March 2, 2023
File No. 25221094.00

Mr. Matt Vitale
Wisconsin Department of Natural Resources
1300 W Clairemont Ave.
Eau Claire, WI 54701-6127

Subject: Site Investigation Status Update – PFAS Groundwater Sampling
Blackhawk Drycleaners, 700 East Blackhawk Ave., Prairie du Chien, WI
BRRTS #02-12-552357 and #06-12-587767

Dear Mr. Vitale:

SCS Engineers (SCS) has prepared this Site Investigation Status Update for the Blackhawk Drycleaners site (**Figures 1** and **2**). It provides a summary of additional well installation and groundwater sampling required per your email dated October 25, 2022, and per our follow-up communications with you and Mr. Dave Rozeboom of the Wisconsin Department of Natural Resources (WDNR) on October 27, 2022. The work was performed to further evaluate the degree and extent of per- and polyfluoroalkyl substances (PFAS) in groundwater.

The monitoring well installation and sampling work was performed consistent with the scope of work proposed in our November 2, 2022 email, and as approved by your email dated December 9, 2022. Findings from the work to date indicate that PFAS are likely related to former dry cleaner operations, however further assessment appears unwarranted given the relatively low concentrations, the ubiquitous nature of PFAS in the environment, and apparent lack of downgradient receptors. Additional details are provided below.

METHODS

Monitoring Well Installation

Monitoring wells MW-9, MW-10, and MW-11 were constructed on January 19, 2023, by On-site Environmental Services, Inc., under supervision of an SCS geologist. SCS characterized soils encountered at each monitoring well boring consistent with the Unified Soil Classification System. Each well was constructed to a depth of approximately 30 feet below ground surface (bgs) with 15-foot wells screens, steel protective casings, and locking well plugs.

SCS developed the new wells on January 20, 2023, and Vierbicher surveyed the PVC well casings on January 31, 2023. Monitoring well development water was contained and discharged to the City of Prairie du Chien (City) sanitary sewer with the City's approval. Soil cuttings from the well installation work exhibited no signs of contamination and were spread on the ground at the former dry cleaner property. Boring logs, well construction forms, and monitoring well development forms are provided in **Attachment A**.

Groundwater Sampling

On February 6, 2023, SCS measured water levels at all monitoring wells except wells MW-7 and MW-01R. Monitoring well MW-01R was found to be damaged, likely due to construction equipment, and could not be accessed. Monitoring well MW-7 was not accessible due to ice and standing water.

SCS sampled monitoring wells MW-9, MW-10, and MW-11 for PFAS on February 6, 2023. The samples were collected using low-flow sampling methods and submitted to Eurofins for analysis of the 33 PFAS listed in WDNR's March 1, 2021 PFAS Update. Monitoring well purge water was contained and discharged to the City sanitary sewer.

FINDINGS

Water level information is provided in **Table 1** and a water table contour map is provided as **Figure 3**. The laboratory report for the February 6, 2023 groundwater PFAS sampling event, is provided in **Attachment B** and analytical results are summarized in **Table 2**. Additional details are provided below.

- PFAS were detected in samples from each of the new monitoring wells and PFAS concentrations are consistent with PFAS concentrations detected previously in samples from other site monitoring wells.

- PFAS concentrations for samples from MW-9 and MW-10 exceed the recommended 20 parts per trillion (ppt) groundwater standard for combined perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFAS were not detected in the MW-11 sample at concentrations in excess of the recommended 20 ppt standard for PFOA + PFOS.

- Groundwater flow for the February 2023 sampling event was to the west, which is consistent with prior flow measurements for the site.

CONCLUSIONS

The groundwater PFAS sample results for the new wells are consistent with prior groundwater PFAS sampling results for the site. PFAS appear to be related to former drycleaner operations based on the following information:

- PFAS were previously detected in shallow soil samples collected in the vicinity of the former dry cleaner.

- Based on prior sampling, PFAS appear to be commingled in soil and groundwater with chlorinated volatile organic compounds (CVOCs), which are consistent with a release of dry cleaning solvent.

- The highest groundwater PFAS and CVOC concentrations were detected in samples collected from wells located immediately downgradient of the former dry cleaner.

Based on our conversations with WDNR, we understand that given the relatively low concentrations it is unlikely that remedial action will be necessary for PFAS. It is our opinion that PFAS and CVOCs have been delineated to the extent necessary and that further assessment is not warranted.

Please contact Robert Langdon at (608) 212-3995 or rlangdon@SCSengineers.com if you have any questions concerning this letter.

Sincerely,

Robert Langdon
Senior Project Manager
SCS Engineers

Mark R. Huber, PE
Project Director
SCS Engineers

REL/AJR/MRH

cc: Garth Frable, City of Prairie du Chien

Attachments: Table 1 – Water Level Summary
Table 2 – Groundwater Analytical Results Summary – PFAS
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Water Table Map – February 6, 2023
Attachment A – Monitoring Well Construction Documentation
Attachment B – Laboratory Analytical Report

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Tables

Table 1. Water Level Summary
Blackhawk Junction - Prairie du Chien, WI / SCS Engineers Project # 25221094.00

	Depth to Water in feet below top of well casing												
Raw Data	**MW-01**	**MW-01R**	**MW-02**	**MW-03**	**MW-04**	**MW-05**	**MW-6P**	**MW-7**	**MW-8**	**MW-8P**	**MW-9**	**MW-10**	**MW-11**
Measurement Date													
February 1, 2021	23.29	--	23.79	24.12	23.23	20.45	--	--	--	--	--	--	--
April 7, 2021	23.10	--	23.50	23.85	22.85	20.02	--	--	--	--	--	--	--
June 23, 2021	23.24	--	23.86	24.25	23.29	20.51	--	--	--	--	--	--	--
August 23, 2021	24.18	--	24.81	25.15	24.19	21.42	20.96	20.21	20.68	20.76	--	--	--
December 13, 2021	25.84	--	25.59	25.97	24.99	22.13	21.75	20.98	21.39	21.46	--	--	--
February 16, 2022	25.91	--	25.69	26.07	25.07	22.32	21.84	21.18	21.59	21.67	--	--	--
May 12, 2022	AB	22.40	23.00	23.40	22.40	19.41	19.12	18.38	18.62	18.74	--	--	--
August 11, 2022	AB	21.18	22.64	23.06	22.08	19.31	18.87	18.11	18.61	18.68	--	--	--
February 6, 2023	AB	--	25.38	25.75	24.78	21.96	21.53	--	21.23	21.31	24.17	24.06	23.46

	Ground Water Elevation in feet, relative survey elevation												
Well Number	**MW-01**	**MW-01R**	**MW-02**	**MW-03**	**MW-04**	**MW-05**	**MW-6P**	**MW-7**	**MW-8**	**MW-8P**	**MW-9**	**MW-10**	**MW-11**
Top of Casing Elevation (feet amsl)	640.39	--	640.78	641.19	640.20	637.23	636.95	636.20	636.51	636.56	639.22	639.14	638.52
Screen Length (ft)	15	15	15	15	15	15	5	15	15	5	15	15	15
Total Depth (ft from top of casing)	31.4	32.7	30.4	32.7	32.3	29.8	55.4	29.1	29.8	64.9	30.4	29.9	30.3
Top of Well Screen Elevation (ft)	624.0	--	625.4	623.5	622.9	622.5	586.6	622.1	621.7	576.7	623.8	624.2	623.2
Measurement Date													
February 1, 2021	617.10	--	616.99	617.07	616.97	616.78	--	--	--	--	--	--	--
April 7, 2021	617.29	--	617.28	617.34	617.35	617.21	--	--	--	--	--	--	--
June 23, 2021	617.15	--	616.92	616.94	616.91	616.72	--	--	--	--	--	--	--
August 23, 2021	616.21	--	615.97	616.04	616.01	615.81	615.99	615.99	615.83	615.80	--	--	--
December 13, 2021	614.55	--	615.19	615.22	615.21	615.10	615.20	615.22	615.12	615.10	--	--	--
February 16, 2022	614.48	--	615.09	615.12	615.13	614.91	615.11	615.02	614.92	614.89	--	--	--
May 12, 2022	AB	--	617.78	617.79	617.80	617.82	617.83	617.82	617.89	617.82	--	--	--
August 11, 2022	AB	--	618.14	618.13	618.12	617.92	618.08	618.09	617.90	617.88	--	--	--
February 6, 2023	AB	--	615.40	615.44	615.42	615.27	615.42	--	615.28	615.25	615.05	615.08	615.06
Bottom of Well Elevation (ft)	609.04	--	610.37	608.45	607.94	607.48	581.60	607.10	606.72	571.71	608.82	609.24	608.22

Abbreviations:
AB = Abandoned -- = Not Applicable

Notes:
1) February and April 2021 water levels and well construction details from May 2021 Bay West Limited Site Investigation Report.
Top of casing elevations from Quam Engineering, LLC survey performed August 23, 2021.
2) On December 13, 2021, SCS observed that monitoring well MW-01 had been damaged. The well had been struck and the PVC casing bent.
The top of casing elevation from the August 23, 2021 survey may no longer be accurate. MW-01 abandoned and replaced by MW-01R on March 4, 2022.
3) MW-9, MW-10, and MW-11 top of casing elevations from Vierbicher survey performed January 31, 2023.
4) On February 6, 2023 MW-01R could not be accessed due to damaged lid and MW-7 could not be accessed due to water and ice in flush mount casing.

Created by:	REL	Date:	6/26/2021
Last revision by:	REL	Date:	2/8/2023
Checked by:	RM	Date:	2/8/2023
Proj Mgr QA/QC:	REL	Date:	2/8/2023

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Table 2. Groundwater Analytical Results Summary - PFAS
Blackhawk Junction - Prairie du Chien, WI / SCS Engineers Project #25221094.00
(Results are in ng/L)

