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444 21<sup>st</sup> Street South · La Crosse, Wisconsin · 54601

July 23, 2021

David Rozeboom  
Remediation and Redevelopment Program  
Wisconsin Department of Natural Resources  
Eau Claire Regional Office  
1300 W. Clairemont Ave.  
Eau Claire, WI 54701

**RE: Private Well Sampling Results – 2222 Bainbridge Street  
La Crosse Airport PFAS Investigation  
2850 Airport Dr, French Island, La Crosse, WI  
WDNR BRRTS Activity # 02-32-587347**

Dear Mr. Rozeboom:

Please find attached the private well sampling results lab report and letters to the owners and occupants, for the above referenced residence. We are also submitting the corresponding EQUIS files.

Please call me with any question you may have.

Sincerely,

John C. Storlie, PG  
Coulee Environmental Solutions™  
A division of The OS Group, LLC  
444 21<sup>st</sup> Street South  
La Crosse, Wisconsin 54601  
608.433.9389 – Direct  
E-Mail Address: [John.Storlie@theOSgrp.com](mailto:John.Storlie@theOSgrp.com)

Attachments:

- Letter to owners
- Letter to occupant
- Lab report
- EQUIS files

cc: Mayor Reynolds  
Stephen Matty, City Attorney



444 21<sup>st</sup> Street South · La Crosse, Wisconsin · 54601

July 21, 2021

████████████████████  
 N19332 Ziegler Lane  
 Trempealeau, WI 54661

Subject: Private Well Sampling Results  
 2222 BAINBRIDGE ST, La Crosse, WI 54603  
 Tax Parcel #4-150-0  
 Sampling Point #150-0  
 Sample Date: 06/22/21

Dear ████████████████████:

We have received and reviewed the test results for the sample collected at the above address. Some PFAS compounds were found, but the levels found were **below** the Department of Health Services (DHS) levels recommended for protecting health. These levels are called the “Recommended Public Health Standard” in the table below. The levels found in *your* well are called the “Sample Result” in the table below.

**Sample Results**

Compound	Sample Result (unit)	Recommended Public Health Standard (unit <sup>e</sup> )	
N-Ethyl Perfluorooctane sulfonamide (NEtFOSA) CAS # 4151-50-2	Not Detected	20 ppt <sup>a,b</sup>	The recommended limit is 20 ppt for any one of these 6 compounds or the combined total of all 6
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) CAS # 2991-50-6	Not Detected	20 ppt <sup>a,b</sup>	
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE) CAS # 1691-99-2	Not Detected	20 ppt <sup>a,b</sup>	
Perfluorooctane sulfonamide (PFOSA) CAS # 754-91-6	Not Detected	20 ppt <sup>a,b</sup>	
Perfluorooctanoic acid (PFOA) CAS # 335-67-1	Not Detected	20 ppt <sup>a,b</sup>	
Perfluorooctanesulfonic acid (PFOS) CAS # 1763-23-1	Not Detected	20 ppt <sup>a,b</sup>	

Compound	Sample Result (unit)	Recommended Public Health Standard (unit <sup>e</sup> )
Hexafluoropropylene oxide dimer acid (HPFO-DA; GenX) CAS # 13252-13-6	Not Detected	300 ppt <sup>a</sup>
Perfluorobutanesulfonic acid (PFBS) CAS # 375-73-5	2.5 ppt	450,000 ppt <sup>a</sup>
Perfluorohexanesulfonic acid (PFHxS) CAS # 355-46-4	2.1 ppt	40 ppt <sup>a</sup>
Perfluorobutanoic acid (PFBA) CAS # 375-22-4	2.7 ppt	10,000 ppt <sup>a</sup>
Perfluorodecanoic acid (PFDA) CAS # 335-76-2	Not Detected	300 ppt <sup>a</sup>
Perfluorododecanoic acid (PFDoA) CAS # 307-55-1	Not Detected	500 ppt <sup>a</sup>
Perfluorohexanoic acid (PFHxA) CAS # 307-24-4	Not Detected	150,000 ppt <sup>a</sup>
Perfluorononanoic acid (PFNA) CAS # 375-95-1	Not Detected	30 ppt <sup>a</sup>
Perfluorotetradecanoic acid (PFTeA) CAS # 376-06-7	Not Detected	10,000 ppt <sup>a</sup>
Perfluoroundecanoic acid (PFUnA) CAS # 2058-94-8	Not Detected	3,000 ppt <sup>a</sup>
4,8-Dioxa-3H-perfluorononanoic acid (DONA) CAS # 919005-14-4	Not Detected	3,000 ppt <sup>a</sup>
Perfluorooctadecanoic acid (PFODA) CAS # 16517-11-6	Not Detected	400,000 ppt <sup>a</sup>
Perfluoro-1-pentanesulfonic acid (PFPeS) CAS #2706-91-4	0.90 ppt	None Established <sup>c</sup>

