS)	<2.2		2.2	0.35	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorododecanesulfonic acid (PFDoS)	<2.2		2.2	1.0	ng/L		10/15/20 13:38	10/17/20 00:37	1
Perfluorooctanesulfonamide (FOSA)	**13**		2.2	1.1	ng/L		10/15/20 13:38	10/17/20 00:37	1
NEtFOSA	<2.2		2.2	0.94	ng/L		10/15/20 13:38	10/17/20 00:37	1
NMeFOSA	<2.2		2.2	0.47	ng/L		10/15/20 13:38	10/17/20 00:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.4		5.4	1.3	ng/L		10/15/20 13:38	10/17/20 00:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.4		5.4	1.4	ng/L		10/15/20 13:38	10/17/20 00:37	1
NMeFOSE	<4.3		4.3	1.5	ng/L		10/15/20 13:38	10/17/20 00:37	1
NEtFOSE	<2.2		2.2	0.92	ng/L		10/15/20 13:38	10/17/20 00:37	1
4:2 FTS	**370**		2.2	0.26	ng/L		10/15/20 13:38	10/17/20 00:37	1
DONA	<2.2		2.2	0.43	ng/L		10/15/20 13:38	10/17/20 00:37	1
HFPO-DA (GenX)	<4.3		4.3	1.6	ng/L		10/15/20 13:38	10/17/20 00:37	1
F-53B Major	<2.2		2.2	0.26	ng/L		10/15/20 13:38	10/17/20 00:37	1
F-53B Minor	<2.2		2.2	0.35	ng/L		10/15/20 13:38	10/17/20 00:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*138*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C2 PFDA	*138*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C2 PFUnA	*133*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C2 PFDoA	*115*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C2 PFTeDA	*89*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C2 PFHxDA	*62*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C3 PFBS	*141*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
18O2 PFHxS	*142*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C4 PFOS	*152*	**5*	*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
13C8 FOSA	*133*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
d3-NMeFOSAA	*109*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
d5-NEtFOSAA	*122*		*25 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
d-N-MeFOSA-M	*97*		*20 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*
d-N-EtFOSA-M	*85*		*20 - 150*	*10/15/20 13:38*	*10/17/20 00:37*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U04-10102020

Date Collected: 10/10/20 15:05
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-4

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
d7-N-MeFOSE-M	69		10 - 120	10/15/20 13:38	10/17/20 00:37	1
d9-N-EtFOSE-M	58		10 - 120	10/15/20 13:38	10/17/20 00:37	1
M2-4:2 FTS	135		25 - 150	10/15/20 13:38	10/17/20 00:37	1
13C3 HFPO-DA	150		25 - 150	10/15/20 13:38	10/17/20 00:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**1400**		540	260	ng/L		10/15/20 13:38	10/17/20 21:27	100
Perfluoropentanoic acid (PFPeA)	**5200**		220	53	ng/L		10/15/20 13:38	10/17/20 21:27	100
Perfluorohexanoic acid (PFHxA)	**5500**		220	63	ng/L		10/15/20 13:38	10/17/20 21:27	100
Perfluoroheptanoic acid (PFHpA)	**1900**		220	27	ng/L		10/15/20 13:38	10/17/20 21:27	100
Perfluorooctanoic acid (PFOA)	**14000**		220	92	ng/L		10/15/20 13:38	10/17/20 21:27	100
Perfluorooctanesulfonic acid (PFOS)	**820**		220	58	ng/L		10/15/20 13:38	10/17/20 21:27	100
6:2 FTS	**14000**		540	270	ng/L		10/15/20 13:38	10/17/20 21:27	100
8:2 FTS	**3600**		220	50	ng/L		10/15/20 13:38	10/17/20 21:27	100
10:2 FTS	<220		220	73	ng/L		10/15/20 13:38	10/17/20 21:27	100

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	61		25 - 150	10/15/20 13:38	10/17/20 21:27	100
13C5 PFPeA	60		25 - 150	10/15/20 13:38	10/17/20 21:27	100
13C2 PFHxA	58		25 - 150	10/15/20 13:38	10/17/20 21:27	100
13C4 PFHpA	57		25 - 150	10/15/20 13:38	10/17/20 21:27	100
13C4 PFOA	59		25 - 150	10/15/20 13:38	10/17/20 21:27	100
M2-6:2 FTS	177	*5	25 - 150	10/15/20 13:38	10/17/20 21:27	100
M2-8:2 FTS	63		25 - 150	10/15/20 13:38	10/17/20 21:27	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**18000**		1000	390	mg/L			10/15/20 17:31	1

Client Sample ID: GW-U05-10102020

Date Collected: 10/10/20 16:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**13**	**J**	27	13	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoropentanoic acid (PFPeA)	**7.8**	**J**	11	2.7	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorohexanoic acid (PFHxA)	**6.9**	**J**	11	3.2	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoroheptanoic acid (PFHpA)	**5.4**	**J**	11	1.4	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorooctanoic acid (PFOA)	**13**		11	4.6	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorononanoic acid (PFNA)	<11		11	1.5	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorodecanoic acid (PFDA)	<11		11	1.7	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoroundecanoic acid (PFUnA)	<11	F2	11	6.0	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorododecanoic acid (PFDoA)	<11		11	3.0	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorotridecanoic acid (PFTriA)	<11		11	7.1	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorotetradecanoic acid (PFTeA)	<11		11	4.0	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoro-n-hexadecanoic acid (PFHxDA)	<11		11	4.9	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoro-n-octadecanoic acid (PFODA)	<11		11	5.1	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorobutanesulfonic acid (PFBS)	**1.6**	**J**	11	1.1	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoropentanesulfonic acid (PFPeS)	<11		11	1.6	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorohexanesulfonic acid (PFHxS)	<11		11	3.1	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluoroheptanesulfonic Acid (PFHpS)	<11		11	1.0	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorooctanesulfonic acid (PFOS)	<11		11	2.9	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorononanesulfonic acid (PFNS)	<11		11	2.0	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorodecanesulfonic acid (PFDS)	<11		11	1.7	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorododecanesulfonic acid (PFDoS)	<11		11	5.3	ng/L		10/15/20 13:38	10/20/20 15:56	5
Perfluorooctanesulfonamide (FOSA)	<11		11	5.4	ng/L		10/15/20 13:38	10/20/20 15:56	5
NEtFOSA	<11	F2	11	4.8	ng/L		10/15/20 13:38	10/20/20 15:56	5
NMeFOSA	<11		11	2.3	ng/L		10/15/20 13:38	10/20/20 15:56	5
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<27		27	6.6	ng/L		10/15/20 13:38	10/20/20 15:56	5
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<27		27	7.1	ng/L		10/15/20 13:38	10/20/20 15:56	5
NMeFOSE	<22		22	7.6	ng/L		10/15/20 13:38	10/20/20 15:56	5
NEtFOSE	<11		11	4.6	ng/L		10/15/20 13:38	10/20/20 15:56	5
4:2 FTS	<11		11	1.3	ng/L		10/15/20 13:38	10/20/20 15:56	5
6:2 FTS	<27		27	14	ng/L		10/15/20 13:38	10/20/20 15:56	5
8:2 FTS	<11		11	2.5	ng/L		10/15/20 13:38	10/20/20 15:56	5
10:2 FTS	<11		11	3.7	ng/L		10/15/20 13:38	10/20/20 15:56	5
DONA	<11		11	2.2	ng/L		10/15/20 13:38	10/20/20 15:56	5
HFPO-DA (GenX)	<22		22	8.2	ng/L		10/15/20 13:38	10/20/20 15:56	5
F-53B Major	<11		11	1.3	ng/L		10/15/20 13:38	10/20/20 15:56	5
F-53B Minor	<11		11	1.7	ng/L		10/15/20 13:38	10/20/20 15:56	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*82*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*
13C5 PFPeA	*81*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*
13C2 PFHxA	*79*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*
13C4 PFHpA	*83*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*
13C4 PFOA	*86*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*
13C5 PFNA	*85*		*25 - 150*	*10/15/20 13:38*	*10/20/20 15:56*	*5*

Client Sample ID: GW-U05-10102020

Date Collected: 10/10/20 16:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-5

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	86		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C2 PFUnA	77		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C2 PFDoA	76		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C2 PFTeDA	62		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C2 PFHxDA	41		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C3 PFBS	75		25 - 150	10/15/20 13:38	10/20/20 15:56	5
18O2 PFHxS	78		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C4 PFOS	78		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C8 FOSA	79		25 - 150	10/15/20 13:38	10/20/20 15:56	5
d3-NMeFOSAA	79		25 - 150	10/15/20 13:38	10/20/20 15:56	5
d5-NEtFOSAA	84		25 - 150	10/15/20 13:38	10/20/20 15:56	5
d-N-MeFOSA-M	62		20 - 150	10/15/20 13:38	10/20/20 15:56	5
d-N-EtFOSA-M	44		20 - 150	10/15/20 13:38	10/20/20 15:56	5
d7-N-MeFOSE-M	29		10 - 120	10/15/20 13:38	10/20/20 15:56	5
d9-N-EtFOSE-M	29		10 - 120	10/15/20 13:38	10/20/20 15:56	5
M2-4:2 FTS	83		25 - 150	10/15/20 13:38	10/20/20 15:56	5
M2-6:2 FTS	104		25 - 150	10/15/20 13:38	10/20/20 15:56	5
M2-8:2 FTS	106		25 - 150	10/15/20 13:38	10/20/20 15:56	5
13C3 HFPO-DA	80		25 - 150	10/15/20 13:38	10/20/20 15:56	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	810	F2 F1	100	39	mg/L			10/15/20 17:32	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U06-10102020

Date Collected: 10/10/20 16:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-6