Free Acid Name			Perfluorobutanoic acid	Perfluoropentanoic acid	Perfluorohexanoic acid	Perfluoroheptanoic acid	Perfluorooctanoic acid	Perfluorononanoic acid	Perfluorodecanoic acid	Perfluoroundecanoic acid	Perfluorododecanoic acid	Perfluorotridecanoic acid	Perfluorotetradecanoic acid	Perfluorobutanesulfonic acid	Perfluoropentanesulfonic acid	Perfluorohexanesulfonic acid	Perfluoroheptanesulfonic acid	Perfluorooctanesulfonic acid	Perfluorononanesulfonic acid	Perfluorodecanesulfonic acid	Perfluorooctanesulfonamide
	Acronym:		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTriA	PFTeA	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	FOSA
Sample	Date	CAS #	375-22-4	2706-90-3	307-24-4	375-85-9	335-67-1	375-95-1	335-76-2	2058-94-8	307-55-1	72629-94-8	376-06-7	375-73-5	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	754-91-6
MW-1	2/17/2022		5.9	6.6	4.0	3.0	6.5	<0.24	<0.28	<0.99	<0.49	<1.2	<0.65	3.5	<0.27	6.2	0.37 J	15	<0.33	<0.29	<0.88
	2/17/2022 (Dup)		5.4	6.7	3.8	2.8	6.7	<0.24	<0.28	<0.99	<0.50	<1.2	<0.66	3.2	<0.27	5.9	0.51 J	16	<0.33	<0.29	1.5 J
MW-1R	5/12/2022		3.3 J	3.4	2.4	2.6	5.7	<0.24	<0.28	<1.0	<0.50	<1.2	<0.66	4.4	<0.27	16	0.43 J	11	<0.34	<0.29	<0.89
	8/11/2022		5.3	5.8	2.8	2.9	4.3	<0.25	<0.28	<1.0	<0.50	<1.2	<0.66	7.1	<0.27	1.4 J	0.27 J	9 C	<0.34	<0.29	<0.89
	8/11/2022 (Dup)		3.5 J	3.8	2.2	2.9	3.5	<0.22	<0.26	<0.91	<0.45	<1.1	<0.60	6.9	<0.25	0.96 J	0.2 J	6.6 C	<0.31	<0.26	<0.81
MW-2	2/13/2021		3.7	1.6 J	2.9	2.8	11	<0.70	<0.53	<0.51	<0.46	<0.59	<0.45	2.1	<0.45	3.6	1.5 J	3.0 I	<0.42	<0.43	<0.78
	5/12/2022		7.1	6.1	4	4.1	7.8	<0.23	<0.27	<0.94	<0.47	<1.1	<0.62	3.1	0.33 J	6.9	0.45 J	7.8 C	<0.32	<0.27	0.94 J
	8/11/2022		3.5 J	2.8	2.3	4	5.7	<0.24	<0.28	<1.0	<0.50	<1.2	<0.66	2.7	0.42 J	9.3	0.36 J	2.5 C	<0.34	<0.29	<0.89
MW-3	12/13/2021		6.4	10	7.9	5.4	19	0.86 J	<0.56	<0.54	<0.48	<0.62	<0.47	4.2	<0.47	4.1	2.6	**58**	<0.44	<0.45	<0.81
	12/13/2021 (Dup)		6.4	9.9	7.0	5.7	**22**	1.0 J	<0.54	<0.51	<0.46	<0.59	<0.45	3.7	<0.45	4.1	2.3	**55**	<0.43	<0.43	<0.78
	5/12/2022		5.1	3.6	12.0	6.3	**33**	0.52 J	<0.27	<0.97	<0.49	<1.1	<0.65	11	1.7 J	220	2.9	**26** C	<0.33	<0.28	<0.87
	5/12/2022 (Dup)		4.5	3.4	12.0	6.3	**36**	0.64 J	<0.27	<0.95	<0.47	<1.1	<0.63	11	1.7	220	3.8	**26** C	<0.32	<0.28	1.1 J
	8/11/2022		4.8	5.1	5.6	3.9	13	0.36 J	<0.28	<0.99	<0.50	<1.2	<0.66	7.9	0.57 J	33	2.3	19	<0.33	<0.29	<0.89
MW-4	12/13/2021		9.0	12	16	14	**30**	7.4	<0.55	<0.52	<0.47	<0.60	<0.46	39	1.1 J	46	0.67 J	6.8	<0.43	<0.44	<0.79
	5/12/2022		9.3	6.1	34	15	**71**	<0.24	<0.27	<0.97	<0.48	<1.1	<0.64	17	7.8	820	4.8	**45** C	<0.33	<0.28	<0.86
	8/11/2022		11.0	10	24	15	**46**	0.93 J	<0.27	<0.98	<0.49	<1.2	<0.65	85	5	460	1.8	**29** C	<0.33	<0.28	<0.87
MW-5	2/17/2022		3.5 J	1.8	12	3.2	14	<0.24	<0.27	<0.97	<0.48	<1.1	<0.64	5.6	2.5	140	0.28 J	17 C	<0.33	<0.28	<0.86
	5/12/2022		3.3 J	1.3 J	6.6	2.6	8.4	<0.24	<0.28	<0.99	<0.50	<1.2	<0.66	4.7	1.5 J	98	<0.17	15 C	<0.33	<0.29	<0.88
	8/11/2022		9.2	5.6	27	11	**50**	<0.23	<0.26	<0.93	<0.47	<1.1	<0.62	18	7.1	470	1.6 J	**58** C	<0.31	<0.27	<0.83
MW-6P	2/16/2022		<2.2	<0.44	0.63 J	<0.23	0.92 J	<0.24	<0.28	<0.99	<0.50	<1.2	<0.66	0.47 J	<0.27	4.7	<0.17	3.4 C	<0.33	<0.29	<0.88
MW-7	2/17/2022		2.6 J	<0.44	1.3 J	0.24 J	1.5 J	<0.25	<0.28	<1.0	<0.50	<1.2	<0.66	2.9	0.72 J	21	<0.17	<0.49	<0.34	<0.29	<0.89
MW-8	2/17/2022		2.6 J	0.7 J	0.89 J	0.35 J	0.86 J	<0.24	<0.27	<0.97	<0.49	<1.1	<0.64	1.6 J	<0.26	4.9	<0.17	2.5 C	<0.33	<0.28	<0.87
	5/12/2022		3.3 J	0.52 J	0.64 J	0.44 J	1.1 J	<0.24	<0.27	<0.96	<0.48	<1.1	<0.64	2.5	<0.26	8.4	<0.17	2.9	<0.32	<0.28	<0.86
	8/11/2022		4.3	1 J	1.6 J	0.77 J	1.7	<0.23	<0.27	<0.95	<0.48	<1.1	<0.63	43	0.28 J	9.6	<0.16	4.4	<0.32	<0.28	<0.85
MW-8P	2/17/2022		<2.2	<0.44	<0.52	<0.22	<0.76	<0.24	<0.28	<0.99	<0.49	<1.2	<0.66	<0.18	<0.27	<0.51	<0.17	<0.49	<0.33	<0.29	<0.88
MW-9	2/6/2023		7.9	3.4	4.7	2.7	12	<0.25	<0.29	<1.0	<0.52	<1.2	<0.69	14	0.33 J	14	0.68 J	10 C	<0.35	<0.30	<0.92
MW-10	2/6/2023		5.1	2.0	2.6	1.0 J	4.2	0.27 J	<0.29	<1.0	<0.51	<1.2	<0.68	6.7	0.84 J	25	0.48 J	**78**	<0.35	<0.30	<0.92
MW-10 DUP	2/6/2023		5.4	2.1	2.8	0.97 J	4.2	0.29 J	<0.29	<1.0	<0.52	<1.2	<0.69	6.7	0.65 J	26	0.56 J	**88**	<0.35	<0.30	<0.92
MW-11	2/6/2023		5.8	5.0	6.1	2.3	5.9	<0.25	<0.29	<1.0	<0.52	<1.2	<0.69	7.1	0.48 J	10	0.38 J	14	<0.35	<0.30	<0.92
Equipment Blank	12/13/2021		<0.43	<0.42	<0.42	<0.53	<0.57	<0.72	<0.55	<0.52	<0.47	<0.60	<0.46	<0.46	<0.46	<0.49	<0.40	<0.53	<0.43	<0.44	<0.79
	5/12/2022		<2.2	<0.45	<0.54	<0.23	<0.79	<0.25	<0.29	<1.0	<0.51	<1.2	<0.68	<0.19	<0.28	<0.53	<0.18	<0.50	<0.34	<0.30	<0.91
	8/11/2022		<2.2	<0.46	<0.54	<0.23	<0.79	<0.25	<0.29	<1.0	<0.51	<1.2	<0.68	<0.19	<0.28	<0.53	<0.18	<0.50	<0.35	<0.30	<0.91
	2/6/2023		<2.3	<0.46	<0.55	<0.24	<0.80	<0.26	<0.29	<1.0	<0.52	<1.2	<0.69	<0.19	<0.28	<0.54	<0.18	<0.51	<0.35	<0.30	<0.93
Equipment Blank - Tube	2/16/2022		<2.2	<0.45	<0.54	<0.23	<0.79	<0.25	<0.29	<1.0	<0.51	<1.2	<0.68	<0.19	<0.28	<0.53	<0.18	<0.50	<0.34	<0.30	<0.91
Equipment Blank - Pipe	2/17/2022		<2.5	<0.50	<0.60	<0.26	<0.87	<0.28	<0.32	<1.1	<0.57	<1.3	<0.75	<0.21	<0.31	<0.59	<0.20	<0.56	<0.38	<0.33	<1.0
Field Blank	12/13/2021		<0.48	<0.47	<0.47	<0.60	<0.63	<0.80	<0.61	<0.59	<0.52	<0.67	<0.52	<0.51	<0.51	<0.55	<0.45	<0.59	<0.48	<0.49	<0.89
	2/16/2022		<2.2	<0.44	<0.52	<0.22	<0.76	<0.24	<0.28	<0.99	<0.49	<1.2	<0.65	<0.18	<0.27	<0.51	<0.17	<0.48	<0.33	<0.29	<0.88
	5/12/2022		<2.1	<0.43	<0.50	<0.22	<0.74	<0.23	<0.27	<0.96	<0.48	<1.1	<0.63	<0.17	<0.26	<0.50	<0.17	<0.47	<0.32	<0.28	<0.85
	8/11/2022		<2.1	<0.43	<0.51	<0.22	<0.75	<0.24	<0.27	<0.97	<0.49	<1.1	<0.64	<0.18	<0.26	<0.50	<0.17	<0.48	<0.33	<0.28	<0.87
	2/6/2023		<2.3	<0.46	<0.55	<0.24	<0.81	<0.26	<0.29	<1.0	<0.52	<1.2	<0.69	<0.19	<0.28	<0.54	<0.18	<0.51	<0.35	<0.30	<0.93
WDNR Proposed PFOA + PFOS Standard			NE	NE	NE	NE	20	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	20	NE	NE	NE

Abbreviations:
ng/L = nanogram per liter
CAS No. = Chemical Abstracts Service Number
PFAS = Per- and Polyfluoroalkyl Substances
-- = Not Applicable
Dup = Duplicate Sample
NE = Not Established
ND = Not Detected at the reporting limit

Notes:
Bold+Underlined results exceed Wisconsin Department of Natural Resources 20 ppt proposed standard for PFOA + PFOS.

Laboratory Notes/Qualifiers:
C = Method 537 (modified): The "C" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. MW-5 (500-212613-7), MW-6P (500-212613-8) and MW-8 (500-212613-10); MW-9 (500-229080-1).
I = Interference present
J = Reported value was between the limit of detection and the limit of quantitation.

Table 2. Groundwater Analytical Results Summary - PFAS
Blackhawk Junction - Prairie du Chien, WI / SCS Engineers Project #25221094.00
(Results are in ng/L)

Free Acid Name			2-(N-Methylperfluorooctanesulfonamido) acetic acid	2-(N-Ethylperfluorooctanesulfonamido) acetic acid	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid	8:2 Fluorotelomer sulfonic acid	N-Ethylperfluorooctanesulfonamide	N-Methylperfluorooctanesulfonamide	Perfluorododecanesulfonic acid	N-Methyl perfluorooctanesulfonamidoethanol	N-Ethyl perfluorooctanesulfonamidoethanol	Perfluoro(2-((6-chlorohexyl)oxy)ethanesulfonic acid)	Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	2-((8-Chloro-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-hexadecafluorooctyl)oxy)-1,1,2,2-tetrafluoroethanesulfonic acid	DONA [a.k.a. 4,8-Dioxa-3H-perfluorononanoic acid (ADONA)]	PFOA + PFOS Combined
	Acronym:		N-MeFOSAA	N-EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	N-EtFOSA	N-MeFOSA	PFDoS	N-MeFOSE	N-EtFOSE	F-53B Major/ 9Cl-PF3ONS	GenX	F-53B Minor/ 11Cl-PF3OUdS	DONA/ ADONA	--
Sample	**Date**	**CAS #**	2355-31-9	2991-50-6	757124-72-4	27619-97-2	39108-34-4	4151-50-2	31506-32-8	79780-39-5	24448-09-7	1691-99-2	756426-58-1	13252-13-6	763051-92-9	919005-14-4	--
MW-1	2/17/2022		<1.1	<1.2	<0.21	<2.2	<0.41	<0.78	<0.39	<0.87	<1.3	<0.76	<0.21	<1.3	<0.29	<0.36	**22**
	2/17/2022 (Dup)		<1.1	<1.2	<0.22	<2.3	<0.41	<0.78	<0.39	<0.87	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	**23**
MW-1R	5/12/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	17
	8/11/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	13
	8/11/2022 (Dup)		<0.99	<1.1	<0.20	<2.1	<0.38	<0.72	<0.35	<0.80	<1.2	<0.70	<0.20	<1.2	<0.26	<0.33	10
MW-2	2/13/2021		<0.41	<0.53	<0.53	<0.61	<0.62	<0.58	<0.48	<0.44	<0.31	<0.47	<0.29	<0.50	<0.41	<0.49	14
	5/12/2022		<1.0	<1.1	<0.21	<2.1	<0.39	<0.74	<0.37	<0.83	<1.2	<0.73	<0.21	<1.3	<0.27	<0.34	16
	8/11/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	8
MW-3	12/13/2021		<0.43	<0.55	<0.55	2.6	<0.65	<0.60	<0.51	<0.46	<0.33	<0.49	<0.30	<0.52	<0.43	<0.51	**77**
	12/13/2021 (Dup)		<0.41	<0.53	<0.53	4.2	0.72 J	<0.58	<0.49	<0.44	<0.31	<0.47	<0.29	<0.50	<0.42	<0.49	**77**
	5/12/2022		<1.1	<1.1	<0.21	<2.2	<0.41	<0.77	<0.38	<0.86	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	**59**
	5/12/2022 (Dup)		<1.0	<1.1	<0.21	<2.2	<0.40	<0.75	<0.37	<0.84	<1.2	<0.73	<0.21	<1.3	<0.28	<0.34	**62**
	8/11/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	**32**
MW-4	12/13/2021		<0.42	<0.54	<0.54	1.2 J	<0.63	<0.59	<0.50	<0.45	<0.32	<0.48	<0.30	<0.51	<0.42	<0.50	**37**
	5/12/2022		<1.1	<1.1	<0.21	<2.2	<0.40	<0.76	<0.38	<0.85	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	**116**
	8/11/2022		<1.1	<1.2	<0.21	<2.2	<0.41	<0.77	<0.38	<0.86	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	**75**
MW-5	2/17/2022		<1.1	<1.1	<0.21	<2.2	<0.40	<0.77	<0.38	<0.85	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	**31**
	5/12/2022		<1.1	<1.2	<0.22	<2.3	<0.41	<0.78	<0.39	<0.87	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	**23**
	8/11/2022		<1.0	<1.1	<0.20	<2.1	<0.39	<0.74	<0.36	<0.82	<1.2	<0.72	<0.20	<1.3	<0.27	<0.34	**108**
MW-6P	2/16/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	4
MW-7	2/17/2022		<1.1	<1.2	<0.22	<2.3	<0.42	<0.79	<0.39	<0.88	<1.3	<0.77	<0.22	<1.4	<0.29	<0.36	2
MW-8	2/17/2022		<1.1	<1.1	<0.21	<2.2	<0.41	<0.77	<0.38	<0.86	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	3
	5/12/2022		<1.0	<1.1	<0.21	<2.2	<0.40	<0.76	<0.38	<0.85	<1.2	<0.74	<0.21	<1.3	<0.28	<0.35	4
	8/11/2022		<1.0	<1.1	<0.21	<2.2	<0.40	<0.75	<0.37	<0.84	<1.2	<0.74	<0.21	<1.3	<0.28	<0.35	6
MW-8P	2/17/2022		<1.1	<1.2	<0.22	<2.2	<0.41	<0.78	<0.39	<0.87	<1.3	<0.76	<0.22	<1.3	<0.29	<0.36	ND
MW-9	2/6/2023		<1.1	<1.2	<0.23	<2.3	<0.43	<0.82	<0.40	<0.91	<1.3	<0.80	<0.23	<1.4	<0.30	<0.38	**22**
MW-10	2/6/2023		<1.1	<1.2	<0.22	<2.3	<0.43	<0.81	<0.40	<0.91	<1.3	<0.80	<0.22	<1.4	<0.30	<0.37	**82**
MW-10 DUP	2/6/2023		<1.1	<1.2	<0.23	<2.3	<0.43	<0.82	<0.40	<0.91	<1.3	<0.80	<0.23	<1.4	<0.30	<0.38	**92**
MW-11	2/6/2023		<1.1	<1.2	<0.23	<2.4	<0.43	<0.82	<0.41	<0.91	<1.3	<0.80	<0.23	<1.4	<0.30	<0.38	20
Equipment Blank	12/13/2021		<0.42	<0.54	<0.54	0.90 J	<0.63	<0.59	<0.49	<0.45	<0.32	<0.48	<0.30	<0.51	<0.42	<0.50	ND
	5/12/2022		<1.1	<1.2	<0.22	<2.3	<0.43	<0.81	<0.40	<0.90	<1.3	<0.79	<0.22	<1.4	<0.30	<0.37	ND
	8/11/2022		<1.1	<1.2	<0.22	<2.3	<0.43	<0.81	<0.40	<0.90	<1.3	<0.79	<0.22	<1.4	<0.30	<0.37	ND
	2/6/2023		<1.1	<1.2	<0.23	<2.4	<0.44	<0.82	<0.41	<0.92	<1.3	<0.80	<0.23	<1.4	<0.30	<0.38	ND
Equipment Blank - Tube	2/16/2022		<1.1	<1.2	<0.22	<2.3	<0.43	<0.81	<0.40	<0.90	<1.3	<0.79	<0.22	<1.4	<0.30	<0.37	ND
Equipment Blank - Pipe	2/17/2022		<1.2	<1.3	<0.25	<2.6	<0.47	<0.89	<0.44	<1.0	<1.4	<0.87	<0.25	<1.5	<0.33	<0.41	ND
Field Blank	12/13/2021		<0.47	<0.60	<0.60	<0.70	<0.71	<0.66	<0.55	<0.50	<0.36	<0.54	<0.33	<0.57	<0.47	<0.56	ND
	2/16/2022		<1.1	<1.2	<0.22	<2.2	<0.41	<0.78	<0.39	<0.87	<1.3	<0.76	<0.22	<1.3	<0.29	<0.36	ND
	5/12/2022		<1.0	<1.1	<0.21	<2.2	<0.40	<0.76	<0.37	<0.84	<1.2	<0.74	<0.21	<1.3	<0.28	<0.35	ND
	8/11/2022		<1.1	<1.1	<0.21	<2.2	<0.41	<0.77	<0.38	<0.86	<1.2	<0.75	<0.21	<1.3	<0.28	<0.35	ND
	2/6/2023		<1.1	<1.2	<0.23	<2.4	<0.44	<0.83	<0.41	<0.92	<1.3	<0.81	<0.23	<1.4	<0.30	<0.38	ND
WDNR Proposed PFOA + PFOS Standard			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	20