<sup>a</sup> Public health enforcement standard (ES) recommended by DHS.

<sup>b</sup> DHS recommends a combined enforcement standard of 20 ng/L and combined preventive action limit of 2 ng/L for FOSA, NEt-FOSE, NEt-FOSA, NetFOSAA, PFOS, and PFOA.

<sup>c</sup> A current standard is not available; the compound is currently under review by DHS for potential public health standard recommendation.

<sup>d</sup> Public health enforcement standard (ES) in NR 140, Wisconsin Administrative Code.

<sup>e</sup> Units: Parts per trillion (ppt) = nanograms of substance per liter of water (ng/L)

<sup>Bl</sup> Detected in the method blank. Possible lab contaminant.

Private Well Sampling Results for  
2222 BAINBRIDGE ST, La Crosse, WI 54603  
Tax Parcel #4-150-0  
Sampling Point #150-0  
July 21, 2021

As required by law, we will be submitting these results to the Department of Natural Resources (DNR). The DNR may consult with the Department of Health Services (DHS) about these test results. *DHS may review all PFAS tests and follow-up with you directly if any actions are recommended to protect your health.*

Thank you for your patience and assistance with our investigation. We will provide updates on the project at <https://www.cityoflacrosse.org/wells> as our work continues. If you have any questions, please call The OS Group at (608) 668-2718 or email them at [PFAS@theOSgrp.com](mailto:PFAS@theOSgrp.com).

You can also contact the DNR and DHS with questions about PFAS or the water sample results at the numbers provided below.

<b><u>Questions about...</u></b>		<b><u>Contact</u></b>	<b><u>Phone</u></b>	<b><u>E-mail Address</u></b>
Soil & Groundwater Testing, Clean Up	DNR	David Rozeboom	715-215-2078	<a href="mailto:David.Rozeboom@wisconsin.gov">David.Rozeboom@wisconsin.gov</a>
Drinking Water or Private wells	DNR	Kyle Burton	920-360-2112	<a href="mailto:kyle.burton@wisconsin.gov">kyle.burton@wisconsin.gov</a>
Health Concerns	DHS	Curtis Hedman	608-266-6677	<a href="mailto:Curtis.Hedman@dhs.wisconsin.gov">Curtis.Hedman@dhs.wisconsin.gov</a>

On behalf of The City of La Crosse  
*The OS Group, LLC*

Attachment: Lab report for your well



444 21<sup>st</sup> Street South · La Crosse, Wisconsin · 54601

July 21, 2021

██████████  
 2222 BAINBRIDGE ST  
 La Crosse, WI 54603

Subject: Private Well Sampling Results  
 2222 BAINBRIDGE ST, La Crosse, WI 54603  
 Tax Parcel #4-150-0  
 Sampling Point #150-0  
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Health Concerns	DHS	Curtis Hedman	608-266-6677	<a href="mailto:Curtis.Hedman@dhs.wisconsin.gov">Curtis.Hedman@dhs.wisconsin.gov</a>

On behalf of The City of La Crosse  
*The OS Group, LLC*

Attachment: Lab report for your well

July 21, 2021

Steve Osesek  
The OS Group, LLC  
N6746 McCurdy Road  
Holmen, WI 54636

RE: Project: LACROSSE WELLS 23 & 24  
Pace Project No.: 40228884

Dear Steve Osesek:

Enclosed are the analytical results for sample(s) received by the laboratory on June 23, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Christopher Hyska  
christopher.hyska@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: John Storlie, The OS Group, LLC



