Phase 2 Environmental Site Assessment

Hill Farms Heating Plant
4622 University Avenue
Madison, Wisconsin 53705

Prepared for:

Wisconsin Department of Administration
Division of Facilities & Transportation Services
101 E. Wilson Street
Madison, Wisconsin 53703

SCS ENGINEERS

25221165.00 | May 4, 2022

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

May 4, 2022
File No. 25221165.00

Mr. Terry Dunn
Wisconsin Department of Administration
Division of Facilities & Transportation Services
101 E. Wilson Street
Madison, WI 53703

Subject: Phase 2 Environmental Site Assessment Report
Hill Farms Heating Plant
4622 University Avenue, Madison, Wisconsin

Dear Mr. Dunn:

SCS Engineers (SCS) completed a Phase 2 Environmental Site Assessment (ESA) for the Hill Farms Heating Plant (Heating Plant) property located at 4622 University Avenue in Madison, Wisconsin (**Figure 1**). This letter summarizes the findings of the ESA performed at the 4622 University Avenue property (Subject Property).

SITE BACKGROUND

The Subject Property holds two buildings, a rectangular Office Building centrally located and oriented east and west, and a Heating Plant north of the Office Building. The Office Building has three sections, Building D, E, and L. The Wisconsin Department of Administration (DOA), Wisconsin Department of Justice (DOJ), and Wisconsin Technical College System (WTCS) occupy the Office Building.

The Subject Property was originally farmland with farm buildings present at the southeast corner. In 1961, the Wisconsin DOA redeveloped the Subject Property with State offices and the Heating Plant. The Heating Plant provided heat to the Office Building and second State of Wisconsin office building (Hill Farms office building) southwest of the Subject Property across University Avenue. Since 2018, when the Hill Farms office building to the south was demolished, the Heating Plant has been solely used to heat the Office Building. The Heating Plant is currently scheduled to be demolished. Heating distribution upgrades to Building D of the Office Building began in late 2021.

At the request of the Wisconsin DOA in cooperation with BWZ Architects, SCS completed a Phase 1 ESA for the Subject Property in March 2022. The Phase 1 ESA identified the following recognized environmental conditions (RECs) on the Subject Property:

1. ***The presence of residual petroleum impacted soil and subsequent land use restrictions following the closure and removal of a 10,000-gallon gasoline underground storage tank (UST).*** *Petroleum impacts were identified during the closure and removal of a 10,000-gallon gasoline UST in 1991 southeast of the Heating Plant. Impacted soils were excavated however, excavation confirmation samples indicated some remaining impacted soils at depth. Groundwater samples collected in the assumed downgradient direction of the former UST detected lead at a concentration equal to the Wisconsin Department of Natural*

Resources (WDNR) Preventative Action Limit (PAL) in one sample. The WDNR deemed the remedial investigation satisfactory and closed the leaking underground storage tank (LUST) case with a deed restriction requiring remediation of impacted soil if encountered in the future. The residual impacted soils and related land use restrictions are considered a CREC, which is a REC.

2. ***The historical presence of additional USTs, including a 2,000-gallon leaded gasoline UST registered on the Property, and as many as two additional unregistered UST of unknown size and contents. A lack of tank records and closure assessments cannot rule out potential petroleum impacts to the subsurface related to these tanks****. Database records indicate a 2,000-gallon leaded gasoline tank was reportedly removed from the Property in 1971 and documentation of its removal is unavailable. Construction plans from 1966 identify a gasoline UST to be removed and replaced in conjunction with the construction of Building L. These references may indicate the presence of between one and three USTs, none of which have tank closure assessment information, and may have related petroleum impacts present in the subsurface.*

3. ***The lack of records and likely historical use of fuel oil on the Property****. A farmhouse was present on the Property from the early 1900s through the 1950s, which includes an era when fuel oil was a common source of heat. Fuel oil tanks of that era were not commonly registered and therefore records are limited by default. Use of fuel oil for heating that farmhouse may have resulted in petroleum releases to the subsurface that have not been assessed. The building is no longer present, but no redevelopment has been completed in that area.*

4. ***Presence and use of a hydraulic lift on the Property****. A hydraulic lift was observed within a loading dock at the northwest corner of Building D. The hydraulic oil reservoir appeared to be below ground. Potential releases could occur from underground hydraulic oil reservoirs.*

The Phase 1 ESA also identified the following historical REC and potential risk:

<u>Historical RECs</u>

1. ***A former LUST case related to two large USTs used for heating plant fuel.*** *Soil impacts were identified during the removal of the USTs in 1996, and a remedial excavation was completed, though limited petroleum impacts were identified in soil in one confirmation sample. Follow-up investigation did not identify soil and groundwater impacts. Commerce closed the LUST case without use restrictions.*

<u>Additional Potential Risk</u>

1. ***Potential risk of PFAs impacts to the subsurface****. The City of Madison Fire Department provided a record of a fire that occurred on the Property at 4630 University Avenue address. The record indicates a dumpster fired occurred on September 1, 2017 near loading docks. The fire was contained to the metal dumpster and put out with 2-gallons of foam and 600-gallons of water. The fire surpassing foam may have contained non-per-and polyfluoroalkyl substance (PFAs) as the City of Madison Fire Department began using non-PFAs containing foam in 2019.*

In response to the results of the Phase 1 ESA, SCS recommended a Phase 2 ESA to address the RECs identified on the Subject Property, specifically focusing on RECs within the vicinity of subsurface work required for the planned Heating Plant upgrades. A detailed site map of the Subject Property is included as **Figure 2**.