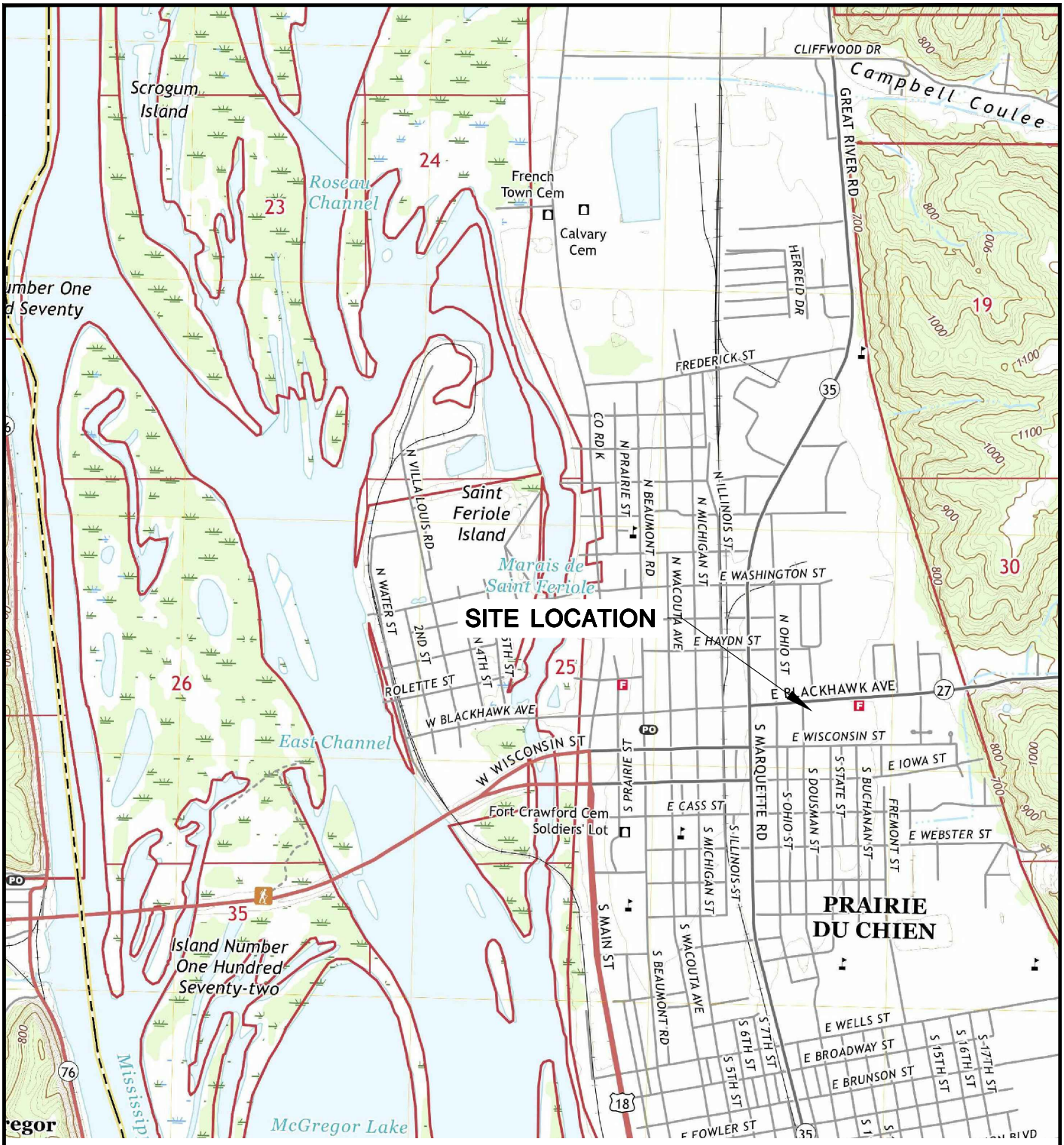
Abbreviations:
ng/L = nanogram per liter
CAS No. = Chemical Abstracts Service Number
PFAS = Per- and Polyfluoroalkyl Substances
-- = Not Applicable
Dup = Duplicate Sample
NE = Not Established
ND = Not Detected at the reporting limit

Notes:
Bold+Underlined results exceed NR 809 drinking water maximum contaminant level (MCL).

Laboratory Notes/Qualifiers:
C = Method 537 (modified): The "C" qualifier means the transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. MW-5 (500-212613-7), MW-6P (500-212613-8) and MW-8 (500-212613-10); MW-9 (500-229080-1).
I = Interference present
J = Reported value was between the limit of detection and the limit of quantitation.

Created by: LMH Date: 1/20/2022
Last revision by: REL Date: 2/22/2023
Checked by: REO Date: 2/23/2023
Proj Mgr QA/QC: REL Date: 2/23/2023

Figures



N

PRAIRIE DU CHIEN QUADRANGLE
WISCONSIN–IOWA
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'

CLIENT	PRAIRIE DU CHIEN REDEVELOPMENT AUTHORITY	SITE	BLACKHAWK JUNCTION REDEVELOPMENT 700 EAST BLACKHAWK AVENUE PRAIRIE DU CHIEN, WISCONSIN

SITE LOCATION MAP

PROJECT NO.	25221094.00	DRAWN BY:	KP
DRAWN:	04/05/2021	CHECKED BY:	MRH
REVISED:	04/05/2021	APPROVED BY:	REL 04/20/2021

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE 1

I:\25221094.00\Drawings\Site Location.dwg, 4/20/2021 2:48:03 PM

LEGEND

- SITE BOUNDARY
- FORMER DRY CLEANERS BUILDING (APPROXIMATE)
- CTV — CABLE TELEVISION (BURIED)
- UE — ELECTRIC (BURIED)
- FO — FIBER OPTIC (BURIED)
- G — GAS MAIN (BURIED)
- OH — OVERHEAD UTILITY
- SA — SANITARY SEWER (BURIED)
- ST — STORM SEWER (BURIED)
- T — TELEPHONE (BURIED)
- W — WATER MAIN (BURIED)
- MANHOLE
- STORM INLET
- UTILITY POLE
- TELEPHONE PEDESTAL
- TRANSFORMER
- FIRE HYDRANT
- SOIL BORING
- TEST PIT
- ABANDONED MONITORING WELL
- MONITORING WELL
- PIEZOMETER

N

60 0 60

SCALE: 1" = 60'

NOTES:

1. SEPTEMBER 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
2. BAY WEST MONITORING WELLS MW-01 THROUGH MW-05 AND SOIL BORINGS SB-01 THROUGH SB-08, AND AYRES BORINGS GP-1 THROUGH GP-7 BASED ON BAY WEST FIGURE 1, SITE MAP WITH MONITORING WELL LOCATIONS DATED JANUARY 27, 2021.
3. ABANDONED ADVENT MONITORING WELLS MW-1, AND MW-2 THROUGH MW-5 BASED ON ADVENT ENVIRONMENTAL SERVICES OVERLAY OF WELL LOCATION MAP DATED SEPTEMBER 13, 1991.
4. UTILITY LOCATIONS FROM VIERBICHER EXISTING CONDITIONS DRAWING DATED MARCH 2022, STORM SEWER DRAWING DATED MARCH 19, 2019, AND SANITARY SEWER LATERAL DRAWING DATED MARCH 2, 2020.
5. SITE BOUNDARY AND LOT DETAILS FROMVIERBICHER CERTIFIED SURVEY MAP DATED JUNE 29, 2021.
6. BORING AND WELL LOCATIONS ARE APPROXIMATE. UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD NOT BE USED FOR LOCATING.