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## SAMPLE SUMMARY

Project: LACROSSE WELLS 23 & 24

Pace Project No.: 40228884

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
40228884001	150-0	Water	06/22/21 13:23	06/23/21 11:30

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



# Sample Preservation Receipt Form

Pace Analytical Services, LLC  
1241 Bellevue Street, Suite 9  
Green Bay, WI 54302

Client Name: DS Group

Project # 40228884

All containers needing preservation have been checked and noted below: Yes No N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):


Initial when completed:

Date/Time:

Pace Lab #	Glass							Plastic					Vials				Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)			
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU								SP5T	ZPLC	GN
001									2																								2.5 / 5 / 10
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
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017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: \_\_\_\_\_ Headspace in VOA Vials (>6mm) : Yes No N/A \*If yes look in headspace column

AG1U 1 liter amber glass	BP1U 1 liter plastic unpres	VG9A 40 mL clear ascorbic	JGFU 4 oz amber jar unpres
BG1U 1 liter clear glass	BP3U 250 mL plastic unpres	DG9T 40 mL amber Na Thio	JG9U 9 oz amber jar unpres
AG1H 1 liter amber glass HCL	BP3B 250 mL plastic NaOH	VG9U 40 mL clear vial unpres	WGFU 4 oz clear jar unpres
AG4S 125 mL amber glass H2SO4	BP3N 250 mL plastic HNO3	VG9H 40 mL clear vial HCL	WPFU 4 oz plastic jar unpres
AG4U 120 mL amber glass unpres	BP3S 250 mL plastic H2SO4	VG9M 40 mL clear vial MeOH	SP5T 120 mL plastic Na Thiosulfate
AG5U 100 mL amber glass unpres		VG9D 40 mL clear vial DI	ZPLC ziploc bag
AG2S 500 mL amber glass H2SO4			GN
BG3U 250 mL clear glass unpres			

 1241 Bellevue Street, Green Bay, WI 54302	Document Name: <b>Sample Condition Upon Receipt (SCUR)</b>	Document Revised: 26Mar2020
	Document No.: <b>ENV-FRM-GBAY-0014-Rev.00</b>	Author: Pace Green Bay Quality Office

**Sample Condition Upon Receipt Form (SCUR)**

Project #:

Client Name: OS Group

**WO# : 40228884**

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Waltco  
 Client  Pace Other: \_\_\_\_\_



Tracking #: 2 806 7495 9497

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no    Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used SR - 110    Type of Ice:  Wet  Blue  Dry  None     Samples on ice, cooling process has begun

Cooler Temperature    Uncorr: 4    /Corr: 4

Temp Blank Present:  yes  no

Biological Tissue is Frozen:  yes  no

Person examining contents:	
Date: <u>4/23/11</u>	Initials: <u>SRK</u>
Labeled By Initials: <u>SRK</u>	

Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pg#</u> <u>04/23/11</u>
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:	8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis    Matrix: <u>W</u>	
Trip Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____	

**Client Notification/ Resolution:** \_\_\_\_\_ If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logir



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## Report of Analysis

**Pace Analytical Services, LLC**  
1241 Bellevue Street  
Suite 9  
Green Bay, WI 54302  
Attention: Christopher Hyska

Project Name: LACROSSE WELLS 23 & 24

Project Number: 40228884

Lot Number: **WF25067**

Date Completed: 07/19/2021

*Karen Coonan*

07/20/2021 5:28 PM

Approved and released by:  
Project Manager II: **Karen L. Coonan**



The electronic signature above is the equivalent of a handwritten signature.  
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

# PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

## Case Narrative Pace Analytical Services, LLC Lot Number: WF25067

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

# PACE ANALYTICAL SERVICES, LLC

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## Sample Summary

Pace Analytical Services, LLC

Lot Number: WF25067

Project Name: LACROSSE WELLS 23 & 24

Project Number: 40228884

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Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	150-0	Aqueous	06/22/2021 1323	06/24/2021

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(1 sample)

# PACE ANALYTICAL SERVICES, LLC

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**Detection Summary**  
**Pace Analytical Services, LLC**  
**Lot Number: WF25067**  
**Project Name: LACROSSE WELLS 23 & 24**  
**Project Number: 40228884**