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**76**		4.3	2.1	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoropentanoic acid (PFPeA)	**190**		1.7	0.43	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorohexanoic acid (PFHxA)	**150**		1.7	0.50	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoroheptanoic acid (PFHpA)	**94**		1.7	0.22	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorooctanoic acid (PFOA)	**170**		1.7	0.74	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorononanoic acid (PFNA)	**13**		1.7	0.23	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorodecanoic acid (PFDA)	<1.7		1.7	0.27	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoroundecanoic acid (PFUnA)	<1.7		1.7	0.96	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorododecanoic acid (PFDoA)	<1.7		1.7	0.48	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorotridecanoic acid (PFTriA)	<1.7		1.7	1.1	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorotetradecanoic acid (PFTeA)	<1.7		1.7	0.63	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.7		1.7	0.77	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.7		1.7	0.82	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorobutanesulfonic acid (PFBS)	**1.8**		1.7	0.17	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoropentanesulfonic acid (PFPeS)	**1.3**	**J**	1.7	0.26	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorohexanesulfonic acid (PFHxS)	**23**		1.7	0.50	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.7		1.7	0.17	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorooctanesulfonic acid (PFOS)	**21**		1.7	0.47	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorononanesulfonic acid (PFNS)	<1.7		1.7	0.32	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorodecanesulfonic acid (PFDS)	<1.7		1.7	0.28	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorododecanesulfonic acid (PFDoS)	<1.7		1.7	0.84	ng/L		10/15/20 13:38	10/17/20 01:14	1
Perfluorooctanesulfonamide (FOSA)	<1.7		1.7	0.85	ng/L		10/15/20 13:38	10/17/20 01:14	1
NEtFOSA	<1.7		1.7	0.76	ng/L		10/15/20 13:38	10/17/20 01:14	1
NMeFOSA	<1.7		1.7	0.37	ng/L		10/15/20 13:38	10/17/20 01:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.3		4.3	1.0	ng/L		10/15/20 13:38	10/17/20 01:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.3		4.3	1.1	ng/L		10/15/20 13:38	10/17/20 01:14	1
NMeFOSE	<3.5		3.5	1.2	ng/L		10/15/20 13:38	10/17/20 01:14	1
NEtFOSE	<1.7		1.7	0.74	ng/L		10/15/20 13:38	10/17/20 01:14	1
4:2 FTS	**0.46**	**J**	1.7	0.21	ng/L		10/15/20 13:38	10/17/20 01:14	1
6:2 FTS	**58**		4.3	2.2	ng/L		10/15/20 13:38	10/17/20 01:14	1
8:2 FTS	**1.5**	**J**	1.7	0.40	ng/L		10/15/20 13:38	10/17/20 01:14	1
10:2 FTS	<1.7		1.7	0.58	ng/L		10/15/20 13:38	10/17/20 01:14	1
DONA	<1.7		1.7	0.35	ng/L		10/15/20 13:38	10/17/20 01:14	1
HFPO-DA (GenX)	<3.5		3.5	1.3	ng/L		10/15/20 13:38	10/17/20 01:14	1
F-53B Major	<1.7		1.7	0.21	ng/L		10/15/20 13:38	10/17/20 01:14	1
F-53B Minor	<1.7		1.7	0.28	ng/L		10/15/20 13:38	10/17/20 01:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*97*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:14*	*1*
13C5 PFPeA	*79*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:14*	*1*
13C2 PFHxA	*110*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:14*	*1*
13C4 PFHpA	*113*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:14*	*1*
13C4 PFOA	*110*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:14*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U06-10102020

Date Collected: 10/10/20 16:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-6

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	108		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C2 PFDA	110		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C2 PFUnA	105		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C2 PFDoA	84		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C2 PFTeDA	93		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C2 PFHxDA	88		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C3 PFBS	102		25 - 150	10/15/20 13:38	10/17/20 01:14	1
18O2 PFHxS	108		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C4 PFOS	111		25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C8 FOSA	99		25 - 150	10/15/20 13:38	10/17/20 01:14	1
d3-NMeFOSAA	88		25 - 150	10/15/20 13:38	10/17/20 01:14	1
d5-NEtFOSAA	87		25 - 150	10/15/20 13:38	10/17/20 01:14	1
d-N-MeFOSA-M	75		20 - 150	10/15/20 13:38	10/17/20 01:14	1
d-N-EtFOSA-M	66		20 - 150	10/15/20 13:38	10/17/20 01:14	1
d7-N-MeFOSE-M	61		10 - 120	10/15/20 13:38	10/17/20 01:14	1
d9-N-EtFOSE-M	53		10 - 120	10/15/20 13:38	10/17/20 01:14	1
M2-4:2 FTS	141		25 - 150	10/15/20 13:38	10/17/20 01:14	1
M2-6:2 FTS	154	*5	25 - 150	10/15/20 13:38	10/17/20 01:14	1
M2-8:2 FTS	207	*5	25 - 150	10/15/20 13:38	10/17/20 01:14	1
13C3 HFPO-DA	116		25 - 150	10/15/20 13:38	10/17/20 01:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	900		50	19	mg/L			10/15/20 17:35	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U07-10102020

Date Collected: 10/10/20 16:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-7

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**120**		4.6	2.2	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoropentanoic acid (PFPeA)	**340**		1.8	0.45	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorohexanoic acid (PFHxA)	**230**		1.8	0.53	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoroheptanoic acid (PFHpA)	**120**		1.8	0.23	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorooctanoic acid (PFOA)	**170**		1.8	0.78	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorononanoic acid (PFNA)	**18**		1.8	0.25	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorodecanoic acid (PFDA)	<1.8		1.8	0.28	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoroundecanoic acid (PFUnA)	<1.8		1.8	1.0	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorododecanoic acid (PFDoA)	<1.8		1.8	0.50	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorotridecanoic acid (PFTriA)	<1.8		1.8	1.2	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorotetradecanoic acid (PFTeA)	<1.8		1.8	0.67	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.8		1.8	0.81	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.8		1.8	0.86	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorobutanesulfonic acid (PFBS)	**2.8**		1.8	0.18	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoropentanesulfonic acid (PFPeS)	**3.6**		1.8	0.27	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorohexanesulfonic acid (PFHxS)	**44**		1.8	0.52	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.0**		1.8	0.17	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorooctanesulfonic acid (PFOS)	**34**		1.8	0.49	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorononanesulfonic acid (PFNS)	<1.8		1.8	0.34	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorodecanesulfonic acid (PFDS)	<1.8		1.8	0.29	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorododecanesulfonic acid (PFDoS)	<1.8		1.8	0.89	ng/L		10/15/20 13:38	10/17/20 01:41	1
Perfluorooctanesulfonamide (FOSA)	<1.8		1.8	0.90	ng/L		10/15/20 13:38	10/17/20 01:41	1
NEtFOSA	<1.8		1.8	0.80	ng/L		10/15/20 13:38	10/17/20 01:41	1
NMeFOSA	<1.8		1.8	0.39	ng/L		10/15/20 13:38	10/17/20 01:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 13:38	10/17/20 01:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/15/20 13:38	10/17/20 01:41	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 13:38	10/17/20 01:41	1
NEtFOSE	<1.8		1.8	0.78	ng/L		10/15/20 13:38	10/17/20 01:41	1
4:2 FTS	**3.5**		1.8	0.22	ng/L		10/15/20 13:38	10/17/20 01:41	1
8:2 FTS	**15**		1.8	0.42	ng/L		10/15/20 13:38	10/17/20 01:41	1
10:2 FTS	<1.8		1.8	0.61	ng/L		10/15/20 13:38	10/17/20 01:41	1
DONA	<1.8		1.8	0.37	ng/L		10/15/20 13:38	10/17/20 01:41	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 13:38	10/17/20 01:41	1
F-53B Major	<1.8		1.8	0.22	ng/L		10/15/20 13:38	10/17/20 01:41	1
F-53B Minor	<1.8		1.8	0.29	ng/L		10/15/20 13:38	10/17/20 01:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*55*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C5 PFPeA	*53*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C2 PFHxA	*61*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C4 PFHpA	*62*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C4 PFOA	*63*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C5 PFNA	*65*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U07-10102020

Date Collected: 10/10/20 16:30
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-7

Matrix: Water

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

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDA	*61*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C2 PFUnA	*51*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C2 PFDoA	*57*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C2 PFTeDA	*54*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C2 PFHxDA	*53*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C3 PFBS	*59*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
18O2 PFHxS	*62*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C4 PFOS	*64*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C8 FOSA	*60*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d3-NMeFOSAA	*62*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d5-NEtFOSAA	*65*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d-N-MeFOSA-M	*42*		*20 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d-N-EtFOSA-M	*34*		*20 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d7-N-MeFOSE-M	*25*		*10 - 120*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
d9-N-EtFOSE-M	*20*		*10 - 120*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
M2-4:2 FTS	*67*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
M2-8:2 FTS	*73*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*
13C3 HFPO-DA	*63*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	**410**		23	11	ng/L		10/15/20 13:38	10/17/20 20:23	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-6:2 FTS	*61*		*25 - 150*	*10/15/20 13:38*	*10/17/20 20:23*	*5*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**1000**		100	39	mg/L			10/15/20 17:36	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U08-10102020

Date Collected: 10/10/20 16:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-8

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**83**		4.6	2.2	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoropentanoic acid (PFPeA)	**220**		1.9	0.45	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorohexanoic acid (PFHxA)	**170**		1.9	0.54	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoroheptanoic acid (PFHpA)	**110**		1.9	0.23	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorooctanoic acid (PFOA)	**300**		1.9	0.79	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorononanoic acid (PFNA)	**21**		1.9	0.25	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.29	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.51	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.68	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.83	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.87	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorobutanesulfonic acid (PFBS)	**5.0**		1.9	0.19	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoropentanesulfonic acid (PFPeS)	**4.6**		1.9	0.28	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorohexanesulfonic acid (PFHxS)	**110**		1.9	0.53	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.0**		1.9	0.18	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorooctanesulfonic acid (PFOS)	**37**		1.9	0.50	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.34	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.90	ng/L		10/15/20 13:38	10/17/20 01:50	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.91	ng/L		10/15/20 13:38	10/17/20 01:50	1
NEtFOSA	<1.9		1.9	0.81	ng/L		10/15/20 13:38	10/17/20 01:50	1
NMeFOSA	<1.9		1.9	0.40	ng/L		10/15/20 13:38	10/17/20 01:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.6		4.6	1.1	ng/L		10/15/20 13:38	10/17/20 01:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.6		4.6	1.2	ng/L		10/15/20 13:38	10/17/20 01:50	1
NMeFOSE	<3.7		3.7	1.3	ng/L		10/15/20 13:38	10/17/20 01:50	1
NEtFOSE	<1.9		1.9	0.79	ng/L		10/15/20 13:38	10/17/20 01:50	1
4:2 FTS	**5.2**		1.9	0.22	ng/L		10/15/20 13:38	10/17/20 01:50	1
6:2 FTS	**240**		4.6	2.3	ng/L		10/15/20 13:38	10/17/20 01:50	1
8:2 FTS	**9.1**		1.9	0.43	ng/L		10/15/20 13:38	10/17/20 01:50	1
10:2 FTS	<1.9		1.9	0.62	ng/L		10/15/20 13:38	10/17/20 01:50	1
DONA	<1.9		1.9	0.37	ng/L		10/15/20 13:38	10/17/20 01:50	1
HFPO-DA (GenX)	<3.7		3.7	1.4	ng/L		10/15/20 13:38	10/17/20 01:50	1
F-53B Major	<1.9		1.9	0.22	ng/L		10/15/20 13:38	10/17/20 01:50	1
F-53B Minor	<1.9		1.9	0.30	ng/L		10/15/20 13:38	10/17/20 01:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*93*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:50*	*1*
13C5 PFPeA	*92*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:50*	*1*
13C2 PFHxA	*104*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:50*	*1*
13C4 PFHpA	*108*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:50*	*1*
13C4 PFOA	*109*		*25 - 150*	*10/15/20 13:38*	*10/17/20 01:50*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U08-10102020