PROJECT NO.	25221094.00	DRAWN BY:	KP
DRAWN:	04/05/2021	CHECKED BY:	REL
REVISED:	02/09/2023	APPROVED BY:	REL 02/23/2023

CLIENT

PRAIRIE DU CHIEN REDEVELOPMENT AUTHORITY

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

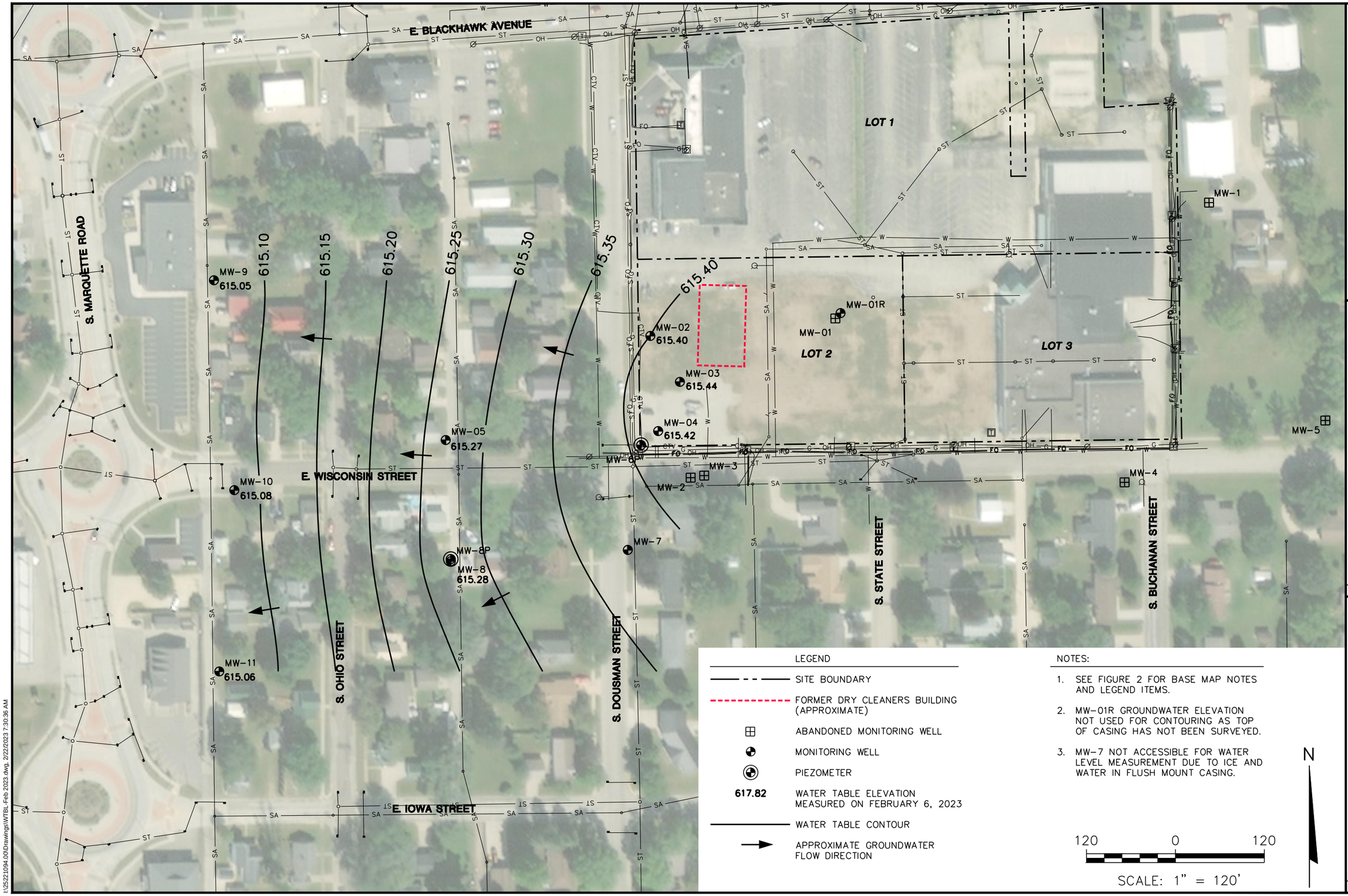
SITE

BLACKHAWK JUNCTION REDEVELOPMENT
700 EAST BLACKHAWK AVENUE
PRAIRIE DU CHIEN, WISCONSIN

SITE PLAN

FIGURE 2

I:\25221094.00\Acad\Site Plan.dwg, 2/23/2023 7:23:02 AM



LEGEND

- SITE BOUNDARY
- FORMER DRY CLEANERS BUILDING (APPROXIMATE)
- ABANDONED MONITORING WELL
- MONITORING WELL
- PIEZOMETER
- 617.82 WATER TABLE ELEVATION MEASURED ON FEBRUARY 6, 2023
- WATER TABLE CONTOUR
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. SEE FIGURE 2 FOR BASE MAP NOTES AND LEGEND ITEMS.
2. MW-01R GROUNDWATER ELEVATION NOT USED FOR CONTOURING AS TOP OF CASING HAS NOT BEEN SURVEYED.
3. MW-7 NOT ACCESSIBLE FOR WATER LEVEL MEASUREMENT DUE TO ICE AND WATER IN FLUSH MOUNT CASING.

120 0 120

SCALE: 1" = 120'

N

WATER TABLE MAP – FEBRUARY 6, 2023

FIGURE 3

SITE: BLACKHAWK JUNCTION REDEVELOPMENT
700 EAST BLACKHAWK AVENUE
PRAIRIE DU CHIEN, WISCONSIN

CLIENT: PRAIRIE DU CHIEN REDEVELOPMENT AUTHORITY

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

PROJECT NO.	25221094.00	
DRAWN:	02/09/2023	DRAWN BY: KP
REVISED:	02/21/2023	CHECKED BY: REL
		APPROVED BY: REL 02/21/2023

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Attachment A

Monitoring Well Construction Documentation

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Blackhawk Junction SCS#: 25221094.00		MW-9

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-site Environmental Services, Inc.	1/19/2023	1/19/2023	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV867		MW-9	615.03 MSL		8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane S / C / N
NW 1/4 of SW 1/4 of Section 30, T 7 N, R 6 W
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
612034170	Crawford	12	Prairie du Chien

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	ORGANIC SILT, fine, dark brown, with roots and grass, (topsoil).	OL									
			2	SILTY SAND, fine, dark brown.	SM									
S1	30		3	POORLY GRADED SAND WITH FINE GRAVEL, fine to coarse, medium brown (alluvium).	SP					M				
			4											
			5											
			6											
			7											
S2	24		8							M				
			9											
			10											
			11											
			12											
S3	29		13							M				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-9 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	POORLY GRADED SAND WITH FINE GRAVEL, fine to coarse, medium brown (alluvium).										
			17											
S4	0		18											
			19											
			20											
			21											
			22											
S5	26		23		SP					M				
			24											
			25											
			26											
			27											
S6	0		28							W				
			29											
			30	End of boring at 30' bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Blackhawk Junction SCS#: 25221094.00		MW-10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-site Environmental Services, Inc.	1/19/2023	1/19/2023	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV868		MW-10	615.05 MSL		8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane S / C / N
NW 1/4 of SW 1/4 of Section 30, T 7 N, R 6 W
Lat ° ' "
Long ° ' "
Local Grid Location Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
612034170	Crawford	12	Prairie du Chien

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	ORGANIC SILT, fine, dark brown, with roots and grass, (topsoil).	OL									
			1	SILTY SAND, fine, dark brown.	SM									
				GRAVEL, coarse, tan.	GP									
S1	43		2	POORLY GRADED SAND WITH FINE GRAVEL, fine to coarse, medium brown (alluvium).						M				
			3											
			4											
			5											
			6											
			7											
S2	0		8		SP									
			9											
			10											
			11											
			12											
S3	30		13							M				
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-10 Use only as an attachment to Form 4400-122.

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			16	POORLY GRADED SAND WITH FINE GRAVEL, fine to coarse, medium brown (alluvium).										
			17											
S4	0		18											
			19											
			20											
			21											
			22											
S5	6		23		SP					M				
			24											
			25											
			26											
			27											
S6	0		28											
			29											
			30	End of boring at 30' bgs.										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Blackhawk Junction SCS#: 25221094.00		MW-11

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Tony Kapugi On-site Environmental Services, Inc.	1/19/2023	1/19/2023	hollow stem auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
VV869		MW-11	615.04 Feet MSL		8.25 in.

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane S / C / N
NW 1/4 of SW 1/4 of Section 30, T 7 N, R 6 W
Lat ° ' "
Long ° ' "
Local Grid Location
Feet ☐ N ☐ S Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
612034170	Crawford	12	Prairie du Chien

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S1	48		1–15	POORLY GRADED SAND WITH FINE GRAVEL, fine to coarse, medium brown (alluvium).	SP					M				Dark brown 0'-2'

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	Tel:
	SCS Engineers 2830 Dairy Drive, Madison, WI 53718	Fax:

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION SUPPLEMENT
Form 4400-122A

Boring Number MW-11 Use only as an attachment to Form 4400-122.

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
S2	33		16							M				
			17											
			18											
			19											
			20											
			21											
			22		SP									
			23											
			24											
S3	32		25							W				
			26											
			27											
			28											
			29											
			30	End of boring at 30' bgs.										

SCS # 25221094.00

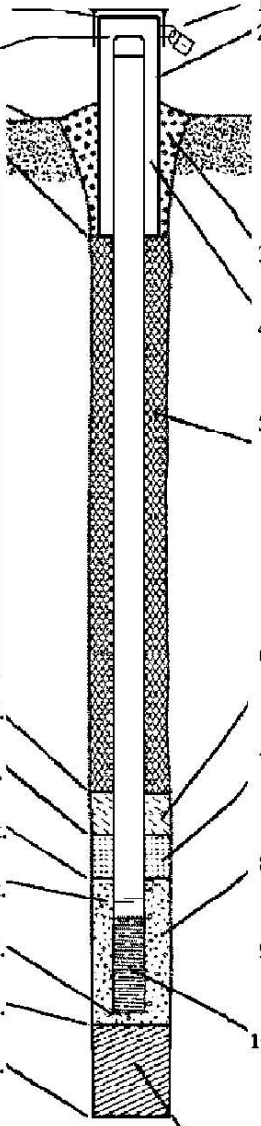
State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Blackhawk Junction	Local Grid Location of Well: ☐ft. ☐N. ☐S. ☐ft. ☐E. ☐W.	Well Name: MW-9
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV867 / DNR Well ID No.
Facility ID: 612034170	St. Plane ft. N, ft. E. S/C/N	Date Well Installed: 01 / 19 / 2023 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 30, T. 7 N, R. 6 ☐E ☒W	Well Installed By: Name (first, last) and Firm: Tony Kapugi
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known / Gov. Lot Number	On-site Environmental Services, Inc.



A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation 639.22 ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or _____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐ ___

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or 1 ft.

F. Fine sand, top _____ ft. MSL or 11 ft.

G. Filter pack, top _____ ft. MSL or 13 ft.

H. Screen joint, top _____ ft. MSL or 15 ft.

I. Well bottom _____ ft. MSL or 30 ft.

J. Filter pack, bottom _____ ft. MSL or 30 ft.

K. Borehole, bottom _____ ft. MSL or 30 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.01 in.

1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel ☒ 04 / Other ☐ ___
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐ ___

4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☒ ___
Filter sand

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.5 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ ___

7. Fine sand material: Manufacturer, product name & mesh size
a. R.W. Sidley 30/100 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. R.W. Sidley #5 ☐
b. Volume added 3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐ ___

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐ ___
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☒ 14 / Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25221094.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Blackhawk Junction	Local Grid Location of Well: ☐ft. ☐N. ☐S. ☐ft. ☐E. ☐W.	Well Name: MW-10
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV868 / DNR Well ID No.
Facility ID: 612034170	St. Plane ft. N, ft. E. S/C/N	Date Well Installed: 01 / 19 / 2023 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 30, T. 7 N, R. 6 ☐E ☒W	Well Installed By: Name (first, last) and Firm: Tony Kapugi
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known / Gov. Lot Number	On-site Environmental Services, Inc.

A. Protective pipe, top elevation ft. MSL

B. Well casing, top elevation 639.14 ft. MSL

C. Land surface elevation ft. MSL

D. Surface seal, bottom ft. MSL or ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ft. MSL or 1 ft.

F. Fine sand, top ft. MSL or 11 ft.

G. Filter pack, top ft. MSL or 13 ft.

H. Screen joint, top ft. MSL or 15 ft.

I. Well bottom ft. MSL or 30 ft.

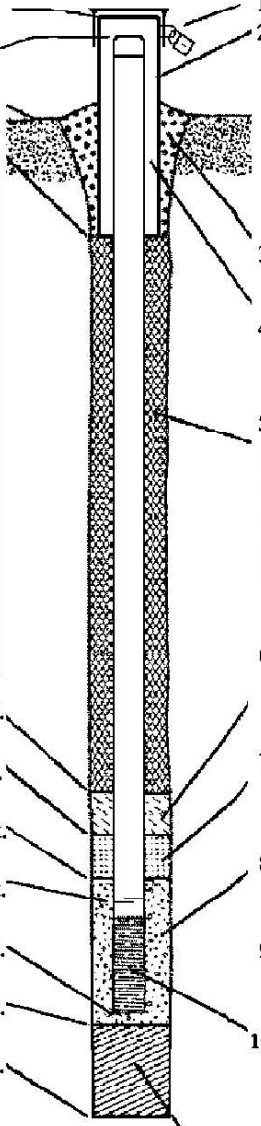
J. Filter pack, bottom ft. MSL or 30 ft.

K. Borehole, bottom ft. MSL or 30 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.01 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe:

3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☒
Filter sand

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.5 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. R.W. Sidley 30/100 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. R.W. Sidley #5 ☐
b. Volume added 3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☒ 14 / Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25221094.00

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Blackhawk Junction	Local Grid Location of Well: ☐N. ☐S. ft. ☐E. ☐W. ft.	Well Name: MW-11
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VV869 / DNR Well ID No.
Facility ID: 612034170	St. Plane ft. N, ft. E. S/C/N	Date Well Installed: 01 / 19 / 2023 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 30, T. 7 N, R. 6 ☐E ☒W	Well Installed By: Name (first, last) and Firm: Tony Kapugi
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known / Gov. Lot Number	On-site Environmental Services, Inc.