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	150-0	Aqueous	PFBS	PFAS by ID	2.5	J	ng/L	5
001	150-0	Aqueous	PFPeS	PFAS by ID	0.90	J	ng/L	5
001	150-0	Aqueous	PFHxS	PFAS by ID	2.1	J	ng/L	5
001	150-0	Aqueous	PFBA	PFAS by ID	2.7	J	ng/L	5

(4 detections)



# PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC**

Laboratory ID: **WF25067-001**

Description: **150-0**

Matrix: **Aqueous**

Date Sampled: **06/22/2021 1323**

Project Name: **LACROSSE WELLS 23 & 24**

Date Received: **06/24/2021**

Project Number: **40228884**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	07/12/2021 1240	MMM	07/09/2021 1735	98431

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.1	0.43	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.1	0.59	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.1	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.1	1.8	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		7.1	1.1	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.1	0.78	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.1	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.1	0.43	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.1	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.1	0.67	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.1	0.85	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.1	0.83	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.1	1.1	ng/L	1
<b>Perfluoro-1-butanesulfonic acid (PFBS)</b>	<b>375-73-5</b>	<b>PFAS by ID SOP</b>	<b>2.5</b>	<b>J</b>	<b>3.6</b>	<b>0.37</b>	<b>ng/L</b>	<b>1</b>
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.69	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.6	0.44	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.63	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
<b>Perfluoro-1-pentanesulfonic acid (PFPeS)</b>	<b>2706-91-4</b>	<b>PFAS by ID SOP</b>	<b>0.90</b>	<b>J</b>	<b>3.6</b>	<b>0.53</b>	<b>ng/L</b>	<b>1</b>
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.1	0.93	ng/L	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>355-46-4</b>	<b>PFAS by ID SOP</b>	<b>2.1</b>	<b>J</b>	<b>3.6</b>	<b>0.49</b>	<b>ng/L</b>	<b>1</b>
<b>Perfluoro-n-butanoic acid (PFBA)</b>	<b>375-22-4</b>	<b>PFAS by ID SOP</b>	<b>2.7</b>	<b>J</b>	<b>3.6</b>	<b>0.53</b>	<b>ng/L</b>	<b>1</b>
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.6	0.47	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.42	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.6	0.40	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		7.1	0.73	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.6	0.61	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.6	0.41	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		7.1	0.89	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.6	0.74	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.53	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.47	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.56	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.6	1.8	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		92	25-150
13C2_6:2FTS		94	25-150
13C2_8:2FTS		88	25-150
13C2_PFDa		92	25-150
13C2_PFHxDA		87	25-150
13C2_PFTeDA		91	25-150

LOQ = Limit of Quantitation      B = Detected in the method blank      E = Quantitation of compound exceeded the calibration range      DL = Detection Limit      Q = Surrogate failure  
 ND = Not detected at or above the DL      N = Recovery is out of criteria      P = The RPD between two GC columns exceeds 40%      J = Estimated result < LOQ and ≥ DL      L = LCS/LCSD failure  
 H = Out of holding time      W = Reported on wet weight basis      S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)  
 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

# PFAS by LC/MS/MS

Client: <b>Pace Analytical Services, LLC</b>	Laboratory ID: <b>WF25067-001</b>
Description: <b>150-0</b>	Matrix: <b>Aqueous</b>
Date Sampled: <b>06/22/2021 1323</b>	Project Name: <b>LACROSSE WELLS 23 &amp; 24</b>
Date Received: <b>06/24/2021</b>	Project Number: <b>40228884</b>

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		89	25-150
13C3_PFHxS		90	25-150
13C3-HFPO-DA		94	25-150
13C4_PFBa		94	25-150
13C4_PFHpA		91	25-150
13C5_PFHxA		84	25-150
13C5_PFPeA		95	25-150
13C6_PFDA		84	25-150
13C7_PFUdA		92	25-150
13C8_PFOA		93	25-150
13C8_PFOS		84	25-150
13C8_PFOSA		89	10-150
13C9_PFNA		89	25-150
d-EtFOSA		87	10-150
d5-EtFOSAA		83	25-150
d9-EtFOSE		98	10-150
d-MeFOSA		82	10-150
d3-MeFOSAA		88	25-150
d7-MeFOSE		92	10-150

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LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*  
 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