Date Collected: 10/10/20 16:45
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-8

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	112		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C2 PFDA	105		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C2 PFUnA	99		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C2 PFDoA	86		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C2 PFTeDA	66		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C2 PFHxDA	35		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C3 PFBS	101		25 - 150	10/15/20 13:38	10/17/20 01:50	1
18O2 PFHxS	104		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C4 PFOS	108		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C8 FOSA	107		25 - 150	10/15/20 13:38	10/17/20 01:50	1
d3-NMeFOSAA	78		25 - 150	10/15/20 13:38	10/17/20 01:50	1
d5-NEtFOSAA	85		25 - 150	10/15/20 13:38	10/17/20 01:50	1
d-N-MeFOSA-M	49		20 - 150	10/15/20 13:38	10/17/20 01:50	1
d-N-EtFOSA-M	47		20 - 150	10/15/20 13:38	10/17/20 01:50	1
d7-N-MeFOSE-M	37		10 - 120	10/15/20 13:38	10/17/20 01:50	1
d9-N-EtFOSE-M	34		10 - 120	10/15/20 13:38	10/17/20 01:50	1
M2-4:2 FTS	121		25 - 150	10/15/20 13:38	10/17/20 01:50	1
M2-6:2 FTS	134		25 - 150	10/15/20 13:38	10/17/20 01:50	1
M2-8:2 FTS	138		25 - 150	10/15/20 13:38	10/17/20 01:50	1
13C3 HFPO-DA	106		25 - 150	10/15/20 13:38	10/17/20 01:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	280		100	39	mg/L			10/15/20 17:37	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U09-10102020
Date Collected: 10/10/20 17:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-9
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**36**		5.1	2.5	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoropentanoic acid (PFPeA)	**83**		2.0	0.50	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorohexanoic acid (PFHxA)	**61**		2.0	0.59	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoroheptanoic acid (PFHpA)	**42**		2.0	0.26	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorooctanoic acid (PFOA)	**67**		2.0	0.87	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorononanoic acid (PFNA)	**3.6**		2.0	0.28	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorodecanoic acid (PFDA)	**1.1**	**J**	2.0	0.32	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.56	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.75	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.91	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.96	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorobutanesulfonic acid (PFBS)	**0.62**	**J**	2.0	0.20	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.31	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorohexanesulfonic acid (PFHxS)	**4.9**		2.0	0.58	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorooctanesulfonic acid (PFOS)	**5.0**		2.0	0.55	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.38	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.33	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.99	ng/L		10/15/20 13:38	10/17/20 02:00	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	1.0	ng/L		10/15/20 13:38	10/17/20 02:00	1
NEtFOSA	<2.0		2.0	0.89	ng/L		10/15/20 13:38	10/17/20 02:00	1
NMeFOSA	<2.0		2.0	0.44	ng/L		10/15/20 13:38	10/17/20 02:00	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.1		5.1	1.2	ng/L		10/15/20 13:38	10/17/20 02:00	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.1		5.1	1.3	ng/L		10/15/20 13:38	10/17/20 02:00	1
NMeFOSE	<4.1		4.1	1.4	ng/L		10/15/20 13:38	10/17/20 02:00	1
NEtFOSE	<2.0		2.0	0.87	ng/L		10/15/20 13:38	10/17/20 02:00	1
4:2 FTS	**0.73**	**J**	2.0	0.25	ng/L		10/15/20 13:38	10/17/20 02:00	1
6:2 FTS	**41**		5.1	2.6	ng/L		10/15/20 13:38	10/17/20 02:00	1
8:2 FTS	**2.7**		2.0	0.47	ng/L		10/15/20 13:38	10/17/20 02:00	1
10:2 FTS	<2.0		2.0	0.68	ng/L		10/15/20 13:38	10/17/20 02:00	1
DONA	<2.0		2.0	0.41	ng/L		10/15/20 13:38	10/17/20 02:00	1
HFPO-DA (GenX)	<4.1		4.1	1.5	ng/L		10/15/20 13:38	10/17/20 02:00	1
F-53B Major	<2.0		2.0	0.25	ng/L		10/15/20 13:38	10/17/20 02:00	1
F-53B Minor	<2.0		2.0	0.33	ng/L		10/15/20 13:38	10/17/20 02:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*127*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:00*	*1*
13C5 PFPeA	*117*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:00*	*1*
13C2 PFHxA	*128*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:00*	*1*
13C4 PFHpA	*132*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:00*	*1*
13C4 PFOA	*133*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:00*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U09-10102020

Date Collected: 10/10/20 17:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-9

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	133		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C2 PFDA	120		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C2 PFUnA	124		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C2 PFDoA	109		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C2 PFTeDA	100		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C2 PFHxDA	98		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C3 PFBS	123		25 - 150	10/15/20 13:38	10/17/20 02:00	1
18O2 PFHxS	128		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C4 PFOS	126		25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C8 FOSA	128		25 - 150	10/15/20 13:38	10/17/20 02:00	1
d3-NMeFOSAA	108		25 - 150	10/15/20 13:38	10/17/20 02:00	1
d5-NEtFOSAA	119		25 - 150	10/15/20 13:38	10/17/20 02:00	1
d-N-MeFOSA-M	79		20 - 150	10/15/20 13:38	10/17/20 02:00	1
d-N-EtFOSA-M	61		20 - 150	10/15/20 13:38	10/17/20 02:00	1
d7-N-MeFOSE-M	46		10 - 120	10/15/20 13:38	10/17/20 02:00	1
d9-N-EtFOSE-M	39		10 - 120	10/15/20 13:38	10/17/20 02:00	1
M2-4:2 FTS	153	*5	25 - 150	10/15/20 13:38	10/17/20 02:00	1
M2-6:2 FTS	170	*5	25 - 150	10/15/20 13:38	10/17/20 02:00	1
M2-8:2 FTS	165	*5	25 - 150	10/15/20 13:38	10/17/20 02:00	1
13C3 HFPO-DA	130		25 - 150	10/15/20 13:38	10/17/20 02:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	3200		200	77	mg/L			10/15/20 17:38	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U10-10102020
Date Collected: 10/10/20 17:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-10
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**19**		4.8	2.3	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoropentanoic acid (PFPeA)	**46**		1.9	0.47	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorohexanoic acid (PFHxA)	**27**		1.9	0.55	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoroheptanoic acid (PFHpA)	**17**		1.9	0.24	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorooctanoic acid (PFOA)	**12**		1.9	0.81	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorononanoic acid (PFNA)	<1.9		1.9	0.26	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.70	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.85	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.90	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorobutanesulfonic acid (PFBS)	**0.73**	**J**	1.9	0.19	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorohexanesulfonic acid (PFHxS)	**2.1**		1.9	0.54	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorooctanesulfonic acid (PFOS)	**3.4**		1.9	0.51	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.31	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		10/15/20 13:38	10/17/20 02:09	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.93	ng/L		10/15/20 13:38	10/17/20 02:09	1
NEtFOSA	<1.9		1.9	0.83	ng/L		10/15/20 13:38	10/17/20 02:09	1
NMeFOSA	<1.9		1.9	0.41	ng/L		10/15/20 13:38	10/17/20 02:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.1	ng/L		10/15/20 13:38	10/17/20 02:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.2	ng/L		10/15/20 13:38	10/17/20 02:09	1
NMeFOSE	<3.8		3.8	1.3	ng/L		10/15/20 13:38	10/17/20 02:09	1
NEtFOSE	<1.9		1.9	0.81	ng/L		10/15/20 13:38	10/17/20 02:09	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/15/20 13:38	10/17/20 02:09	1
6:2 FTS	**13**		4.8	2.4	ng/L		10/15/20 13:38	10/17/20 02:09	1
8:2 FTS	<1.9		1.9	0.44	ng/L		10/15/20 13:38	10/17/20 02:09	1
10:2 FTS	<1.9		1.9	0.64	ng/L		10/15/20 13:38	10/17/20 02:09	1
DONA	<1.9		1.9	0.38	ng/L		10/15/20 13:38	10/17/20 02:09	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		10/15/20 13:38	10/17/20 02:09	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:38	10/17/20 02:09	1
F-53B Minor	<1.9		1.9	0.31	ng/L		10/15/20 13:38	10/17/20 02:09	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:09*	*1*
13C5 PFPeA	*72*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:09*	*1*
13C2 PFHxA	*81*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:09*	*1*
13C4 PFHpA	*86*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:09*	*1*
13C4 PFOA	*87*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:09*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U10-10102020

Date Collected: 10/10/20 17:20
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-10