A. Protective pipe, top elevation ft. MSL

B. Well casing, top elevation 638.52 ft. MSL

C. Land surface elevation ft. MSL

D. Surface seal, bottom ft. MSL or ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50 / Hollow Stem Auger ☒ 41 / Other ☐

15. Drilling fluid used: Water ☐ 02 / Air ☐ 01 / Drilling Mud ☐ 03 / None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ft. MSL or 1 ft.

F. Fine sand, top ft. MSL or 11 ft.

G. Filter pack, top ft. MSL or 13 ft.

H. Screen joint, top ft. MSL or 15 ft.

I. Well bottom ft. MSL or 30 ft.

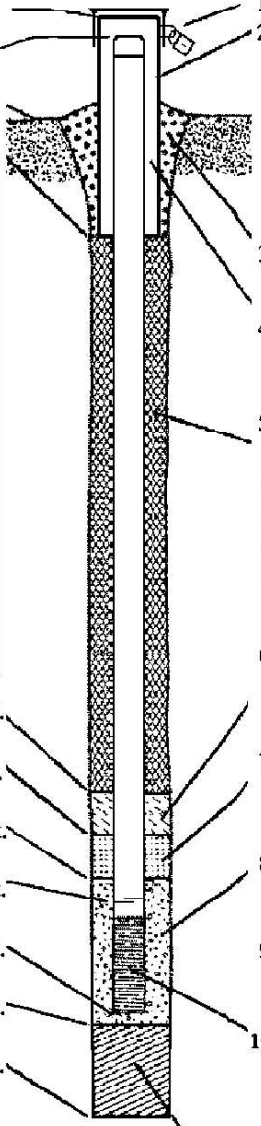
J. Filter pack, bottom ft. MSL or 30 ft.

K. Borehole, bottom ft. MSL or 30 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.01 in.



1. Cap and lock? ☒ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 9 in.
b. Length: 1 ft.
c. Material: Steel ☒ 04 / Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe:

3. Surface seal: Bentonite ☐ 30 / Concrete ☒ 01 / Other ☐

4. Material between well casing and protective pipe: Bentonite ☐ 30 / Other ☒
Filter sand

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 1.5 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 / Tremie pumped ☐ 02 / Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. R.W. Sidley 30/100 ☐
b. Volume added 0.5 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. R.W. Sidley #5 ☐
b. Volume added 3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23 / Flush threaded PVC schedule 80 ☐ 24 / Other ☐

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11 / Continuous slot ☐ 01 / Other ☐
b. Manufacturer Johnson
c. Slot size: 0.010 in.
d. Slotted length: 15 ft.

11. Backfill material (below filter pack): None ☒ 14 / Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

SCS # 25221094.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Blackhawk Junction	Crawford	MW-9

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
FID: 612034170	12	VV867	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 45 min.

4. Depth of well (from top of well casisng) 30.4 ft.

5. Inside diameter of well 2.01 in.

6. Volume of water in filter pack and well casing 5.8 gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) --.- gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 24.17 ft.	24.19 ft.
Date	b. 01/20/2022	01/20/2022
Time	c. 10:10 ☒ a.m. ☐ p.m.	10:55 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	--.- inches	--.- inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark brown, very turbid	Clear, no color

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	--.- mg/l	--.- mg/l
15. COD	--.- mg/l	--.- mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Ryan Last Name: Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
Surged and purged with development pump for 45 minutes. Well has good recharge. 50 gallons purged total.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Chad Last Name: Abram
Facility/Firm: Prairie du Chien RDA
Street: P.O. Box 34
City/State/Zip: Prairie du Chien, WI 53821

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Ryan Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25221094.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Blackhawk Junction	Crawford	MW-10

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
FID: 612034170	12	VV868	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 45 min.

4. Depth of well (from top of well casisng) 29.9 ft.

5. Inside diameter of well 2.01 in.

6. Volume of water in filter pack and well casing 5.4 gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) -- gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 24.08 ft.	24.09 ft.
Date	b. 01/20/2022	01/20/2022
Time	c. 8:40 ☒ a.m. ☐ p.m.	9:25 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	-- inches	-- inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
(Describe)	Dark brown, very turbid	Clear, no color

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	-- mg/l	-- mg/l
15. COD	-- mg/l	-- mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Ryan Last Name: Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
Surged and purged with development pump for 45 minutes. Well has good recharge. 50 gallons purged total.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Chad Last Name: Abram
Facility/Firm: Prairie du Chien RDA
Street: P.O. Box 34
City/State/Zip: Prairie du Chien, WI 53821

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Ryan Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

SCS # 25221094.00

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Blackhawk Junction	Crawford	MW-11

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
FID: 612034170	12	VV869	

1. Can this well be purged dry? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☒ 51
pumped slowly	☐ 50
Other _____	☐ --

3. Time spent developing well 45 min.

4. Depth of well (from top of well casisng) 30.3 ft.

5. Inside diameter of well 2.01 in.

6. Volume of water in filter pack and well casing 6.3 gal.

7. Volume of water removed from well 50.0 gal.

8. Volume of water added (if any) --.- gal.

9. Source of water added NA

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 23.45 ft.	23.48 ft.
Date	b. 01/20/2022 (m m d d y y y y)	01/20/2022
Time	c. 7:30 ☒ a.m. ☐ p.m.	8:15 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	--.- inches	--.- inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Dark brown, very turbid	Clear ☒ 20 Turbid ☐ 25 (Describe) Clear, no color

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	--.- mg/l	--.- mg/l
15. COD	--.- mg/l	--.- mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Ryan Last Name: Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

17. Additional comments on development:
Surged and purged with development pump for 45 minutes. Well has good recharge. 50 gallons purged total.

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Chad Last Name: Abram
Facility/Firm: Prairie du Chien RDA
Street: P.O. Box 34
City/State/Zip: Prairie du Chien, WI 53821

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: Ryan Matzuk
Print Name: Ryan Matzuk
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

Attachment B

Laboratory Analytical Report

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Robert Langdon
SCS Engineers
2830 Dairy Dr
Madison, Wisconsin 53718

Generated 2/20/2023 1:39:47 PM

JOB DESCRIPTION

Black Hawk Junction - 25221094.00

JOB NUMBER

500-229080-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

Eurofins Chicago

Job Notes

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

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

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

Authorization

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

Table of Contents

Case Narrative

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Job ID: 500-229080-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-229080-1

Comments
No additional comments.

Receipt
The samples were received on 2/7/2023 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7º C.

LCMS
Method 537 (modified): The transition mass ratio for the indicated analyte was above the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgment was used to positively identify the analyte. MW-9 (500-229080-1)

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

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-652906.
Method Code: 3535_PFC_28D
Matrix: Water

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

Detection Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-9 — Lab Sample ID: 500-229080-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	7.9		4.7	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.4		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.7		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.7		1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	12		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.33	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	0.68	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	10	C	1.9	0.51	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 500-229080-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.1		4.7	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.0		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.6		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.0	J	1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.2		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.27	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.7		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.84	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	25		1.9	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	0.48	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	78		1.9	0.51	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-10 DUP — Lab Sample ID: 500-229080-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.4		4.7	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	2.1		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2.8		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.97	J	1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	4.2		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.29	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.7		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.65	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	26		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	0.56	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	88		1.9	0.51	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 500-229080-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.8		4.7	2.3	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.0		1.9	0.46	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	6.1		1.9	0.55	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.3		1.9	0.24	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-11 (Continued) — Lab Sample ID: 500-229080-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	5.9		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.1		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	0.48	J	1.9	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	10		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	0.38	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	14		1.9	0.51	ng/L	1		537 (modified)	Total/NA

Client Sample ID: Field Blank — Lab Sample ID: 500-229080-5

No Detections.

Client Sample ID: Equipment Blank — Lab Sample ID: 500-229080-6

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-229080-1	MW-9	Water	02/06/23 11:45	02/07/23 10:15
500-229080-2	MW-10	Water	02/06/23 13:10	02/07/23 10:15
500-229080-3	MW-10 DUP	Water	02/06/23 13:15	02/07/23 10:15
500-229080-4	MW-11	Water	02/06/23 14:15	02/07/23 10:15
500-229080-5	Field Blank	Water	02/06/23 13:00	02/07/23 10:15
500-229080-6	Equipment Blank	Water	02/06/23 11:00	02/07/23 10:15

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Client Sample ID: MW-9

Date Collected: 02/06/23 11:45
Date Received: 02/07/23 10:15

Lab Sample ID: 500-229080-1

Matrix: Water

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**7.9**		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluoropentanoic acid (PFPeA)	**3.4**		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorohexanoic acid (PFHxA)	**4.7**		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluoroheptanoic acid (PFHpA)	**2.7**		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorooctanoic acid (PFOA)	**12**		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorononanoic acid (PFNA)	<0.25		1.9	0.25	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorobutanesulfonic acid (PFBS)	**14**		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluoropentanesulfonic acid (PFPeS)	**0.33**	**J**	1.9	0.28	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorohexanesulfonic acid (PFHxS)	**14**		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluoroheptanesulfonic acid (PFHpS)	**0.68**	**J**	1.9	0.18	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorooctanesulfonic acid (PFOS)	**10**	**C**	1.9	0.51	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorododecanesulfonic acid (PFDoS)	<0.91		1.9	0.91	ng/L		02/09/23 14:44	02/18/23 09:24	1
Perfluorooctanesulfonamide (FOSA)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 09:24	1
NEtFOSA	<0.82		1.9	0.82	ng/L		02/09/23 14:44	02/18/23 09:24	1
NMeFOSA	<0.40		1.9	0.40	ng/L		02/09/23 14:44	02/18/23 09:24	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 09:24	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 09:24	1
NMeFOSE	<1.3		3.8	1.3	ng/L		02/09/23 14:44	02/18/23 09:24	1
NEtFOSE	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:24	1
4:2 FTS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:24	1
6:2 FTS	<2.3		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:24	1
8:2 FTS	<0.43		1.9	0.43	ng/L		02/09/23 14:44	02/18/23 09:24	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		02/09/23 14:44	02/18/23 09:24	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		02/09/23 14:44	02/18/23 09:24	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:24	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*97*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C5 PFPeA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C2 PFHxA	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C4 PFHpA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C4 PFOA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C5 PFNA	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C2 PFDA	*107*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C2 PFUnA	*94*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C2 PFDoA	*93*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*
13C2 PFTeDA	*95*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:24*	*1*

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-9
Lab Sample ID: 500-229080-1
Date Collected: 02/06/23 11:45
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	99		25 - 150	02/09/23 14:44	02/18/23 09:24	1
18O2 PFHxS	99		25 - 150	02/09/23 14:44	02/18/23 09:24	1
13C4 PFOS	98		25 - 150	02/09/23 14:44	02/18/23 09:24	1
13C8 FOSA	115		10 - 150	02/09/23 14:44	02/18/23 09:24	1
d3-NMeFOSAA	117		25 - 150	02/09/23 14:44	02/18/23 09:24	1
d5-NEtFOSAA	121		25 - 150	02/09/23 14:44	02/18/23 09:24	1
d-N-MeFOSA-M	84		10 - 150	02/09/23 14:44	02/18/23 09:24	1
d-N-EtFOSA-M	77		10 - 150	02/09/23 14:44	02/18/23 09:24	1
d7-N-MeFOSE-M	87		10 - 150	02/09/23 14:44	02/18/23 09:24	1
d9-N-EtFOSE-M	87		10 - 150	02/09/23 14:44	02/18/23 09:24	1
M2-4:2 FTS	87		25 - 150	02/09/23 14:44	02/18/23 09:24	1
M2-6:2 FTS	97		25 - 150	02/09/23 14:44	02/18/23 09:24	1
M2-8:2 FTS	103		25 - 150	02/09/23 14:44	02/18/23 09:24	1
13C3 HFPO-DA	99		25 - 150	02/09/23 14:44	02/18/23 09:24	1
13C2 10:2 FTS	90		25 - 150	02/09/23 14:44	02/18/23 09:24	1