## QC Summary

# PFAS by LC/MS/MS - MB

Sample ID: WQ98431-001

Matrix: Aqueous

Batch: 98431

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 07/09/2021 1735

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9CI-PF3ONS	ND		1	8.0	0.48	ng/L	07/12/2021 1147
11CI-PF3OUdS	ND		1	8.0	0.66	ng/L	07/12/2021 1147
8:2 FTS	ND		1	8.0	1.6	ng/L	07/12/2021 1147
6:2 FTS	ND		1	8.0	2.0	ng/L	07/12/2021 1147
10:2 FTS	ND		1	8.0	1.2	ng/L	07/12/2021 1147
4:2 FTS	ND		1	8.0	0.87	ng/L	07/12/2021 1147
GenX	ND		1	8.0	2.1	ng/L	07/12/2021 1147
ADONA	ND		1	8.0	0.48	ng/L	07/12/2021 1147
EtFOSA	ND		1	8.0	1.4	ng/L	07/12/2021 1147
EtFOSAA	ND		1	8.0	0.75	ng/L	07/12/2021 1147
EtFOSE	ND		1	8.0	0.95	ng/L	07/12/2021 1147
MeFOSA	ND		1	16	1.3	ng/L	07/12/2021 1147
MeFOSAA	ND		1	8.0	0.93	ng/L	07/12/2021 1147
MeFOSE	ND		1	8.0	1.3	ng/L	07/12/2021 1147
PFBS	ND		1	4.0	0.41	ng/L	07/12/2021 1147
PFDS	ND		1	4.0	0.78	ng/L	07/12/2021 1147
PFHpS	ND		1	4.0	0.50	ng/L	07/12/2021 1147
PFNS	ND		1	4.0	0.71	ng/L	07/12/2021 1147
PFOSA	ND		1	4.0	0.61	ng/L	07/12/2021 1147
PFPeS	ND		1	4.0	0.59	ng/L	07/12/2021 1147
PFDOS	ND		1	8.0	1.0	ng/L	07/12/2021 1147
PFHxS	ND		1	4.0	0.55	ng/L	07/12/2021 1147
PFBA	ND		1	4.0	0.60	ng/L	07/12/2021 1147
PFDA	ND		1	4.0	0.52	ng/L	07/12/2021 1147
PFDoA	ND		1	4.0	0.47	ng/L	07/12/2021 1147
PFHpA	ND		1	4.0	0.45	ng/L	07/12/2021 1147
PFHxDA	ND		1	8.0	0.82	ng/L	07/12/2021 1147
PFHxA	ND		1	4.0	0.69	ng/L	07/12/2021 1147
PFNA	ND		1	4.0	0.46	ng/L	07/12/2021 1147
PFODA	ND		1	8.0	1.0	ng/L	07/12/2021 1147
PFOA	ND		1	4.0	0.83	ng/L	07/12/2021 1147
PFPeA	ND		1	4.0	0.54	ng/L	07/12/2021 1147
PFTeDA	ND		1	4.0	0.60	ng/L	07/12/2021 1147
PFTTrDA	ND		1	4.0	0.53	ng/L	07/12/2021 1147
PFUdA	ND		1	4.0	0.63	ng/L	07/12/2021 1147
PFOS	ND		1	4.0	2.0	ng/L	07/12/2021 1147

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		84	25-150
13C2_6:2FTS		122	25-150
13C2_8:2FTS		101	25-150
13C2_PFDoA		86	25-150
13C2_PFHxDA		43	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## PFAS by LC/MS/MS - MB

Sample ID: WQ98431-001

Matrix: Aqueous

Batch: 98431

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 07/09/2021 1735

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		63	25-150
13C3_PFBs		87	25-150
13C3_PFHxS		87	25-150
13C3-HFPO-DA		86	25-150
13C4_PFBa		90	25-150
13C4_PFHpA		90	25-150
13C5_PFHxA		87	25-150
13C5_PFPeA		93	25-150
13C6_PFDa		88	25-150
13C7_PFUdA		89	25-150
13C8_PFOA		97	25-150
13C8_PFOs		84	25-150
13C8_PFOsA		84	10-150
13C9_PFNa		95	25-150
d-EtFOsA		72	10-150
d5-EtFOsAA		89	25-150
d9-EtFOsE		85	10-150
d-MeFOsA		66	10-150
d3-MeFOsAA		88	25-150
d7-MeFOsE		97	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