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	87		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C2 PFDA	82		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C2 PFUnA	71		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C2 PFDoA	65		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C2 PFTeDA	47		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C2 PFHxDA	50		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C3 PFBS	80		25 - 150	10/15/20 13:38	10/17/20 02:09	1
18O2 PFHxS	83		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C4 PFOS	84		25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C8 FOSA	82		25 - 150	10/15/20 13:38	10/17/20 02:09	1
d3-NMeFOSAA	90		25 - 150	10/15/20 13:38	10/17/20 02:09	1
d5-NEtFOSAA	95		25 - 150	10/15/20 13:38	10/17/20 02:09	1
d-N-MeFOSA-M	56		20 - 150	10/15/20 13:38	10/17/20 02:09	1
d-N-EtFOSA-M	42		20 - 150	10/15/20 13:38	10/17/20 02:09	1
d7-N-MeFOSE-M	44		10 - 120	10/15/20 13:38	10/17/20 02:09	1
d9-N-EtFOSE-M	34		10 - 120	10/15/20 13:38	10/17/20 02:09	1
M2-4:2 FTS	108		25 - 150	10/15/20 13:38	10/17/20 02:09	1
M2-6:2 FTS	137		25 - 150	10/15/20 13:38	10/17/20 02:09	1
M2-8:2 FTS	158	*5	25 - 150	10/15/20 13:38	10/17/20 02:09	1
13C3 HFPO-DA	83		25 - 150	10/15/20 13:38	10/17/20 02:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	820		200	77	mg/L			10/15/20 17:39	1

Client Sample ID: DUP-03-10102020

Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-11

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**25**		4.7	2.3	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoropentanoic acid (PFPeA)	**67**		1.9	0.46	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorohexanoic acid (PFHxA)	**53**		1.9	0.55	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoroheptanoic acid (PFHpA)	**22**		1.9	0.24	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorooctanoic acid (PFOA)	**110**		1.9	0.80	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorononanoic acid (PFNA)	**20**		1.9	0.25	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorodecanoic acid (PFDA)	**2.4**		1.9	0.29	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoroundecanoic acid (PFUnA)	**1.4**	**J**	1.9	1.0	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.69	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.84	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.88	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorobutanesulfonic acid (PFBS)	**1.2**	**J**	1.9	0.19	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoropentanesulfonic acid (PFPeS)	**0.58**	**J**	1.9	0.28	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorohexanesulfonic acid (PFHxS)	**8.3**		1.9	0.54	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorooctanesulfonic acid (PFOS)	**43**		1.9	0.51	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.91	ng/L		10/15/20 13:38	10/17/20 02:18	1
Perfluorooctanesulfonamide (FOSA)	**6.2**		1.9	0.92	ng/L		10/15/20 13:38	10/17/20 02:18	1
NEtFOSA	<1.9		1.9	0.82	ng/L		10/15/20 13:38	10/17/20 02:18	1
NMeFOSA	<1.9		1.9	0.40	ng/L		10/15/20 13:38	10/17/20 02:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7	1.1	ng/L		10/15/20 13:38	10/17/20 02:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	**1.6**	**J**	4.7	1.2	ng/L		10/15/20 13:38	10/17/20 02:18	1
NMeFOSE	<3.8		3.8	1.3	ng/L		10/15/20 13:38	10/17/20 02:18	1
NEtFOSE	<1.9		1.9	0.80	ng/L		10/15/20 13:38	10/17/20 02:18	1
4:2 FTS	**5.0**		1.9	0.23	ng/L		10/15/20 13:38	10/17/20 02:18	1
8:2 FTS	**63**		1.9	0.43	ng/L		10/15/20 13:38	10/17/20 02:18	1
10:2 FTS	<1.9		1.9	0.63	ng/L		10/15/20 13:38	10/17/20 02:18	1
DONA	<1.9		1.9	0.38	ng/L		10/15/20 13:38	10/17/20 02:18	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		10/15/20 13:38	10/17/20 02:18	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:38	10/17/20 02:18	1
F-53B Minor	<1.9		1.9	0.30	ng/L		10/15/20 13:38	10/17/20 02:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:18*	*1*
13C5 PFPeA	*83*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:18*	*1*
13C2 PFHxA	*87*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:18*	*1*
13C4 PFHpA	*89*		*25 - 150*	*10/15/20 13:38*	*10/17/20 02:18*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: DUP-03-10102020

Date Collected: 10/10/20 00:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-11

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	89		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C5 PFNA	92		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C2 PFDA	85		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C2 PFUnA	80		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C2 PFDoA	72		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C2 PFTeDA	76		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C2 PFHxDA	62		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C3 PFBS	84		25 - 150	10/15/20 13:38	10/17/20 02:18	1
18O2 PFHxS	82		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C4 PFOS	88		25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C8 FOSA	88		25 - 150	10/15/20 13:38	10/17/20 02:18	1
d3-NMeFOSAA	87		25 - 150	10/15/20 13:38	10/17/20 02:18	1
d5-NEtFOSAA	89		25 - 150	10/15/20 13:38	10/17/20 02:18	1
d-N-MeFOSA-M	67		20 - 150	10/15/20 13:38	10/17/20 02:18	1
d-N-EtFOSA-M	57		20 - 150	10/15/20 13:38	10/17/20 02:18	1
d7-N-MeFOSE-M	52		10 - 120	10/15/20 13:38	10/17/20 02:18	1
d9-N-EtFOSE-M	44		10 - 120	10/15/20 13:38	10/17/20 02:18	1
M2-4:2 FTS	121		25 - 150	10/15/20 13:38	10/17/20 02:18	1
M2-8:2 FTS	169	*5	25 - 150	10/15/20 13:38	10/17/20 02:18	1
13C3 HFPO-DA	87		25 - 150	10/15/20 13:38	10/17/20 02:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2 FTS	240		24	12	ng/L		10/15/20 13:38	10/17/20 20:32	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	120		25 - 150	10/15/20 13:38	10/17/20 20:32	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	320		20	7.7	mg/L			10/15/20 16:54	1

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: Field Blank-10-10-2020

Date Collected: 10/10/20 18:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-12

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<4.8		4.8	2.3	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoropentanoic acid (PFPeA)	<1.9		1.9	0.47	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9	0.55	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9	0.24	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9	0.81	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorononanoic acid (PFNA)	<1.9		1.9	0.26	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9	0.30	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9	1.0	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9	0.52	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9	1.2	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9	0.70	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<1.9		1.9	0.85	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoro-n-octadecanoic acid (PFODA)	<1.9		1.9	0.90	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9	0.19	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9	0.29	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9	0.54	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9	0.18	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9	0.51	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9	0.35	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9	0.30	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorododecanesulfonic acid (PFDoS)	<1.9		1.9	0.92	ng/L		10/15/20 13:44	10/17/20 02:27	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9	0.93	ng/L		10/15/20 13:44	10/17/20 02:27	1
NEtFOSA	<1.9		1.9	0.83	ng/L		10/15/20 13:44	10/17/20 02:27	1
NMeFOSA	<1.9		1.9	0.41	ng/L		10/15/20 13:44	10/17/20 02:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.8		4.8	1.1	ng/L		10/15/20 13:44	10/17/20 02:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.8		4.8	1.2	ng/L		10/15/20 13:44	10/17/20 02:27	1
NMeFOSE	<3.8		3.8	1.3	ng/L		10/15/20 13:44	10/17/20 02:27	1
NEtFOSE	<1.9		1.9	0.81	ng/L		10/15/20 13:44	10/17/20 02:27	1
4:2 FTS	<1.9		1.9	0.23	ng/L		10/15/20 13:44	10/17/20 02:27	1
6:2 FTS	<4.8		4.8	2.4	ng/L		10/15/20 13:44	10/17/20 02:27	1
8:2 FTS	<1.9		1.9	0.44	ng/L		10/15/20 13:44	10/17/20 02:27	1
10:2 FTS	<1.9		1.9	0.64	ng/L		10/15/20 13:44	10/17/20 02:27	1
DONA	<1.9		1.9	0.38	ng/L		10/15/20 13:44	10/17/20 02:27	1
HFPO-DA (GenX)	<3.8		3.8	1.4	ng/L		10/15/20 13:44	10/17/20 02:27	1
F-53B Major	<1.9		1.9	0.23	ng/L		10/15/20 13:44	10/17/20 02:27	1
F-53B Minor	<1.9		1.9	0.30	ng/L		10/15/20 13:44	10/17/20 02:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*99*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C5 PFPeA	*101*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C2 PFHxA	*95*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C4 PFHpA	*95*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C4 PFOA	*100*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C5 PFNA	*99*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*
13C2 PFDA	*97*		*25 - 150*	*10/15/20 13:44*	*10/17/20 02:27*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: Field Blank-10-10-2020

Date Collected: 10/10/20 18:00
Date Received: 10/13/20 10:00

Lab Sample ID: 320-65555-12

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFUnA	98		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C2 PFDoA	100		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C2 PFTeDA	88		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C2 PFHxDA	92		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C3 PFBS	101		25 - 150	10/15/20 13:44	10/17/20 02:27	1
18O2 PFHxS	104		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C4 PFOS	108		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C8 FOSA	99		25 - 150	10/15/20 13:44	10/17/20 02:27	1
d3-NMeFOSAA	102		25 - 150	10/15/20 13:44	10/17/20 02:27	1
d5-NEtFOSAA	103		25 - 150	10/15/20 13:44	10/17/20 02:27	1
d-N-MeFOSA-M	75		20 - 150	10/15/20 13:44	10/17/20 02:27	1
d-N-EtFOSA-M	66		20 - 150	10/15/20 13:44	10/17/20 02:27	1
d7-N-MeFOSE-M	42		10 - 120	10/15/20 13:44	10/17/20 02:27	1
d9-N-EtFOSE-M	36		10 - 120	10/15/20 13:44	10/17/20 02:27	1
M2-4:2 FTS	107		25 - 150	10/15/20 13:44	10/17/20 02:27	1
M2-6:2 FTS	112		25 - 150	10/15/20 13:44	10/17/20 02:27	1
M2-8:2 FTS	106		25 - 150	10/15/20 13:44	10/17/20 02:27	1
13C3 HFPO-DA	95		25 - 150	10/15/20 13:44	10/17/20 02:27	1

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Method: 537 (modified) - Fluorinated Alkyl Substances