PHASE 2 ENVIRONMENTAL SITE ASSESSMENT

Field Activities and Observations

On April 6, 2022, an SCS geologist, Mrs. Jackie Rennebohm, oversaw the drilling of eight direct-push soil borings (GP1 through GP8) at the Subject Property. The boring locations are shown on **Figure 3**. Drilling services were provided by On-site Environmental Services, Inc. of Sun Prairie, Wisconsin.

The borings were located to address concerns relating to the potential risks of PFAs from a dumpster fire and residual petroleum impacts from former USTs located on the east and west ends of the Heating Plant and near the northeast corner of Building L and northwest corner of Building E.

Borings GP1, GP2, GP4, and GP8 were advanced to 15 feet below ground surface (bgs) using a Geoprobe™ drill rig. Borings GP3, GP5, GP6, and GP7 were planned to extend to 15 feet bgs but hit refusal (shallow bedrock) between 12 to 14 feet bgs. Boring logs were completed for each boring and site soils were classified following the Unified Soil Classification System (USCS) and screened with a photoionization detector (PID).

Soils observed in the borings generally consisted of silt with varying amounts of clay, fine sand, and gravel, overlying lean clay, and poorly graded fine sand. No petroleum odors, stains, or other indications of a release were observed in the soil borings. Non-native fill soils were observed in all borings that extended to depths between 5 to 12 feet bgs. SCS observed small, lightweight, black, shiny, porous debris (possibly coal and/or cinders) in borings GP2, GP3, and GP4 below the asphalt surface. Groundwater was not encountered during the investigation. The depth to groundwater is estimated to be greater than 40 feet bgs. Boring logs and boring abandonment forms are included in **Appendix A**.

One soil sample was collected from each boring for laboratory analysis and were submitted to Pace Analytical (Pace) of Green Bay, Wisconsin. Soil cuttings were thin spread on site. Soils were analyzed for the following:

Analysis	Borings
PFAs	GP1, GP2 (field blank collected)
Petroleum volatile organic compounds (PVOCs)	GP3, GP4, GP5, GP6, GP7, GP8
Polycyclic aromatic hydrocarbons (PAHs)	GP3, GP4
Lead and naphthalene	GP5, GP6, GP7,GP8

On-site Environmental Services, Inc. decontaminated their drilling equipment prior to sampling borings GP1 and GP2 where soils were sampled for PFAs. After decontamination and prior to drilling,

SCS collected a field blank by running PFAs free water through a drilling rod. The equipment blank was collected to indicate if the drilling equipment contained PFAs.

Soil Analytical Results

PVOCs and Lead

No PVOCs and naphthalene were detected in soil from borings GP3, GP4, GP5, GP6, GP7, and GP8. Lead was detected in GP5, GP7, and GP8 below the laboratory limit of quantitation (LOQ) and is therefore an estimated concentration. Soil analytical results for PVOCs, naphthalene, and lead are summarized in Table 1.

PAHs

Several PAHs were detected in boring GP3 above the NR 720 groundwater pathway and non-industrial direct contact residual contaminant levels (RCLs). The PAHs with RCL exceedances include:

- Benzo(b)fluoranthene at 1,360 micrograms per kilogram (µg/kg); exceeds the groundwater pathway and non-industrial direct contact RCLs.
- Benzo(a)pyrene at 994 µg/kg; exceeds the groundwater pathway and non-industrial direct contact RCLs.
- Chrysene at 1,100 µg/kg; exceeds the groundwater pathway RCL.

In GP3, PAH dibenzo(a,h)anthracene was detected at an estimated concentration below the LOQ and is therefore not a true NR 720 RCL exceedance under NR 720.07(2)(c).

No PAHs were detected in boring GP4 in excess of NR 720 standards. Soil analytical results for PAHs are summarized in Table 2.

PFAs

Two PFAs were detected in boring GP1 and three PFAs were detected in boring GP2. The detected PFAs include:

- Perfluoropentanoic acid (PFBA) at 0.10 µg/kg in GP1 and at 0.17 µg/kg in GP2.
- Perfluoroheptanoic acid (PFHpA) at 0.10 µg/kg in GP2.
- Perfluorooctanesulfonic acid (PFOS) at 0.16 µg/kg in GP2.
- 6:2 Fluorotelomer sulfonic acid (6:2 FTS) at 2.3 µg/kg in GP1.

Three additional PFAs were detected below the LOQ and are therefore estimated concentrations. No PFAs were detected in the equipment blank. Soil analytical results for PFAs are summarized in Table 3.