# PFAS by LC/MS/MS - LCS

Sample ID: WQ98431-002

Matrix: Aqueous

Batch: 98431

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 07/09/2021 1735

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	15		1	102	50-150	07/12/2021 1158
11CI-PF3OUdS	15	16		1	103	50-150	07/12/2021 1158
8:2 FTS	15	16		1	106	50-150	07/12/2021 1158
6:2 FTS	15	14		1	95	50-150	07/12/2021 1158
10:2 FTS	15	15		1	99	50-150	07/12/2021 1158
4:2 FTS	15	16		1	108	50-150	07/12/2021 1158
GenX	32	34		1	108	50-150	07/12/2021 1158
ADONA	15	17		1	111	50-150	07/12/2021 1158
EtFOSA	16	21		1	130	50-150	07/12/2021 1158
EtFOSAA	16	16		1	98	50-150	07/12/2021 1158
EtFOSE	16	16		1	101	50-150	07/12/2021 1158
MeFOSA	16	19		1	119	50-150	07/12/2021 1158
MeFOSAA	16	17		1	108	50-150	07/12/2021 1158
MeFOSE	16	21		1	129	50-150	07/12/2021 1158
PFBS	14	15		1	103	50-150	07/12/2021 1158
PFDS	15	15		1	97	50-150	07/12/2021 1158
PFHpS	15	16		1	102	50-150	07/12/2021 1158
PFNS	15	15		1	99	50-150	07/12/2021 1158
PFOSA	16	16		1	100	50-150	07/12/2021 1158
PFPeS	15	15		1	99	50-150	07/12/2021 1158
PFDOS	15	15		1	99	50-150	07/12/2021 1158
PFHxS	15	15		1	106	50-150	07/12/2021 1158
PFBA	16	17		1	106	50-150	07/12/2021 1158
PFDA	16	16		1	99	50-150	07/12/2021 1158
PFDoA	16	16		1	101	50-150	07/12/2021 1158
PFHpA	16	17		1	107	50-150	07/12/2021 1158
PFHxDA	16	16		1	103	50-150	07/12/2021 1158
PFHxA	16	17		1	108	50-150	07/12/2021 1158
PFNA	16	18		1	110	50-150	07/12/2021 1158
PFODA	16	14		1	87	50-150	07/12/2021 1158
PFOA	16	17		1	104	50-150	07/12/2021 1158
PFPeA	16	17		1	107	50-150	07/12/2021 1158
PFTeDA	16	16		1	101	50-150	07/12/2021 1158
PFTrDA	16	15		1	97	50-150	07/12/2021 1158
PFUdA	16	16		1	102	50-150	07/12/2021 1158
PFOS	15	15		1	104	50-150	07/12/2021 1158

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		83	25-150
13C2_6:2FTS		91	25-150
13C2_8:2FTS		83	25-150
13C2_PFDoA		83	25-150
13C2_PFHxDA		81	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

## PFAS by LC/MS/MS - LCS

Sample ID: WQ98431-002

Matrix: Aqueous

Batch: 98431

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 07/09/2021 1735

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		81	25-150
13C3_PFBs		82	25-150
13C3_PFHxS		77	25-150
13C3-HFPO-DA		83	25-150
13C4_PFBa		83	25-150
13C4_PFHpA		86	25-150
13C5_PFHxA		77	25-150
13C5_PFPeA		81	25-150
13C6_PFDa		80	25-150
13C7_PFUdA		82	25-150
13C8_PFOA		83	25-150
13C8_PFOs		77	25-150
13C8_PFOsA		77	10-150
13C9_PFNa		81	25-150
d-EtFOsA		54	10-150
d5-EtFOsAA		77	25-150
d9-EtFOsE		79	10-150
d-MeFOsA		62	10-150
d3-MeFOsAA		80	25-150
d7-MeFOsE		79	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