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-65555-1	GW-U01-10102020	66	59	66	71	68	69	64	60
320-65555-2	GW-U02-10102020	78	76	79	83	83	84	80	81
320-65555-2 - DL	GW-U02-10102020								
320-65555-3	GW-U03-10102020	60	64	65	61	70	66	67	55
320-65555-3 - DL	GW-U03-10102020								
320-65555-4	GW-U04-10102020						138	138	133
320-65555-4 - DL	GW-U04-10102020	61	60	58	57	59			
320-65555-5	GW-U05-10102020	82	81	79	83	86	85	86	77
320-65555-5 MS	GW-U05-10102020	85	81	79	80	82	80	83	86
320-65555-5 MSD	GW-U05-10102020	67	66	65	66	66	69	68	62
320-65555-6	GW-U06-10102020	97	79	110	113	110	108	110	105
320-65555-7	GW-U07-10102020	55	53	61	62	63	65	61	51
320-65555-7 - DL	GW-U07-10102020								
320-65555-8	GW-U08-10102020	93	92	104	108	109	112	105	99
320-65555-9	GW-U09-10102020	127	117	128	132	133	133	120	124
320-65555-10	GW-U10-10102020	69	72	81	86	87	87	82	71
320-65555-11	DUP-03-10102020	79	83	87	89	89	92	85	80
320-65555-11 - DL	DUP-03-10102020								
320-65555-12	Field Blank-10-10-2020	99	101	95	95	100	99	97	98
LCS 320-422136/2-A	Lab Control Sample	75	75	77	74	76	78	73	71
MB 320-422136/1-A	Method Blank	99	99	97	96	102	95	99	93

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	PFHxDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)
320-65555-1	GW-U01-10102020	56	50	40	70	71	73	61	57
320-65555-2	GW-U02-10102020	60	71	62	74	76	79	81	78
320-65555-2 - DL	GW-U02-10102020								
320-65555-3	GW-U03-10102020	53	47	26	67	58	53	53	67
320-65555-3 - DL	GW-U03-10102020								
320-65555-4	GW-U04-10102020	115	89	62	141	142	152 *5	133	109
320-65555-4 - DL	GW-U04-10102020								
320-65555-5	GW-U05-10102020	76	62	41	75	78	78	79	79
320-65555-5 MS	GW-U05-10102020	71	52	48	76	76	75	76	79
320-65555-5 MSD	GW-U05-10102020	64	53	35	64	66	63	64	63
320-65555-6	GW-U06-10102020	84	93	88	102	108	111	99	88
320-65555-7	GW-U07-10102020	57	54	53	59	62	64	60	62
320-65555-7 - DL	GW-U07-10102020								
320-65555-8	GW-U08-10102020	86	66	35	101	104	108	107	78
320-65555-9	GW-U09-10102020	109	100	98	123	128	126	128	108
320-65555-10	GW-U10-10102020	65	47	50	80	83	84	82	90
320-65555-11	DUP-03-10102020	72	76	62	84	82	88	88	87
320-65555-11 - DL	DUP-03-10102020								
320-65555-12	Field Blank-10-10-2020	100	88	92	101	104	108	99	102
LCS 320-422136/2-A	Lab Control Sample	73	76	73	82	81	82	75	78
MB 320-422136/1-A	Method Blank	93	94	96	105	103	107	96	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65555-1	GW-U01-10102020	66	62	55	35	31	88	100	93

Isotope Dilution Summary

Client: ARCADIS U.S., Inc. Job ID: 320-65555-1
Project/Site: Marinette 30015296.00009

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

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	d5NEFOS (25-150)	dMeFOSA (20-150)	dEtFOSA (20-150)	NMFM (10-120)	NEFM (10-120)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)
320-65555-2	GW-U02-10102020	85	59	48	37	36	101		141
320-65555-2 - DL	GW-U02-10102020							102	
320-65555-3	GW-U03-10102020	58	34	33	23	28	64		75
320-65555-3 - DL	GW-U03-10102020							107	
320-65555-4	GW-U04-10102020	122	97	85	69	58	135		
320-65555-4 - DL	GW-U04-10102020							177 *5	63
320-65555-5	GW-U05-10102020	84	62	44	29	29	83	104	106
320-65555-5 MS	GW-U05-10102020	86	57	48	41	33	81	97	95
320-65555-5 MSD	GW-U05-10102020	73	52	38	35	29	66	76	78
320-65555-6	GW-U06-10102020	87	75	66	61	53	141	154 *5	207 *5
320-65555-7	GW-U07-10102020	65	42	34	25	20	67		73
320-65555-7 - DL	GW-U07-10102020							61	
320-65555-8	GW-U08-10102020	85	49	47	37	34	121	134	138
320-65555-9	GW-U09-10102020	119	79	61	46	39	153 *5	170 *5	165 *5
320-65555-10	GW-U10-10102020	95	56	42	44	34	108	137	158 *5
320-65555-11	DUP-03-10102020	89	67	57	52	44	121		169 *5
320-65555-11 - DL	DUP-03-10102020							120	
320-65555-12	Field Blank-10-10-2020	103	75	66	42	36	107	112	106
LCS 320-422136/2-A	Lab Control Sample	83	63	45	23	18	80	81	83
MB 320-422136/1-A	Method Blank	106	79	59	31	24	111	113	108

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	HFPODA (25-150)
320-65555-1	GW-U01-10102020	71
320-65555-2	GW-U02-10102020	79
320-65555-2 - DL	GW-U02-10102020	
320-65555-3	GW-U03-10102020	67
320-65555-3 - DL	GW-U03-10102020	
320-65555-4	GW-U04-10102020	150
320-65555-4 - DL	GW-U04-10102020	
320-65555-5	GW-U05-10102020	80
320-65555-5 MS	GW-U05-10102020	77
320-65555-5 MSD	GW-U05-10102020	69
320-65555-6	GW-U06-10102020	116
320-65555-7	GW-U07-10102020	63
320-65555-7 - DL	GW-U07-10102020	
320-65555-8	GW-U08-10102020	106
320-65555-9	GW-U09-10102020	130
320-65555-10	GW-U10-10102020	83
320-65555-11	DUP-03-10102020	87
320-65555-11 - DL	DUP-03-10102020	
320-65555-12	Field Blank-10-10-2020	95
LCS 320-422136/2-A	Lab Control Sample	74
MB 320-422136/1-A	Method Blank	94

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA

Isotope Dilution Summary

Client: ARCADIS U.S., Inc.
Job ID: 320-65555-1
Project/Site: Marinette 30015296.00009

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
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

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-422136/1-A
Matrix: Water
Analysis Batch: 422646

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422136

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<5.0		5.0	2.4	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0	0.49	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0	0.58	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0	0.25	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0	0.85	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorononanoic acid (PFNA)	<2.0		2.0	0.27	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0	0.31	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0	1.1	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0	0.55	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0	1.3	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0	0.73	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	<2.0		2.0	0.89	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoro-n-octadecanoic acid (PFODA)	<2.0		2.0	0.94	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0	0.20	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0	0.30	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0	0.57	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0	0.19	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0	0.54	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0	0.37	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0	0.32	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorododecanesulfonic acid (PFDoS)	<2.0		2.0	0.97	ng/L		10/15/20 13:38	10/16/20 23:52	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0	0.98	ng/L		10/15/20 13:38	10/16/20 23:52	1
NEtFOSA	<2.0		2.0	0.87	ng/L		10/15/20 13:38	10/16/20 23:52	1
NMeFOSA	<2.0		2.0	0.43	ng/L		10/15/20 13:38	10/16/20 23:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0	1.2	ng/L		10/15/20 13:38	10/16/20 23:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0	1.3	ng/L		10/15/20 13:38	10/16/20 23:52	1
NMeFOSE	<4.0		4.0	1.4	ng/L		10/15/20 13:38	10/16/20 23:52	1
NEtFOSE	<2.0		2.0	0.85	ng/L		10/15/20 13:38	10/16/20 23:52	1
4:2 FTS	<2.0		2.0	0.24	ng/L		10/15/20 13:38	10/16/20 23:52	1
6:2 FTS	<5.0		5.0	2.5	ng/L		10/15/20 13:38	10/16/20 23:52	1
8:2 FTS	<2.0		2.0	0.46	ng/L		10/15/20 13:38	10/16/20 23:52	1
10:2 FTS	<2.0		2.0	0.67	ng/L		10/15/20 13:38	10/16/20 23:52	1
DONA	<2.0		2.0	0.40	ng/L		10/15/20 13:38	10/16/20 23:52	1
HFPO-DA (GenX)	<4.0		4.0	1.5	ng/L		10/15/20 13:38	10/16/20 23:52	1
F-53B Major	<2.0		2.0	0.24	ng/L		10/15/20 13:38	10/16/20 23:52	1
F-53B Minor	<2.0		2.0	0.32	ng/L		10/15/20 13:38	10/16/20 23:52	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*99*		*25 - 150*	*10/15/20 13:38*	*10/16/20 23:52*	*1*
13C5 PFPeA	*99*		*25 - 150*	*10/15/20 13:38*	*10/16/20 23:52*	*1*
13C2 PFHxA	*97*		*25 - 150*	*10/15/20 13:38*	*10/16/20 23:52*	*1*
13C4 PFHpA	*96*		*25 - 150*	*10/15/20 13:38*	*10/16/20 23:52*	*1*
13C4 PFOA	*102*		*25 - 150*	*10/15/20 13:38*	*10/16/20 23:52*	*1*

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

Lab Sample ID: MB 320-422136/1-A
Matrix: Water
Analysis Batch: 422646

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 422136

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	95		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C2 PFDA	99		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C2 PFUnA	93		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C2 PFDoA	93		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C2 PFTeDA	94		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C2 PFHxDA	96		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C3 PFBS	105		25 - 150	10/15/20 13:38	10/16/20 23:52	1
18O2 PFHxS	103		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C4 PFOS	107		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C8 FOSA	96		25 - 150	10/15/20 13:38	10/16/20 23:52	1
d3-NMeFOSAA	101		25 - 150	10/15/20 13:38	10/16/20 23:52	1
d5-NEtFOSAA	106		25 - 150	10/15/20 13:38	10/16/20 23:52	1
d-N-MeFOSA-M	79		20 - 150	10/15/20 13:38	10/16/20 23:52	1
d-N-EtFOSA-M	59		20 - 150	10/15/20 13:38	10/16/20 23:52	1
d7-N-MeFOSE-M	31		10 - 120	10/15/20 13:38	10/16/20 23:52	1
d9-N-EtFOSE-M	24		10 - 120	10/15/20 13:38	10/16/20 23:52	1
M2-4:2 FTS	111		25 - 150	10/15/20 13:38	10/16/20 23:52	1
M2-6:2 FTS	113		25 - 150	10/15/20 13:38	10/16/20 23:52	1
M2-8:2 FTS	108		25 - 150	10/15/20 13:38	10/16/20 23:52	1
13C3 HFPO-DA	94		25 - 150	10/15/20 13:38	10/16/20 23:52	1