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Client Sample ID: MW-10

Date Collected: 02/06/23 13:10
Date Received: 02/07/23 10:15

Lab Sample ID: 500-229080-2

Matrix: Water

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.1**		4.7	2.2	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluoropentanoic acid (PFPeA)	**2.0**		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorohexanoic acid (PFHxA)	**2.6**		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluoroheptanoic acid (PFHpA)	**1.0**	**J**	1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorooctanoic acid (PFOA)	**4.2**		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorononanoic acid (PFNA)	**0.27**	**J**	1.9	0.25	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorotetradecanoic acid (PFTeA)	<0.68		1.9	0.68	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorobutanesulfonic acid (PFBS)	**6.7**		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluoropentanesulfonic acid (PFPeS)	**0.84**	**J**	1.9	0.28	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorohexanesulfonic acid (PFHxS)	**25**		1.9	0.53	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluoroheptanesulfonic acid (PFHpS)	**0.48**	**J**	1.9	0.18	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorooctanesulfonic acid (PFOS)	**78**		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorododecanesulfonic acid (PFDoS)	<0.91		1.9	0.91	ng/L		02/09/23 14:44	02/18/23 09:34	1
Perfluorooctanesulfonamide (FOSA)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 09:34	1
NEtFOSA	<0.81		1.9	0.81	ng/L		02/09/23 14:44	02/18/23 09:34	1
NMeFOSA	<0.40		1.9	0.40	ng/L		02/09/23 14:44	02/18/23 09:34	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 09:34	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 09:34	1
NMeFOSE	<1.3		3.7	1.3	ng/L		02/09/23 14:44	02/18/23 09:34	1
NEtFOSE	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:34	1
4:2 FTS	<0.22		1.9	0.22	ng/L		02/09/23 14:44	02/18/23 09:34	1
6:2 FTS	<2.3		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:34	1
8:2 FTS	<0.43		1.9	0.43	ng/L		02/09/23 14:44	02/18/23 09:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.37		1.9	0.37	ng/L		02/09/23 14:44	02/18/23 09:34	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		02/09/23 14:44	02/18/23 09:34	1
9Cl-PF3ONS	<0.22		1.9	0.22	ng/L		02/09/23 14:44	02/18/23 09:34	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C5 PFPeA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C2 PFHxA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C4 PFHpA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C4 PFOA	*111*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C5 PFNA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C2 PFDA	*111*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C2 PFUnA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C2 PFDoA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*
13C2 PFTeDA	*102*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:34*	*1*

Client Sample ID: MW-10
Lab Sample ID: 500-229080-2
Date Collected: 02/06/23 13:10
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	104		25 - 150	02/09/23 14:44	02/18/23 09:34	1
18O2 PFHxS	110		25 - 150	02/09/23 14:44	02/18/23 09:34	1
13C4 PFOS	108		25 - 150	02/09/23 14:44	02/18/23 09:34	1
13C8 FOSA	122		10 - 150	02/09/23 14:44	02/18/23 09:34	1
d3-NMeFOSAA	132		25 - 150	02/09/23 14:44	02/18/23 09:34	1
d5-NEtFOSAA	136		25 - 150	02/09/23 14:44	02/18/23 09:34	1
d-N-MeFOSA-M	88		10 - 150	02/09/23 14:44	02/18/23 09:34	1
d-N-EtFOSA-M	83		10 - 150	02/09/23 14:44	02/18/23 09:34	1
d7-N-MeFOSE-M	94		10 - 150	02/09/23 14:44	02/18/23 09:34	1
d9-N-EtFOSE-M	96		10 - 150	02/09/23 14:44	02/18/23 09:34	1
M2-4:2 FTS	101		25 - 150	02/09/23 14:44	02/18/23 09:34	1
M2-6:2 FTS	105		25 - 150	02/09/23 14:44	02/18/23 09:34	1
M2-8:2 FTS	105		25 - 150	02/09/23 14:44	02/18/23 09:34	1
13C3 HFPO-DA	105		25 - 150	02/09/23 14:44	02/18/23 09:34	1
13C2 10:2 FTS	98		25 - 150	02/09/23 14:44	02/18/23 09:34	1

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Client Sample ID: MW-10 DUP

Date Collected: 02/06/23 13:15
Date Received: 02/07/23 10:15

Lab Sample ID: 500-229080-3

Matrix: Water

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.4**		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluoropentanoic acid (PFPeA)	**2.1**		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorohexanoic acid (PFHxA)	**2.8**		1.9	0.55	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluoroheptanoic acid (PFHpA)	**0.97**	**J**	1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorooctanoic acid (PFOA)	**4.2**		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorononanoic acid (PFNA)	**0.29**	**J**	1.9	0.25	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorobutanesulfonic acid (PFBS)	**6.7**		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluoropentanesulfonic acid (PFPeS)	**0.65**	**J**	1.9	0.28	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorohexanesulfonic acid (PFHxS)	**26**		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluoroheptanesulfonic acid (PFHpS)	**0.56**	**J**	1.9	0.18	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorooctanesulfonic acid (PFOS)	**88**		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorododecanesulfonic acid (PFDoS)	<0.91		1.9	0.91	ng/L		02/09/23 14:44	02/18/23 09:44	1
Perfluorooctanesulfonamide (FOSA)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 09:44	1
NEtFOSA	<0.82		1.9	0.82	ng/L		02/09/23 14:44	02/18/23 09:44	1
NMeFOSA	<0.40		1.9	0.40	ng/L		02/09/23 14:44	02/18/23 09:44	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 09:44	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 09:44	1
NMeFOSE	<1.3		3.8	1.3	ng/L		02/09/23 14:44	02/18/23 09:44	1
NEtFOSE	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:44	1
4:2 FTS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:44	1
6:2 FTS	<2.3		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:44	1
8:2 FTS	<0.43		1.9	0.43	ng/L		02/09/23 14:44	02/18/23 09:44	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		02/09/23 14:44	02/18/23 09:44	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		02/09/23 14:44	02/18/23 09:44	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:44	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:44	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C5 PFPeA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C2 PFHxA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C4 PFHpA	*102*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C4 PFOA	*107*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C5 PFNA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C2 PFDA	*115*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C2 PFUnA	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C2 PFDoA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:44*	*1*

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-10 DUP
Lab Sample ID: 500-229080-3
Date Collected: 02/06/23 13:15
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	101		25 - 150	02/09/23 14:44	02/18/23 09:44	1
18O2 PFHxS	101		25 - 150	02/09/23 14:44	02/18/23 09:44	1
13C4 PFOS	99		25 - 150	02/09/23 14:44	02/18/23 09:44	1
13C8 FOSA	122		10 - 150	02/09/23 14:44	02/18/23 09:44	1
d3-NMeFOSAA	123		25 - 150	02/09/23 14:44	02/18/23 09:44	1
d5-NEtFOSAA	132		25 - 150	02/09/23 14:44	02/18/23 09:44	1
d-N-MeFOSA-M	79		10 - 150	02/09/23 14:44	02/18/23 09:44	1
d-N-EtFOSA-M	72		10 - 150	02/09/23 14:44	02/18/23 09:44	1
d7-N-MeFOSE-M	94		10 - 150	02/09/23 14:44	02/18/23 09:44	1
d9-N-EtFOSE-M	92		10 - 150	02/09/23 14:44	02/18/23 09:44	1
M2-4:2 FTS	97		25 - 150	02/09/23 14:44	02/18/23 09:44	1
M2-6:2 FTS	101		25 - 150	02/09/23 14:44	02/18/23 09:44	1
M2-8:2 FTS	115		25 - 150	02/09/23 14:44	02/18/23 09:44	1
13C3 HFPO-DA	98		25 - 150	02/09/23 14:44	02/18/23 09:44	1
13C2 10:2 FTS	92		25 - 150	02/09/23 14:44	02/18/23 09:44	1

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

Client Sample ID: MW-11
Date Collected: 02/06/23 14:15
Date Received: 02/07/23 10:15

Lab Sample ID: 500-229080-4
Matrix: Water

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**5.8**		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluoropentanoic acid (PFPeA)	**5.0**		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorohexanoic acid (PFHxA)	**6.1**		1.9	0.55	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluoroheptanoic acid (PFHpA)	**2.3**		1.9	0.24	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorooctanoic acid (PFOA)	**5.9**		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorononanoic acid (PFNA)	<0.25		1.9	0.25	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorobutanesulfonic acid (PFBS)	**7.1**		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluoropentanesulfonic acid (PFPeS)	**0.48**	**J**	1.9	0.28	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorohexanesulfonic acid (PFHxS)	**10**		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluoroheptanesulfonic acid (PFHpS)	**0.38**	**J**	1.9	0.18	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorooctanesulfonic acid (PFOS)	**14**		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorododecanesulfonic acid (PFDoS)	<0.91		1.9	0.91	ng/L		02/09/23 14:44	02/18/23 09:55	1
Perfluorooctanesulfonamide (FOSA)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 09:55	1
NEtFOSA	<0.82		1.9	0.82	ng/L		02/09/23 14:44	02/18/23 09:55	1
NMeFOSA	<0.41		1.9	0.41	ng/L		02/09/23 14:44	02/18/23 09:55	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 09:55	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 09:55	1
NMeFOSE	<1.3		3.8	1.3	ng/L		02/09/23 14:44	02/18/23 09:55	1
NEtFOSE	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 09:55	1
4:2 FTS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:55	1
6:2 FTS	<2.4		4.7	2.4	ng/L		02/09/23 14:44	02/18/23 09:55	1
8:2 FTS	<0.43		1.9	0.43	ng/L		02/09/23 14:44	02/18/23 09:55	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		02/09/23 14:44	02/18/23 09:55	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		02/09/23 14:44	02/18/23 09:55	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 09:55	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 09:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C5 PFPeA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C2 PFHxA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C4 PFHpA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C4 PFOA	*109*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C5 PFNA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C2 PFDA	*110*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C2 PFUnA	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C2 PFDoA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 09:55*	*1*

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-11
Lab Sample ID: 500-229080-4
Date Collected: 02/06/23 14:15
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	99		25 - 150	02/09/23 14:44	02/18/23 09:55	1
18O2 PFHxS	101		25 - 150	02/09/23 14:44	02/18/23 09:55	1
13C4 PFOS	98		25 - 150	02/09/23 14:44	02/18/23 09:55	1
13C8 FOSA	119		10 - 150	02/09/23 14:44	02/18/23 09:55	1
d3-NMeFOSAA	126		25 - 150	02/09/23 14:44	02/18/23 09:55	1
d5-NEtFOSAA	131		25 - 150	02/09/23 14:44	02/18/23 09:55	1
d-N-MeFOSA-M	80		10 - 150	02/09/23 14:44	02/18/23 09:55	1
d-N-EtFOSA-M	70		10 - 150	02/09/23 14:44	02/18/23 09:55	1
d7-N-MeFOSE-M	96		10 - 150	02/09/23 14:44	02/18/23 09:55	1
d9-N-EtFOSE-M	90		10 - 150	02/09/23 14:44	02/18/23 09:55	1
M2-4:2 FTS	89		25 - 150	02/09/23 14:44	02/18/23 09:55	1
M2-6:2 FTS	97		25 - 150	02/09/23 14:44	02/18/23 09:55	1
M2-8:2 FTS	107		25 - 150	02/09/23 14:44	02/18/23 09:55	1
13C3 HFPO-DA	100		25 - 150	02/09/23 14:44	02/18/23 09:55	1
13C2 10:2 FTS	91		25 - 150	02/09/23 14:44	02/18/23 09:55	1

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: Field Blank
Lab Sample ID: 500-229080-5
Date Collected: 02/06/23 13:00
Matrix: Water
Date Received: 02/07/23 10:15

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.3		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluoropentanoic acid (PFPeA)	<0.46		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorohexanoic acid (PFHxA)	<0.55		1.9	0.55	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorooctanoic acid (PFOA)	<0.81		1.9	0.81	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorohexanesulfonic acid (PFHxS)	<0.54		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorooctanesulfonic acid (PFOS)	<0.51		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorododecanesulfonic acid (PFDoS)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 10:05	1
Perfluorooctanesulfonamide (FOSA)	<0.93		1.9	0.93	ng/L		02/09/23 14:44	02/18/23 10:05	1
NEtFOSA	<0.83		1.9	0.83	ng/L		02/09/23 14:44	02/18/23 10:05	1
NMeFOSA	<0.41		1.9	0.41	ng/L		02/09/23 14:44	02/18/23 10:05	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 10:05	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 10:05	1
NMeFOSE	<1.3		3.8	1.3	ng/L		02/09/23 14:44	02/18/23 10:05	1
NEtFOSE	<0.81		1.9	0.81	ng/L		02/09/23 14:44	02/18/23 10:05	1
4:2 FTS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 10:05	1
6:2 FTS	<2.4		4.7	2.4	ng/L		02/09/23 14:44	02/18/23 10:05	1
8:2 FTS	<0.44		1.9	0.44	ng/L		02/09/23 14:44	02/18/23 10:05	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		02/09/23 14:44	02/18/23 10:05	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		02/09/23 14:44	02/18/23 10:05	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 10:05	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 10:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*102*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C5 PFPeA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C2 PFHxA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C4 PFHpA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C4 PFOA	*107*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C5 PFNA	*102*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C2 PFDA	*111*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C2 PFUnA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C2 PFDoA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C2 PFTeDA	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
13C3 PFBS	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*
18O2 PFHxS	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:05*	*1*