\* = RSD is out of criteria

+ = RPD is out of criteria

**Note: Calculations are performed before rounding to avoid round-off errors in calculated results**

**Chain of Custody  
and  
Miscellaneous Documents**





# Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

State Of Origin: WI  
 Cert. Needed:  Yes  No  
 Owner Received Date: 6/23/2021

Results Requested By: 7/16/2021

Workorder: 40228884 Workorder Name: LACROSSE WELLS 23 & 24

Christopher Hyska  
 Pace Analytical Green Bay  
 1241 Bellevue Street  
 Suite 9  
 Green Bay, WI 54302  
 Phone (920)469-2436

Pace Analytical West Columbia  
 106 Vantage Point Drive  
 West Columbia, SC 29172  
 Phone (803)791-9700



KLOC

Bar#	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Numbered Containers				LAB USE ONLY
						1	2	3	4	
1	150-C	PS	6/22/2021 13:23	40228884001	Water	2				X
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	6/23/21 1600			IR77 - MDL reporting - Quote 23492
2					
3	<i>[Signature]</i>	6/23/21 0955	<i>[Signature]</i>	6/23/21 0953	

Cooler Temperature on Receipt 3.4 °C Custody Seal  or N Received on Ice  or N Samples Intact  or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

*(Please Print Clearly)*

Company Name:	The OS Group LLC
Branch/Location:	LaCrosse WI
Project Contact:	Steven Osesek
Phone:	608-433-9388
Project Number:	-
Project Name:	LACROSSE WELLS 23 & 24
Project State:	WI
Sampled By (Print):	<i>Steven Osesek</i>
Sampled By (Sign):	<i>Steven Osesek</i>
PO #:	-
Regulatory Program:	WDNR



UPPER MIDWEST REGION  
 MN: 812-607-1700 WI: 820-489-2436

Page of

COC No. **40228884**

### CHAIN OF CUSTODY

**\*Preservation Codes:**  
 A=None B=HCL C=H2SO4 D=HNO3 E=Cl Water F=Methanol G=NaOH  
 H=Sodium Bisulfate Solution I=Bedium Thiosulfate J=Other

FILTERED?  
 (YES/NO)  
 PRESERVATION  
 (CODE)\*

Y/N	Risk Level	ANALYSES REQUESTED	DATE	TIME	MATRIX	WV 36 PFAS by ID
N	A					X

<b>Data Package Options</b> (billable)	<b>MS/MSD</b>	<b>Matrix Codes</b>
<input type="checkbox"/> EPA Level II	<input type="checkbox"/> On your sample (billable)	A = Air
<input type="checkbox"/> EPA Level IV	<input type="checkbox"/> NOT needed on your sample	B = Biot
		C = Chemical
		D = Oil
		E = Soil
		F = Sludge
		G = Water
		H = Drinking Water
		I = Ground Water
		J = Surface Water
		K = Waste Water
		L = Wastewater

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	ANALYSES REQUESTED	WV 36 PFAS by ID
		DATE	TIME			
001	150-0	6-23	1:23	DW		X

Quote #:	-	
Mail To Contact:	Steven Osesek	
Mail To Company:	The OS Group LLC	
Mail To Address:	444 21st St S LaCrosse, WI 54601	
Invoice To Contact:	Steven Osesek	
Invoice To Company:	The OS Group LLC	
Invoice To Address:	444 21st St S LaCrosse, WI 54601	
Invoice To Phone:	608-433-9388	
CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
		4532

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: <i>Steven Osesek</i> Date/Time: <i>6/23/21 1:45</i>	Received By:	Date/Time:	PAGE Project No. <b>40228884</b>
Transmit Prelim Rush Results by (complete what you want):	Relinquished By: <i>Fedex</i> Date/Time: <i>6/23/21 11:30</i>	Received By: <i>[Signature]</i> Date/Time: <i>6/23/21 11:30</i>	Received By:	
Email #1:	Relinquished By:	Received By:	Received By:	
Email #2:	Relinquished By:	Received By:	Received By:	
Telephone:	Relinquished By:	Received By:	Received By:	Receipt Temp = <b>4</b> °C
Fax:	Relinquished By:	Received By:	Received By:	Sample Receipt pH OK / Adjusted
Samples on HOLD are subject to special pricing and release of liability	Relinquished By:	Received By:	Received By:	Cool or Custody Seal Present / Not Present Intact / Not Intact

C019:(27.Jun2006)

Rev: 0.0 09/14/08