Lab Sample ID: LCS 320-422136/2-A
Matrix: Water
Analysis Batch: 422646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.5		ng/L		104	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	37.6		ng/L		94	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	39.5		ng/L		99	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	40.3		ng/L		101	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	38.8		ng/L		97	70 - 130
Perfluorononanoic acid (PFNA)	40.0	40.3		ng/L		101	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	41.9		ng/L		105	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	40.9		ng/L		102	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	42.2		ng/L		106	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.1		ng/L		113	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	38.6		ng/L		97	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	40.0	42.0		ng/L		105	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	40.0	37.8		ng/L		95	58 - 145
Perfluorobutanesulfonic acid (PFBS)	35.4	35.7		ng/L		101	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	37.5	37.8		ng/L		101	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.1		ng/L		96	59 - 119

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

Lab Sample ID: LCS 320-422136/2-A
Matrix: Water
Analysis Batch: 422646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.2		ng/L		106	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	37.1		ng/L		100	70 - 130
Perfluorononanesulfonic acid (PFNS)	38.4	38.9		ng/L		101	75 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	37.3		ng/L		97	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	38.7	36.0		ng/L		93	67 - 127
Perfluorooctanesulfonamide (FOSA)	40.0	41.1		ng/L		103	73 - 133
NMeFOSA	40.0	35.4		ng/L		89	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.9		ng/L		107	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	36.8		ng/L		92	76 - 136
NMeFOSE	40.0	40.0		ng/L		100	70 - 130
NEtFOSE	40.0	35.4		ng/L		89	71 - 131
4:2 FTS	37.4	39.5		ng/L		106	79 - 139
6:2 FTS	37.9	32.3		ng/L		85	59 - 175
8:2 FTS	38.3	38.7		ng/L		101	75 - 135
10:2 FTS	38.6	38.3		ng/L		99	64 - 142
DONA	37.7	36.6		ng/L		97	79 - 139
HFPO-DA (GenX)	40.0	41.8		ng/L		104	51 - 173
F-53B Major	37.3	35.6		ng/L		96	75 - 135
F-53B Minor	37.7	35.1		ng/L		93	54 - 114

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*75*		*25 - 150*
13C5 PFPeA	*75*		*25 - 150*
13C2 PFHxA	*77*		*25 - 150*
13C4 PFHpA	*74*		*25 - 150*
13C4 PFOA	*76*		*25 - 150*
13C5 PFNA	*78*		*25 - 150*
13C2 PFDA	*73*		*25 - 150*
13C2 PFUnA	*71*		*25 - 150*
13C2 PFDoA	*73*		*25 - 150*
13C2 PFTeDA	*76*		*25 - 150*
13C2 PFHxDA	*73*		*25 - 150*
13C3 PFBS	*82*		*25 - 150*
18O2 PFHxS	*81*		*25 - 150*
13C4 PFOS	*82*		*25 - 150*
13C8 FOSA	*75*		*25 - 150*
d3-NMeFOSAA	*78*		*25 - 150*
d5-NEtFOSAA	*83*		*25 - 150*
d-N-MeFOSA-M	*63*		*20 - 150*
d-N-EtFOSA-M	*45*		*20 - 150*
d7-N-MeFOSE-M	*23*		*10 - 120*
d9-N-EtFOSE-M	*18*		*10 - 120*
M2-4:2 FTS	*80*		*25 - 150*

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

Lab Sample ID: LCS 320-422136/2-A
Matrix: Water
Analysis Batch: 422646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 422136

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	81		25 - 150
M2-8:2 FTS	83		25 - 150
13C3 HFPO-DA	74		25 - 150

Lab Sample ID: 320-65555-5 MS
Matrix: Water
Analysis Batch: 423966

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	13	J	38.6	48.1		ng/L		125	76 - 136
Perfluoropentanoic acid (PFPeA)	7.8	J	38.6	43.8		ng/L		93	71 - 131
Perfluorohexanoic acid (PFHxA)	6.9	J	38.6	45.6		ng/L		100	73 - 133
Perfluoroheptanoic acid (PFHpA)	5.4	J	38.6	42.9		ng/L		97	72 - 132
Perfluorooctanoic acid (PFOA)	13		38.6	48.0		ng/L		90	70 - 130
Perfluorononanoic acid (PFNA)	<11		38.6	41.9		ng/L		109	75 - 135
Perfluorodecanoic acid (PFDA)	<11		38.6	36.7		ng/L		95	76 - 136
Perfluoroundecanoic acid (PFUnA)	<11	F2	38.6	33.1		ng/L		86	68 - 128
Perfluorododecanoic acid (PFDoA)	<11		38.6	47.0		ng/L		122	71 - 131
Perfluorotridecanoic acid (PFTriA)	<11		38.6	32.8		ng/L		85	71 - 131
Perfluorotetradecanoic acid (PFTeA)	<11		38.6	48.2		ng/L		125	70 - 130
Perfluoro-n-hexadecanoic acid (PFHxDA)	<11		38.6	29.6		ng/L		77	76 - 136
Perfluoro-n-octadecanoic acid (PFODA)	<11		38.6	35.5		ng/L		92	58 - 145
Perfluorobutanesulfonic acid (PFBS)	1.6	J	34.1	36.9		ng/L		103	67 - 127
Perfluoropentanesulfonic acid (PFPeS)	<11		36.2	37.1		ng/L		102	66 - 126
Perfluorohexanesulfonic acid (PFHxS)	<11		35.1	34.9		ng/L		99	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	<11		36.7	38.2		ng/L		104	76 - 136
Perfluorooctanesulfonic acid (PFOS)	<11		35.8	34.8		ng/L		97	70 - 130
Perfluorononanesulfonic acid (PFNS)	<11		37.0	36.1		ng/L		97	75 - 135
Perfluorodecanesulfonic acid (PFDS)	<11		37.2	33.5		ng/L		90	71 - 131
Perfluorododecanesulfonic acid (PFDoS)	<11		37.3	31.0		ng/L		83	67 - 127
Perfluorooctanesulfonamide (FOSA)	<11		38.6	40.5		ng/L		105	73 - 133
NMeFOSA	<11		38.6	39.5		ng/L		102	67 - 154
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<27		38.6	39.3		ng/L		102	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<27		38.6	40.4		ng/L		105	76 - 136
NMeFOSE	<22		38.6	32.6		ng/L		84	70 - 130
NEtFOSE	<11		38.6	41.5		ng/L		108	71 - 131

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

Lab Sample ID: 320-65555-5 MS
Matrix: Water
Analysis Batch: 423966

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	<11		36.0	38.1		ng/L		106	79 - 139
6:2 FTS	<27		36.6	36.2		ng/L		99	59 - 175
8:2 FTS	<11		37.0	38.2		ng/L		103	75 - 135
10:2 FTS	<11		37.2	39.7		ng/L		107	64 - 142
DONA	<11		36.3	39.8		ng/L		109	79 - 139
HFPO-DA (GenX)	<22		38.6	42.2		ng/L		109	51 - 173
F-53B Major	<11		36.0	36.7		ng/L		102	75 - 135
F-53B Minor	<11		36.3	35.0		ng/L		96	54 - 114

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*85*		*25 - 150*
13C5 PFPeA	*81*		*25 - 150*
13C2 PFHxA	*79*		*25 - 150*
13C4 PFHpA	*80*		*25 - 150*
13C4 PFOA	*82*		*25 - 150*
13C5 PFNA	*80*		*25 - 150*
13C2 PFDA	*83*		*25 - 150*
13C2 PFUnA	*86*		*25 - 150*
13C2 PFDoA	*71*		*25 - 150*
13C2 PFTeDA	*52*		*25 - 150*
13C2 PFHxDA	*48*		*25 - 150*
13C3 PFBS	*76*		*25 - 150*
18O2 PFHxS	*76*		*25 - 150*
13C4 PFOS	*75*		*25 - 150*
13C8 FOSA	*76*		*25 - 150*
d3-NMeFOSAA	*79*		*25 - 150*
d5-NEtFOSAA	*86*		*25 - 150*
d-N-MeFOSA-M	*57*		*20 - 150*
d-N-EtFOSA-M	*48*		*20 - 150*
d7-N-MeFOSE-M	*41*		*10 - 120*
d9-N-EtFOSE-M	*33*		*10 - 120*
M2-4:2 FTS	*81*		*25 - 150*
M2-6:2 FTS	*97*		*25 - 150*
M2-8:2 FTS	*95*		*25 - 150*
13C3 HFPO-DA	*77*		*25 - 150*

Lab Sample ID: 320-65555-5 MSD
Matrix: Water
Analysis Batch: 423966

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	13	J	41.1	53.4		ng/L		130	76 - 136	10	30
Perfluoropentanoic acid (PFPeA)	7.8	J	41.1	46.5		ng/L		94	71 - 131	6	30
Perfluorohexanoic acid (PFHxA)	6.9	J	41.1	49.3		ng/L		103	73 - 133	8	30
Perfluoroheptanoic acid (PFHpA)	5.4	J	41.1	46.6		ng/L		100	72 - 132	8	30
Perfluorooctanoic acid (PFOA)	13		41.1	54.6		ng/L		101	70 - 130	13	30
Perfluorononanoic acid (PFNA)	<11		41.1	42.7		ng/L		104	75 - 135	2	30
Perfluorodecanoic acid (PFDA)	<11		41.1	44.2		ng/L		108	76 - 136	18	30