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: Field Blank
Lab Sample ID: 500-229080-5
Date Collected: 02/06/23 13:00
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	97		25 - 150	02/09/23 14:44	02/18/23 10:05	1
13C8 FOSA	109		10 - 150	02/09/23 14:44	02/18/23 10:05	1
d3-NMeFOSAA	125		25 - 150	02/09/23 14:44	02/18/23 10:05	1
d5-NEtFOSAA	129		25 - 150	02/09/23 14:44	02/18/23 10:05	1
d-N-MeFOSA-M	73		10 - 150	02/09/23 14:44	02/18/23 10:05	1
d-N-EtFOSA-M	69		10 - 150	02/09/23 14:44	02/18/23 10:05	1
d7-N-MeFOSE-M	94		10 - 150	02/09/23 14:44	02/18/23 10:05	1
d9-N-EtFOSE-M	90		10 - 150	02/09/23 14:44	02/18/23 10:05	1
M2-4:2 FTS	89		25 - 150	02/09/23 14:44	02/18/23 10:05	1
M2-6:2 FTS	96		25 - 150	02/09/23 14:44	02/18/23 10:05	1
M2-8:2 FTS	100		25 - 150	02/09/23 14:44	02/18/23 10:05	1
13C3 HFPO-DA	103		25 - 150	02/09/23 14:44	02/18/23 10:05	1
13C2 10:2 FTS	86		25 - 150	02/09/23 14:44	02/18/23 10:05	1

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: Equipment Blank
Lab Sample ID: 500-229080-6
Date Collected: 02/06/23 11:00
Matrix: Water
Date Received: 02/07/23 10:15

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.3		4.7	2.3	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluoropentanoic acid (PFPeA)	<0.46		1.9	0.46	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorohexanoic acid (PFHxA)	<0.55		1.9	0.55	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorooctanoic acid (PFOA)	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorohexanesulfonic acid (PFHxS)	<0.54		1.9	0.54	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorooctanesulfonic acid (PFOS)	<0.51		1.9	0.51	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorododecanesulfonic acid (PFDoS)	<0.92		1.9	0.92	ng/L		02/09/23 14:44	02/18/23 10:35	1
Perfluorooctanesulfonamide (FOSA)	<0.93		1.9	0.93	ng/L		02/09/23 14:44	02/18/23 10:35	1
NEtFOSA	<0.82		1.9	0.82	ng/L		02/09/23 14:44	02/18/23 10:35	1
NMeFOSA	<0.41		1.9	0.41	ng/L		02/09/23 14:44	02/18/23 10:35	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		02/09/23 14:44	02/18/23 10:35	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		02/09/23 14:44	02/18/23 10:35	1
NMeFOSE	<1.3		3.8	1.3	ng/L		02/09/23 14:44	02/18/23 10:35	1
NEtFOSE	<0.80		1.9	0.80	ng/L		02/09/23 14:44	02/18/23 10:35	1
4:2 FTS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 10:35	1
6:2 FTS	<2.4		4.7	2.4	ng/L		02/09/23 14:44	02/18/23 10:35	1
8:2 FTS	<0.44		1.9	0.44	ng/L		02/09/23 14:44	02/18/23 10:35	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		02/09/23 14:44	02/18/23 10:35	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		02/09/23 14:44	02/18/23 10:35	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		02/09/23 14:44	02/18/23 10:35	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		02/09/23 14:44	02/18/23 10:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C5 PFPeA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C2 PFHxA	*104*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C4 PFHpA	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C4 PFOA	*111*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C5 PFNA	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C2 PFDA	*112*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C2 PFUnA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C2 PFDoA	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C2 PFTeDA	*109*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
13C3 PFBS	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*
18O2 PFHxS	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 10:35*	*1*

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: Equipment Blank
Lab Sample ID: 500-229080-6
Date Collected: 02/06/23 11:00
Matrix: Water
Date Received: 02/07/23 10:15

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	103		25 - 150	02/09/23 14:44	02/18/23 10:35	1
13C8 FOSA	120		10 - 150	02/09/23 14:44	02/18/23 10:35	1
d3-NMeFOSAA	130		25 - 150	02/09/23 14:44	02/18/23 10:35	1
d5-NEtFOSAA	132		25 - 150	02/09/23 14:44	02/18/23 10:35	1
d-N-MeFOSA-M	89		10 - 150	02/09/23 14:44	02/18/23 10:35	1
d-N-EtFOSA-M	84		10 - 150	02/09/23 14:44	02/18/23 10:35	1
d7-N-MeFOSE-M	102		10 - 150	02/09/23 14:44	02/18/23 10:35	1
d9-N-EtFOSE-M	98		10 - 150	02/09/23 14:44	02/18/23 10:35	1
M2-4:2 FTS	90		25 - 150	02/09/23 14:44	02/18/23 10:35	1
M2-6:2 FTS	99		25 - 150	02/09/23 14:44	02/18/23 10:35	1
M2-8:2 FTS	109		25 - 150	02/09/23 14:44	02/18/23 10:35	1
13C3 HFPO-DA	106		25 - 150	02/09/23 14:44	02/18/23 10:35	1
13C2 10:2 FTS	95		25 - 150	02/09/23 14:44	02/18/23 10:35	1

Definitions/Glossary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Qualifiers

LCMS

Qualifier	Qualifier Description
C	See Case Narrative
J	Reported value was between the limit of detection and the limit of quantitation.

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

QC Association Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

LCMS

Prep Batch: 652906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-229080-1	MW-9	Total/NA	Water	3535	
500-229080-2	MW-10	Total/NA	Water	3535	
500-229080-3	MW-10 DUP	Total/NA	Water	3535	
500-229080-4	MW-11	Total/NA	Water	3535	
500-229080-5	Field Blank	Total/NA	Water	3535	
500-229080-6	Equipment Blank	Total/NA	Water	3535	
MB 320-652906/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-652906/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-652906/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 654426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-229080-1	MW-9	Total/NA	Water	537 (modified)	652906
500-229080-2	MW-10	Total/NA	Water	537 (modified)	652906
500-229080-3	MW-10 DUP	Total/NA	Water	537 (modified)	652906
500-229080-4	MW-11	Total/NA	Water	537 (modified)	652906
500-229080-5	Field Blank	Total/NA	Water	537 (modified)	652906
500-229080-6	Equipment Blank	Total/NA	Water	537 (modified)	652906
MB 320-652906/1-A	Method Blank	Total/NA	Water	537 (modified)	652906
LCS 320-652906/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	652906
LCSD 320-652906/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	652906

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-652906/1-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 652906

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		02/09/23 14:44	02/18/23 08:34	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		02/09/23 14:44	02/18/23 08:34	1
NEtFOSA	<0.87		2.0	0.87	ng/L		02/09/23 14:44	02/18/23 08:34	1
NMeFOSA	<0.43		2.0	0.43	ng/L		02/09/23 14:44	02/18/23 08:34	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		02/09/23 14:44	02/18/23 08:34	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		02/09/23 14:44	02/18/23 08:34	1
NMeFOSE	<1.4		4.0	1.4	ng/L		02/09/23 14:44	02/18/23 08:34	1
NEtFOSE	<0.85		2.0	0.85	ng/L		02/09/23 14:44	02/18/23 08:34	1
4:2 FTS	<0.24		2.0	0.24	ng/L		02/09/23 14:44	02/18/23 08:34	1
6:2 FTS	<2.5		5.0	2.5	ng/L		02/09/23 14:44	02/18/23 08:34	1
8:2 FTS	<0.46		2.0	0.46	ng/L		02/09/23 14:44	02/18/23 08:34	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		02/09/23 14:44	02/18/23 08:34	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		02/09/23 14:44	02/18/23 08:34	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		02/09/23 14:44	02/18/23 08:34	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		02/09/23 14:44	02/18/23 08:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C5 PFPeA	*99*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C2 PFHxA	*94*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C4 PFHpA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C4 PFOA	*103*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C5 PFNA	*100*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C2 PFDA	*106*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C2 PFUnA	*97*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C2 PFDoA	*101*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*02/09/23 14:44*	*02/18/23 08:34*	*1*

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

Lab Sample ID: MB 320-652906/1-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 652906

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	93		25 - 150	02/09/23 14:44	02/18/23 08:34	1
18O2 PFHxS	98		25 - 150	02/09/23 14:44	02/18/23 08:34	1
13C4 PFOS	95		25 - 150	02/09/23 14:44	02/18/23 08:34	1
13C8 FOSA	109		10 - 150	02/09/23 14:44	02/18/23 08:34	1
d3-NMeFOSAA	127		25 - 150	02/09/23 14:44	02/18/23 08:34	1
d5-NEtFOSAA	129		25 - 150	02/09/23 14:44	02/18/23 08:34	1
d-N-MeFOSA-M	90		10 - 150	02/09/23 14:44	02/18/23 08:34	1
d-N-EtFOSA-M	83		10 - 150	02/09/23 14:44	02/18/23 08:34	1
d7-N-MeFOSE-M	99		10 - 150	02/09/23 14:44	02/18/23 08:34	1
d9-N-EtFOSE-M	96		10 - 150	02/09/23 14:44	02/18/23 08:34	1
M2-4:2 FTS	87		25 - 150	02/09/23 14:44	02/18/23 08:34	1
M2-6:2 FTS	94		25 - 150	02/09/23 14:44	02/18/23 08:34	1
M2-8:2 FTS	108		25 - 150	02/09/23 14:44	02/18/23 08:34	1
13C3 HFPO-DA	97		25 - 150	02/09/23 14:44	02/18/23 08:34	1
13C2 10:2 FTS	90		25 - 150	02/09/23 14:44	02/18/23 08:34	1

Lab Sample ID: LCS 320-652906/2-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 652906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	40.0	37.3		ng/L		93	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	39.1		ng/L		98	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	39.8		ng/L		100	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	38.5		ng/L		96	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	39.2		ng/L		98	60 - 135
Perfluorononanoic acid (PFNA)	40.0	38.4		ng/L		96	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	36.4		ng/L		91	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	41.5		ng/L		104	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	37.7		ng/L		94	60 - 135
Perfluorotridecanoic acid (PFTrDA)	40.0	37.4		ng/L		93	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	36.1		ng/L		90	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	32.9		ng/L		93	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.6	38.3		ng/L		102	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	36.5	33.3		ng/L		91	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	39.8		ng/L		104	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	38.1		ng/L		102	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	39.4		ng/L		102	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.0		ng/L		101	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	32.6		ng/L		84	60 - 135

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

Lab Sample ID: LCS 320-652906/2-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 652906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	40.0	38.4		ng/L		96	60 - 135
NEtFOSA	40.0	39.6		ng/L		99	60 - 135
NMeFOSA	40.0	36.6		ng/L		92	60 - 135
NMeFOSAA	40.0	37.1		ng/L		93	60 - 135
NEtFOSAA	40.0	39.6		ng/L		99	60 - 135
NMeFOSE	40.0	37.2		ng/L		93	60 - 135
NEtFOSE	40.0	40.2		ng/L		100	60 - 135
4:2 FTS	37.5	37.0		ng/L		99	60 - 135
6:2 FTS	38.1	36.9		ng/L		97	60 - 135
8:2 FTS	38.4	36.1		ng/L		94	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	42.2		ng/L		112	60 - 135
HFPO-DA (GenX)	40.0	39.0		ng/L		97	60 - 135
9Cl-PF3ONS	37.4	38.6		ng/L		103	60 - 135
11Cl-PF3OUdS	37.8	37.2		ng/L		98	60 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*103*		*25 - 150*
13C5 PFPeA	*103*		*25 - 150*
13C2 PFHxA	*101*		*25 - 150*
13C4 PFHpA	*106*		*25 - 150*
13C4 PFOA	*107*		*25 - 150*
13C5 PFNA	*101*		*25 - 150*
13C2 PFDA	*108*		*25 - 150*
13C2 PFUnA	*98*		*25 - 150*
13C2 PFDoA	*103*		*25 - 150*
13C2 PFTeDA	*103*		*25 - 150*
13C3 PFBS	*97*		*25 - 150*
18O2 PFHxS	*101*		*25 - 150*
13C4 PFOS	*97*		*25 - 150*
13C8 FOSA	*110*		*10 - 150*
d3-NMeFOSAA	*120*		*25 - 150*
d5-NEtFOSAA	*121*		*25 - 150*
d-N-MeFOSA-M	*96*		*10 - 150*
d-N-EtFOSA-M	*88*		*10 - 150*
d7-N-MeFOSE-M	*98*		*10 - 150*
d9-N-EtFOSE-M	*95*		*10 - 150*
M2-4:2 FTS	*87*		*25 - 150*
M2-6:2 FTS	*96*		*25 - 150*
M2-8:2 FTS	*100*		*25 - 150*
13C3 HFPO-DA	*103*		*25 - 150*
13C2 10:2 FTS	*97*		*25 - 150*

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

Lab Sample ID: LCSD 320-652906/3-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 652906