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

Lab Sample ID: 320-65555-5 MSD
Matrix: Water
Analysis Batch: 423966

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA
Prep Batch: 422136

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroundecanoic acid (PFUnA)	<11	F2	41.1	46.0	F2	ng/L		112	68 - 128	33	30
Perfluorododecanoic acid (PFDoA)	<11		41.1	40.8		ng/L		99	71 - 131	14	30
Perfluorotridecanoic acid (PFTriA)	<11		41.1	42.0		ng/L		102	71 - 131	25	30
Perfluorotetradecanoic acid (PFTeA)	<11		41.1	41.1		ng/L		100	70 - 130	16	30
Perfluoro-n-hexadecanoic acid (PFHxDA)	<11		41.1	39.4		ng/L		96	76 - 136	29	30
Perfluoro-n-octadecanoic acid (PFODA)	<11		41.1	39.3		ng/L		96	58 - 145	10	30
Perfluorobutanesulfonic acid (PFBS)	1.6	J	36.3	38.7		ng/L		102	67 - 127	5	30
Perfluoropentanesulfonic acid (PFPeS)	<11		38.5	39.4		ng/L		102	66 - 126	6	30
Perfluorohexanesulfonic acid (PFHxS)	<11		37.4	38.9		ng/L		104	59 - 119	11	30
Perfluoroheptanesulfonic Acid (PFHpS)	<11		39.1	42.3		ng/L		108	76 - 136	10	30
Perfluorooctanesulfonic acid (PFOS)	<11		38.1	46.0		ng/L		121	70 - 130	28	30
Perfluorononanesulfonic acid (PFNS)	<11		39.4	37.3		ng/L		95	75 - 135	3	30
Perfluorodecanesulfonic acid (PFDS)	<11		39.6	39.9		ng/L		101	71 - 131	17	30
Perfluorododecanesulfonic acid (PFDoS)	<11		39.8	35.3		ng/L		89	67 - 127	13	30
Perfluorooctanesulfonamide (FOSA)	<11		41.1	43.3		ng/L		105	73 - 133	7	30
NMeFOSA	<11		41.1	44.4		ng/L		108	67 - 154	12	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<27		41.1	46.1		ng/L		112	76 - 136	16	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<27		41.1	42.7		ng/L		104	76 - 136	6	30
NMeFOSE	<22		41.1	42.9		ng/L		104	70 - 130	27	30
NEtFOSE	<11		41.1	39.8		ng/L		97	71 - 131	4	30
4:2 FTS	<11		38.4	39.2		ng/L		102	79 - 139	3	30
6:2 FTS	<27		38.9	41.1		ng/L		106	59 - 175	13	30
8:2 FTS	<11		39.3	45.1		ng/L		115	75 - 135	17	30
10:2 FTS	<11		39.6	44.2		ng/L		112	64 - 142	11	30
DONA	<11		38.7	40.6		ng/L		105	79 - 139	2	30
HFPO-DA (GenX)	<22		41.1	40.3		ng/L		98	51 - 173	5	30
F-53B Major	<11		38.3	40.0		ng/L		104	75 - 135	8	30
F-53B Minor	<11		38.7	35.2		ng/L		91	54 - 114	1	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*67*		*25 - 150*
13C5 PFPeA	*66*		*25 - 150*
13C2 PFHxA	*65*		*25 - 150*
13C4 PFHpA	*66*		*25 - 150*
13C4 PFOA	*66*		*25 - 150*
13C5 PFNA	*69*		*25 - 150*

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

Lab Sample ID: 320-65555-5 MSD
Matrix: Water
Analysis Batch: 423966

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA
Prep Batch: 422136

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C2 PFDA	*68*		*25 - 150*
13C2 PFUnA	*62*		*25 - 150*
13C2 PFDoA	*64*		*25 - 150*
13C2 PFTeDA	*53*		*25 - 150*
13C2 PFHxDA	*35*		*25 - 150*
13C3 PFBS	*64*		*25 - 150*
18O2 PFHxS	*66*		*25 - 150*
13C4 PFOS	*63*		*25 - 150*
13C8 FOSA	*64*		*25 - 150*
d3-NMeFOSAA	*63*		*25 - 150*
d5-NEtFOSAA	*73*		*25 - 150*
d-N-MeFOSA-M	*52*		*20 - 150*
d-N-EtFOSA-M	*38*		*20 - 150*
d7-N-MeFOSE-M	*35*		*10 - 120*
d9-N-EtFOSE-M	*29*		*10 - 120*
M2-4:2 FTS	*66*		*25 - 150*
M2-6:2 FTS	*76*		*25 - 150*
M2-8:2 FTS	*78*		*25 - 150*
13C3 HFPO-DA	*69*		*25 - 150*

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-566813/1
Matrix: Water
Analysis Batch: 566813

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			10/15/20 16:35	1

Lab Sample ID: LCS 500-566813/2
Matrix: Water
Analysis Batch: 566813

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	183		mg/L		91	80 - 120

Lab Sample ID: MB 500-566818/1
Matrix: Water
Analysis Batch: 566818

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	1.9	mg/L			10/15/20 17:25	1

Lab Sample ID: LCS 500-566818/2
Matrix: Water
Analysis Batch: 566818

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	186		mg/L		93	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 320-65555-5 MS
Matrix: Water
Analysis Batch: 566818

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids	810	F2 F1	1000	1670		mg/L		86	75 - 125		

Lab Sample ID: 320-65555-5 MSD
Matrix: Water
Analysis Batch: 566818

Client Sample ID: GW-U05-10102020
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Suspended Solids	810	F2 F1	1000	2180	F1 F2	mg/L		137	75 - 125	26	20

LCMS

Prep Batch: 422136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-1	GW-U01-10102020	Total/NA	Water	3535	
320-65555-2	GW-U02-10102020	Total/NA	Water	3535	
320-65555-2 - DL	GW-U02-10102020	Total/NA	Water	3535	
320-65555-3	GW-U03-10102020	Total/NA	Water	3535	
320-65555-3 - DL	GW-U03-10102020	Total/NA	Water	3535	
320-65555-4	GW-U04-10102020	Total/NA	Water	3535	
320-65555-4 - DL	GW-U04-10102020	Total/NA	Water	3535	
320-65555-5	GW-U05-10102020	Total/NA	Water	3535	
320-65555-6	GW-U06-10102020	Total/NA	Water	3535	
320-65555-7 - DL	GW-U07-10102020	Total/NA	Water	3535	
320-65555-7	GW-U07-10102020	Total/NA	Water	3535	
320-65555-8	GW-U08-10102020	Total/NA	Water	3535	
320-65555-9	GW-U09-10102020	Total/NA	Water	3535	
320-65555-10	GW-U10-10102020	Total/NA	Water	3535	
320-65555-11	DUP-03-10102020	Total/NA	Water	3535	
320-65555-11 - DL	DUP-03-10102020	Total/NA	Water	3535	
320-65555-12	Field Blank-10-10-2020	Total/NA	Water	3535	
MB 320-422136/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-422136/2-A	Lab Control Sample	Total/NA	Water	3535	
320-65555-5 MS	GW-U05-10102020	Total/NA	Water	3535	
320-65555-5 MSD	GW-U05-10102020	Total/NA	Water	3535	

Analysis Batch: 422646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-1	GW-U01-10102020	Total/NA	Water	537 (modified)	422136
320-65555-2	GW-U02-10102020	Total/NA	Water	537 (modified)	422136
320-65555-4	GW-U04-10102020	Total/NA	Water	537 (modified)	422136
320-65555-6	GW-U06-10102020	Total/NA	Water	537 (modified)	422136
320-65555-7	GW-U07-10102020	Total/NA	Water	537 (modified)	422136
320-65555-8	GW-U08-10102020	Total/NA	Water	537 (modified)	422136
320-65555-9	GW-U09-10102020	Total/NA	Water	537 (modified)	422136
320-65555-10	GW-U10-10102020	Total/NA	Water	537 (modified)	422136
320-65555-11	DUP-03-10102020	Total/NA	Water	537 (modified)	422136
320-65555-12	Field Blank-10-10-2020	Total/NA	Water	537 (modified)	422136
MB 320-422136/1-A	Method Blank	Total/NA	Water	537 (modified)	422136
LCS 320-422136/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	422136

Analysis Batch: 422968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-2 - DL	GW-U02-10102020	Total/NA	Water	537 (modified)	422136
320-65555-4 - DL	GW-U04-10102020	Total/NA	Water	537 (modified)	422136
320-65555-7 - DL	GW-U07-10102020	Total/NA	Water	537 (modified)	422136
320-65555-11 - DL	DUP-03-10102020	Total/NA	Water	537 (modified)	422136

Analysis Batch: 423966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-3	GW-U03-10102020	Total/NA	Water	537 (modified)	422136
320-65555-5	GW-U05-10102020	Total/NA	Water	537 (modified)	422136
320-65555-5 MS	GW-U05-10102020	Total/NA	Water	537 (modified)	422136
320-65555-5 MSD	GW-U05-10102020	Total/NA	Water	537 (modified)	422136

LCMS

Cleanup Batch: 424469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-3 - DL	GW-U03-10102020	Total/NA	Water	Dilution	422136

Analysis Batch: 424513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-3 - DL	GW-U03-10102020	Total/NA	Water	537 (modified)	424469

General Chemistry

Analysis Batch: 566813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-11	DUP-03-10102020	Total/NA	Water	SM 2540D	
MB 500-566813/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-566813/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 566818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-65555-2	GW-U02-10102020	Total/NA	Water	SM 2540D	
320-65555-3	GW-U03-10102020	Total/NA	Water	SM 2540D	
320-65555-4	GW-U04-10102020	Total/NA	Water	SM 2540D	
320-65555-5	GW-U05-10102020	Total/NA	Water	SM 2540D	
320-65555-6	GW-U06-10102020	Total/NA	Water	SM 2540D	
320-65555-7	GW-U07-10102020	Total/NA	Water	SM 2540D	
320-65555-8	GW-U08-10102020	Total/NA	Water	SM 2540D	
320-65555-9	GW-U09-10102020	Total/NA	Water	SM 2540D	
320-65555-10	GW-U10-10102020	Total/NA	Water	SM 2540D	
MB 500-566818/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-566818/2	Lab Control Sample	Total/NA	Water	SM 2540D	
320-65555-5 MS	GW-U05-10102020	Total/NA	Water	SM 2540D	
320-65555-5 MSD	GW-U05-10102020	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Client Sample ID: GW-U01-10102020

Lab Sample ID: 320-65555-1

Date Collected: 10/10/20 14:30

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			134.2 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 00:10	RS1	TAL SAC

Client Sample ID: GW-U02-10102020

Lab Sample ID: 320-65555-2

Date Collected: 10/10/20 14:40

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.3 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 00:19	RS1	TAL SAC
Total/NA	Prep	3535	DL		255.3 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422968	10/17/20 19:37	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	30 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:29		
								(End) 10/15/20 17:30		

Client Sample ID: GW-U03-10102020

Lab Sample ID: 320-65555-3

Date Collected: 10/10/20 14:55

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			288.5 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		100			423966	10/20/20 15:46	S1M	TAL SAC
Total/NA	Prep	3535	DL		288.5 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Cleanup	Dilution	DL		3 uL	1500 uL	424469	10/22/20 14:31	PD	TAL SAC
Total/NA	Analysis	537 (modified)	DL	1			424513	10/22/20 20:00	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:30		
								(End) 10/15/20 17:31		

Client Sample ID: GW-U04-10102020

Lab Sample ID: 320-65555-4

Date Collected: 10/10/20 15:05

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			231 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 00:37	RS1	TAL SAC
Total/NA	Prep	3535	DL		231 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	100			422968	10/17/20 21:27	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	1 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:31		
								(End) 10/15/20 17:32		

Client Sample ID: GW-U05-10102020

Lab Sample ID: 320-65555-5

Date Collected: 10/10/20 16:00

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			228.9 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		5			423966	10/20/20 15:56	S1M	TAL SAC
Total/NA	Analysis	SM 2540D		1	10 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:32		
								(End) 10/15/20 17:33		

Client Sample ID: GW-U06-10102020

Lab Sample ID: 320-65555-6

Date Collected: 10/10/20 16:20

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			287.5 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 01:14	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	20 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:35		
								(End) 10/15/20 17:36		

Client Sample ID: GW-U07-10102020

Lab Sample ID: 320-65555-7

Date Collected: 10/10/20 16:30

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			273.4 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 01:41	RS1	TAL SAC
Total/NA	Prep	3535	DL		273.4 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422968	10/17/20 20:23	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	10 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:36		
								(End) 10/15/20 17:37		

Client Sample ID: GW-U08-10102020

Lab Sample ID: 320-65555-8

Date Collected: 10/10/20 16:45

Matrix: Water

Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			269.4 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 01:50	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	10 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:37		
								(End) 10/15/20 17:38		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 320-65555-1
Project/Site: Marinette 30015296.00009

Client Sample ID: GW-U09-10102020
Lab Sample ID: 320-65555-9
Date Collected: 10/10/20 17:00
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			244.6 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 02:00	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	5 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:38		
								(End) 10/15/20 17:39		

Client Sample ID: GW-U10-10102020
Lab Sample ID: 320-65555-10
Date Collected: 10/10/20 17:20
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.2 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 02:09	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	5 mL	200 mL	566818		SMO	TAL CHI
								(Start) 10/15/20 17:39		
								(End) 10/15/20 17:40		

Client Sample ID: DUP-03-10102020
Lab Sample ID: 320-65555-11
Date Collected: 10/10/20 00:00
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.9 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 02:18	RS1	TAL SAC
Total/NA	Prep	3535	DL		265.9 mL	10.00 mL	422136	10/15/20 13:38	LA	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			422968	10/17/20 20:32	RS1	TAL SAC
Total/NA	Analysis	SM 2540D		1	50 mL	200 mL	566813		SMO	TAL CHI
								(Start) 10/15/20 16:54		
								(End) 10/15/20 16:55		

Client Sample ID: Field Blank-10-10-2020
Lab Sample ID: 320-65555-12
Date Collected: 10/10/20 18:00
Matrix: Water
Date Received: 10/13/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.3 mL	10.00 mL	422136	10/15/20 13:44	LA	TAL SAC
Total/NA	Analysis	537 (modified)		1			422646	10/17/20 02:27	RS1	TAL SAC

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 320-65555-1
Project/Site: Marinette 30015296.00009

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	08-03-23
Nevada	State	CA000442021-1	07-31-21
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-20
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
Dilution	Dilution and Re-fortification of Standards	None	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Marinette 30015296.00009

Job ID: 320-65555-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-65555-1	GW-U01-10102020	Water	10/10/20 14:30	10/13/20 10:00	
320-65555-2	GW-U02-10102020	Water	10/10/20 14:40	10/13/20 10:00	
320-65555-3	GW-U03-10102020	Water	10/10/20 14:55	10/13/20 10:00	
320-65555-4	GW-U04-10102020	Water	10/10/20 15:05	10/13/20 10:00	
320-65555-5	GW-U05-10102020	Water	10/10/20 16:00	10/13/20 10:00	
320-65555-6	GW-U06-10102020	Water	10/10/20 16:20	10/13/20 10:00	
320-65555-7	GW-U07-10102020	Water	10/10/20 16:30	10/13/20 10:00	
320-65555-8	GW-U08-10102020	Water	10/10/20 16:45	10/13/20 10:00	
320-65555-9	GW-U09-10102020	Water	10/10/20 17:00	10/13/20 10:00	
320-65555-10	GW-U10-10102020	Water	10/10/20 17:20	10/13/20 10:00	
320-65555-11	DUP-03-10102020	Water	10/10/20 00:00	10/13/20 10:00	
320-65555-12	Field Blank-10-10-2020	Water	10/10/20 18:00	10/13/20 10:00	

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Amy Siefker	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-85814-38797.7
Client Contact: Elizabeth Hover	Phone:	E-Mail: sandra.fredrick@eurofinset.com		Page: Page 1 of 2
Company: ARCADIS U.S., Inc.				Job #:

Address: 126 North Jefferson Street Suite 400	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Milwaukee	TAT Requested (days): Standard		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: WI, 53202	PO #: 30015296.00009		
Phone:	WO #:		Other:
Email: Elizabeth.Hover@arcadis.com	Project #: 50017363		
Project Name: Marinette 30015296.00009	SSOW#:		
Site: Marinette, WI			

320-65555 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D - TSS	PFC_IDA - PFAS, Extended List (36 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		N	N	N	N		
GW-U01-10102020	10/10/20	1430	G	Water	N	N		X		Limited volume
GW-U02-10102020		1440		Water			X			
GW-U03-10102020		1455		Water						
GW-U04-10102020		1505		Water						
GW-U05-10102020		1600		Water						
GW-U06-10102020		1620		Water		N				MS/MSD
GW-U07-10102020		1630		Water						
GW-U08-10102020		1645		Water						
GW-U09-10102020		1700		Water						
GW-U10-10102020		1720		Water						
DUP-03-10102020		—		Water						Duplicate

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Amy Siefker	10/12/20 / 1200	Arcadis		10/13/20 1000	eta Sac
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:
	991377, 991376, 991375, 991374	1.4, 1.1, 2.0, 3.1

Ver: 01/16/2019

MS/MSD Received SO 10/13/20
1 container Received SO 10/13/20 1/3 full

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: Amy Siefker	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-85814-38797.8
Client Contact: Elizabeth Hover	Phone:	E-Mail: sandra.fredrick@eurofinset.com		Page: Page 22 of 7
Company: ARCADIS U.S., Inc.				Job #:

Address: 126 North Jefferson Street Suite 400	Due Date Requested:	Analysis Requested	Preservation Codes:
City: Milwaukee	TAT Requested (days): Standard		A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
State, Zip: WI, 53202			
Phone:	PO #: 30015296.00009		Other:
Email: Elizabeth.Hover@arcadis.com	WO #:		
Project Name: Marinette 30015296.00009	Project #: 50017363		
Site: Marinette, WI	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D - TSS	PFC_IDA - PFAS, Extended List (36 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		N	N	N	N		
Field Blank-10-10-2020	10/10/20		G	Water	N	N		X		Field Blank
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Amy Siefker	10/12/20 / 1200	Arcadis		10/13/20 1000	ETA SAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 991377, 991376, 991375, 991374	Cooler Temperature(s) °C and Other Remarks: 1.4, 1.1, 2.0, 3.1

- time on containers 1500 5010/13/20

Ver: 01/16/2019

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10/27/2020

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 320-197414.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 320-65555-1
Address: 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484	PO #:			
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	WO #:			
Email:	Project #: 50017363			
Project Name: Marinette 30015296.00009	SSOW#:			
Site				

320-65555 COC

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-U02-10102020 (320-65555-2)	10/10/20	14:40 Central		Water			X	1	
GW-U03-10102020 (320-65555-3)	10/10/20	14:55 Central		Water			X	1	
GW-U04-10102020 (320-65555-4)	10/10/20	15:05 Central		Water			X	1	
GW-U05-10102020 (320-65555-5)	10/10/20	16:00 Central		Water			X	1	
GW-U05-10102020 (320-65555-5MS)	10/10/20	16:00 Central	MS	Water			X	1	
GW-U05-10102020 (320-65555-5MSD)	10/10/20	16:00 Central	MSD	Water			X	1	
GW-U06-10102020 (320-65555-6)	10/10/20	16:20 Central		Water			X	1	
GW-U07-10102020 (320-65555-7)	10/10/20	16:30 Central		Water			X	1	
GW-U08-10102020 (320-65555-8)	10/10/20	16:45 Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Susan Cox	10/14/20 - 1630	ETASAC	Lori Scott	10/15/20 0930	TACHI
2	Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.0 → 2.0

Ver: 01/16/2019

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone: 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 320-197414.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: sandra.fredrick@eurofinset.com	State of Origin: Wisconsin	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Wisconsin		Job #: 320-65555-1
Address: 2417 Bond Street, ,	Due Date Requested: 10/23/2020			
City: University Park	TAT Requested (days):			
State, Zip: IL, 60484				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #:			
Email:	WO #:			
Project Name: Marinette 30015296.00009	Project #: 50017363			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540D/ TSS	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-U09-10102020 (320-65555-9)	10/10/20	17:00 Central		Water			X	1	
GW-U10-10102020 (320-65555-10)	10/10/20	17:20 Central		Water			X	1	
DUP-03-10102020 (320-65555-11)	10/10/20	Central		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmenca

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Juan Ca	10/14/20 - 1630	ETASAL	Shin Scott	10/15/20 0930	TAL CHI
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc. Job Number: 320-65555-1

Login Number: 65555 **List Source: Eurofins TestAmerica, Sacramento**
List Number: 1
Creator: Thompson, Sarah W

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	991377, 991376, 991375, 991374
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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
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.	False	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Refer to Job Narrative for details.
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	

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 320-65555-1

Login Number: 65555
List Number: 2
Creator: Scott, Sherri L

List Source: Eurofins TestAmerica, Chicago
List Creation: 10/15/20 01:13 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	
Sample custody seals, if present, are intact.	True	
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	2.0
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.	True	
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.	True	