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	39.2		ng/L		98	60 - 135	5	30
Perfluoropentanoic acid (PFPeA)			40.0	39.6		ng/L		99	60 - 135	1	30
Perfluorohexanoic acid (PFHxA)			40.0	40.6		ng/L		102	60 - 135	2	30
Perfluoroheptanoic acid (PFHpA)			40.0	40.9		ng/L		102	60 - 135	6	30
Perfluorooctanoic acid (PFOA)			40.0	41.2		ng/L		103	60 - 135	5	30
Perfluorononanoic acid (PFNA)			40.0	40.4		ng/L		101	60 - 135	5	30
Perfluorodecanoic acid (PFDA)			40.0	37.7		ng/L		94	60 - 135	4	30
Perfluoroundecanoic acid (PFUnA)			40.0	42.8		ng/L		107	60 - 135	3	30
Perfluorododecanoic acid (PFDoA)			40.0	38.3		ng/L		96	60 - 135	2	30
Perfluorotridecanoic acid (PFTrDA)			40.0	37.4		ng/L		94	60 - 135	0	30
Perfluorotetradecanoic acid (PFTeA)			40.0	39.5		ng/L		99	60 - 135	9	30
Perfluorobutanesulfonic acid (PFBS)			35.5	33.6		ng/L		95	60 - 135	2	30
Perfluoropentanesulfonic acid (PFPeS)			37.6	37.5		ng/L		100	60 - 135	2	30
Perfluorohexanesulfonic acid (PFHxS)			36.5	33.8		ng/L		93	60 - 135	1	30
Perfluoroheptanesulfonic acid (PFHpS)			38.2	40.5		ng/L		106	60 - 135	2	30
Perfluorooctanesulfonic acid (PFOS)			37.2	37.8		ng/L		102	60 - 135	1	30
Perfluorononanesulfonic acid (PFNS)			38.5	39.9		ng/L		104	60 - 135	1	30
Perfluorodecanesulfonic acid (PFDS)			38.6	40.7		ng/L		106	60 - 135	4	30
Perfluorododecanesulfonic acid (PFDoS)			38.8	36.2		ng/L		93	60 - 135	11	30
Perfluorooctanesulfonamide (FOSA)			40.0	39.5		ng/L		99	60 - 135	3	30
NEtFOSA			40.0	43.1		ng/L		108	60 - 135	9	30
NMeFOSA			40.0	35.5		ng/L		89	60 - 135	3	30
NMeFOSAA			40.0	38.0		ng/L		95	60 - 135	3	30
NEtFOSAA			40.0	37.7		ng/L		94	60 - 135	5	30
NMeFOSE			40.0	36.9		ng/L		92	60 - 135	1	30
NEtFOSE			40.0	43.5		ng/L		109	60 - 135	8	30
4:2 FTS			37.5	36.5		ng/L		97	60 - 135	1	30
6:2 FTS			38.1	37.3		ng/L		98	60 - 135	1	30
8:2 FTS			38.4	36.1		ng/L		94	60 - 135	0	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			37.8	42.2		ng/L		112	60 - 135	0	30
HFPO-DA (GenX)			40.0	39.3		ng/L		98	60 - 135	1	30
9Cl-PF3ONS			37.4	38.6		ng/L		103	60 - 135	0	30
11Cl-PF3OUdS			37.8	38.2		ng/L		101	60 - 135	3	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*106*		*25 - 150*
13C5 PFPeA	*108*		*25 - 150*
13C2 PFHxA	*105*		*25 - 150*

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

Lab Sample ID: LCSD 320-652906/3-A
Matrix: Water
Analysis Batch: 654426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 652906

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFHpA	106		25 - 150
13C4 PFOA	109		25 - 150
13C5 PFNA	106		25 - 150
13C2 PFDA	112		25 - 150
13C2 PFUnA	99		25 - 150
13C2 PFDoA	107		25 - 150
13C2 PFTeDA	106		25 - 150
13C3 PFBS	105		25 - 150
18O2 PFHxS	106		25 - 150
13C4 PFOS	105		25 - 150
13C8 FOSA	117		10 - 150
d3-NMeFOSAA	135		25 - 150
d5-NEtFOSAA	138		25 - 150
d-N-MeFOSA-M	79		10 - 150
d-N-EtFOSA-M	71		10 - 150
d7-N-MeFOSE-M	99		10 - 150
d9-N-EtFOSE-M	90		10 - 150
M2-4:2 FTS	93		25 - 150
M2-6:2 FTS	97		25 - 150
M2-8:2 FTS	105		25 - 150
13C3 HFPO-DA	106		25 - 150
13C2 10:2 FTS	102		25 - 150

Lab Chronicle

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Client Sample ID: MW-9
Lab Sample ID: 500-229080-1
Date Collected: 02/06/23 11:45
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 09:24

Client Sample ID: MW-10
Lab Sample ID: 500-229080-2
Date Collected: 02/06/23 13:10
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 09:34

Client Sample ID: MW-10 DUP
Lab Sample ID: 500-229080-3
Date Collected: 02/06/23 13:15
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 09:44

Client Sample ID: MW-11
Lab Sample ID: 500-229080-4
Date Collected: 02/06/23 14:15
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 09:55

Client Sample ID: Field Blank
Lab Sample ID: 500-229080-5
Date Collected: 02/06/23 13:00
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 10:05

Client Sample ID: Equipment Blank
Lab Sample ID: 500-229080-6
Date Collected: 02/06/23 11:00
Matrix: Water
Date Received: 02/07/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			652906	EH	EET SAC	02/09/23 14:44
Total/NA	Analysis	537 (modified)		1	654426	RS1	EET SAC	02/18/23 10:35

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

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

Laboratory: Eurofins 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	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

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

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

Chain of Custody Record

eurofins

Client Information	Sampler: Ryan Matzek	Lab PM: Fredrick Sandie	Carrier Tracking No(s):	COC No: 500-110097-43337
Client Contact: Mr Robert Langdon	Phone: 608 400 9507	E Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: SCS Engineers	PWS D:	Analysis Requested		Job #: 500-229080
Address: 2830 Dairy D	Due Date Requested:			Preservation Codes: A HCL; B NaOH; C Zn Acetate; D Nitric Acid; E NaHSO4; F MeOH; G Amchlor; H Ascorbic Acid; I ce; 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; Y Trizma; Z other specify; Other
City: Mad son	TAT Requested (days):			
State Zip: WI 53718	Compliance Project: Δ Yes Δ No			
Phone: 500-229080 COC	PO #: 25221094 00			
Email: rlangdon@scsengineers com	WO #:			
Project Name: Black Hawk Junction 25221094 00	Project #: 50006561			
Site:	SSOW#:			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B VOC	PFC_IDA_WI - PFAS, Standard List (33 analytes)	Total Number of containers	Special Instructions/Note
				Preservation Code:				A	N		
1	MW-9	2/6/23	1145	G	Water				X		
2	MW-10		1310		Water				X		
3	MW-10 DUP		1315		Water				X		
4	MW-11		1415		Water				X		
5	Field Blank		1300		Water				X		
6	Equipment Blank		1100		Water				X		
					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
[signature]	2/6/23 1800	SCS	[signature]	2/7/23 1015	BETA
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	
		2.7-2.1.7	

500-229080 Waybi

ORIGIN ID:RRLA (262) 202-5955
ZANA BAJALAN
SCS ENGINEERS - MADISON
2830 DAIRY DRIVE

MADISON, WI 53718
UNITED STATES US

SHIP DATE: 27JAN23
ACTWGT: 30.00 LB MAN
CAD: 0269688/CAFE3616

TO SAMPLE RECIEPT
EUROFINS CHICAGO
2417 BOND STREET

UNIVERSITY PARK IL 60484
(708) 534-6200 REF:
INV:
PO: DEPT:

RMA:

FedEx Express

FedEx
TRK# 0221 6283 9315 6000

TUE - 07 FEB 10:30A
PRIORITY OVERNIGHT

N JOTA

60484
IL-US ORD

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2/20/2023

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

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-170614.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - Wisconsin		Job #: 500-229080-1
Address: 880 Riverside Parkway, ,	**Due Date Requested:** 2/20/2023			
City: West Sacramento	**TAT Requested (days):**			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: SCS: General Analyses	Project #: 50006561			
Site:	SSOW#:			

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, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

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)	PFC_IDA_WI/3535_PFC_28D PFAS, Standard List (33 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-9 (500-229080-1)	2/6/23	11:45 Central		Water			X	2	Screen please
MW-10 (500-229080-2)	2/6/23	13:10 Central		Water			X	2	Screen please
MW-10 DUP (500-229080-3)	2/6/23	13:15 Central		Water			X	2	Screen please
MW-11 (500-229080-4)	2/6/23	14:15 Central		Water			X	2	Screen please
Field Blank (500-229080-5)	2/6/23	13:00 Central		Water			X	2	Screen please
Equipment Blank (500-229080-6)	2/6/23	11:00 Central		Water			X	2	Screen please

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our 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 Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

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: [signature]	Date/Time: 2/7/23 1345	Company	Received by: [signature]		Date/Time: 2-8-23 955	Company [signature]
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company
Custody Seals Intact: (Yes) Δ No	Custody Seal No.: 0294022		Cooler Temperature(s) °C and Other Remarks: 1.7c			

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 500-229080-1

Login Number: 229080
List Number: 1
Creator: Scott, Sherri L

List Source: Eurofins Chicago

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	1.7
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 500-229080-1

Login Number: 229080
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 02/08/23 01:30 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	2194022
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c
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?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Sacramento
Sample Receiving Notes

Job: 500-229080 Field Sheet

Tracking # : 6180719357 54

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

GSO / OnTrac / Goldstreak / USPS / Other _____

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

Therm. ID: T04 Corr. Factor: (+ / -) _____ °C

Ice 1 Wet 1 Gel _____ Other _____

Cooler Custody Seal: 219402

Cooler ID: _____

Temp Observed: 1.7 °C Corrected: 1.7 °C

From: Temp Blank ☐ Sample ☑

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

Initials: KB Date: 2.8.23

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

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

Initials: KB Date: 2.8.23

Notes: _____

Trizma Lot #(s): _____

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

Initials: KB Date: 2.8.23

Isotope Dilution Summary

Client: SCS Engineers
Project/Site: Black Hawk Junction - 25221094.00

Job ID: 500-229080-1

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)
500-229080-1	MW-9	97	100	99	100	105	99	107	94
500-229080-2	MW-10	100	104	105	105	111	104	111	104
500-229080-3	MW-10 DUP	95	100	101	102	107	101	115	99
500-229080-4	MW-11	98	103	103	103	109	104	110	99
500-229080-5	Field Blank	102	103	101	105	107	102	111	101
500-229080-6	Equipment Blank	104	103	104	106	111	106	112	103
LCS 320-652906/2-A	Lab Control Sample	103	103	101	106	107	101	108	98
LCSD 320-652906/3-A	Lab Control Sample Dup	106	108	105	106	109	106	112	99
MB 320-652906/1-A	Method Blank	95	99	94	100	103	100	106	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
500-229080-1	MW-9	93	95	99	99	98	115	117	121
500-229080-2	MW-10	104	102	104	110	108	122	132	136
500-229080-3	MW-10 DUP	100	104	101	101	99	122	123	132
500-229080-4	MW-11	101	105	99	101	98	119	126	131
500-229080-5	Field Blank	104	106	99	100	97	109	125	129
500-229080-6	Equipment Blank	106	109	105	106	103	120	130	132
LCS 320-652906/2-A	Lab Control Sample	103	103	97	101	97	110	120	121
LCSD 320-652906/3-A	Lab Control Sample Dup	107	106	105	106	105	117	135	138
MB 320-652906/1-A	Method Blank	101	105	93	98	95	109	127	129

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
500-229080-1	MW-9	84	77	87	87	87	97	103	99
500-229080-2	MW-10	88	83	94	96	101	105	105	105
500-229080-3	MW-10 DUP	79	72	94	92	97	101	115	98
500-229080-4	MW-11	80	70	96	90	89	97	107	100
500-229080-5	Field Blank	73	69	94	90	89	96	100	103
500-229080-6	Equipment Blank	89	84	102	98	90	99	109	106
LCS 320-652906/2-A	Lab Control Sample	96	88	98	95	87	96	100	103
LCSD 320-652906/3-A	Lab Control Sample Dup	79	71	99	90	93	97	105	106
MB 320-652906/1-A	Method Blank	90	83	99	96	87	94	108	97

		Percent Isotope Dilution Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	M102FTS (25-150)
500-229080-1	MW-9	90
500-229080-2	MW-10	98
500-229080-3	MW-10 DUP	92
500-229080-4	MW-11	91
500-229080-5	Field Blank	86
500-229080-6	Equipment Blank	95
LCS 320-652906/2-A	Lab Control Sample	97
LCSD 320-652906/3-A	Lab Control Sample Dup	102
MB 320-652906/1-A	Method Blank	90

Surrogate Legend

PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

Isotope Dilution Summary

Client: SCS Engineers
Job ID: 500-229080-1
Project/Site: Black Hawk Junction - 25221094.00

PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
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
M102FTS = 13C2 10:2 FTS