The laboratory analytical reports are included in **Appendix B**.

CONCLUSIONS

SCS performed a Phase 2 ESA to address the RECs identified on the Subject Property, specifically focusing on RECs within the vicinity of subsurface work required for the planned Heating Plant upgrades.

Borings GP1 and GP2 focused on the area of potential PFAs impacts from firefighting foam used during a dumpster fire response in 2017. Boring GP3 was installed in the vicinity of former heating oil USTs and petroleum impacted soils that were removed in 1996. Borings GP4 though GP7 focused on the area of a former gasoline UST and residual petroleum contaminated soils. Boring GP8 was installed in the vicinity of a UST identified on construction plans from 1966 with unknown documentation of its removal.

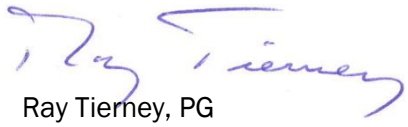
The following conclusions are based on the results of this assessment:

- No petroleum impacts to soil were identified in the field and laboratory results.
- Non-native fill soil was observed at all boring locations and generally consists of silt with varying amounts of clay, sand, and gravel. It ranges in thickness from approximately 5 to 12 feet.
- Debris that appeared to consist of a mixture of coal and/or cinders was observed in shallow fill soils in borings GP2, GP3, and GP4. The debris was observed in these borings at depths between 0.5 to 3.5 feet bgs.
- PAHs were detected in boring GP3 at concentrations in excess of their respective NR 720 RCLs. No PAHs were detected in boring GP4 in excess of NR 720 standards. The sample for GP4 was collected from fill soils that did not contain debris. The elevated PAH detections appear to be associated with fill soils containing debris.
- If excavated, the fill soils which contain the coal and/or cinder debris will need to be managed appropriately.
- PFAs were detected in soil at GP1 and GP2. Note, disposing of soil containing any detectable PFAs compounds at a standard solid waste landfill is becoming increasingly problematic. We recommend that we review the likely soil excavation area with the Heating Plant demolition project team and discuss these sampling results and our proposed soil management strategies with the Wisconsin Department of Natural Resources.

Please do not hesitate to contact Ray at (608) 957-4225 or rtierney@scsengineers.com with any questions.

Sincerely,

Jackie Rennebohm
Staff Geologist
SCS Engineers



Ray Tierney, PG
Vice President
SCS Engineers

JR/AJR/RT

Encl. Table 1 – Soil Analytical Results Summary – PVOCs and Lead
Table 2 – Soil Analytical Results Summary – PAHs
Table 3 – Soil Analytical Results Summary - PFAs
Figure 1 – Site Location Map
Figure 2 – Subject Property Features
Figure 3 – Boring Locations
Appendix A – Soil Boring Logs and Abandonment Forms
Appendix B – Pace Analytical Laboratory Reports dated April 14, 2022 and April 25, 2022

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Tables

Table 1. Soil Analytical Results Summary - PVOCs and Lead
DOA Hill Farms Heating Plant / SCS Engineers Project #25221165.00
(Results are in µg/kg, except where noted otherwise)

Sample	Date	Depth (feet)	PID (ppm)	Lab Notes	Benzene	Ethylbenzene	Toluene	Xylenes	1,2,4-TMB	1,3,5-TMB	1,2,4- & 1,3,5-TMB Combined	MTBE	Naphthalene	Lead (mg/kg)	Other VOCs
GP-3	4/6/2022	8	9.3	--	<14.5	<14.5	<15.4	<44.1	<18.2	<19.7	<37.9	<17.9	NA	NA	NA
GP-4	4/6/2022	3.5	4.5	--	<13.2	<13.2	<14.0	<40.1	<16.6	<17.9	<34.5	<16.3	NA	NA	NA
GP-5	4/6/2022	4	4.9	--	<14.1	<14.1	<14.9	<42.7	<17.6	<19.0	<36.6	<17.4	<18.4	2.0 J	NA
GP-6	4/6/2022	14	4.4	--	<18.8	<18.8	<20.0	<57.2	<23.6	<25.5	<49.1	<23.3	<24.7	<3.8 D3	NA
GP-7	4/6/2022	11	5.0	--	<13.8	<13.8	<14.6	<41.7	<17.2	<18.6	<35.8	<17.0	<18.0	3.9 J,D3	NA
GP-8	4/6/2022	12	8.2	--	<13.5	<13.5	<14.3	<40.8	<16.9	<18.2	<35.1	<16.6	<17.6	1.6 J	NA
Trip Blank	4/6/2022	--	--	--	<11.9	<11.9	<12.6	<36.1	<14.9	<16.1	<31.0	<14.7	NA	NA	NA
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2					5.1	1,570	1,107.2	3,960	(a)		1,378.7	27	658.2	27	
NR 720 Non-Industrial Direct Contact RCLs					1,600	8,020	818,000	260,000	219,000	182,000	NE	63,800	5,520	400	
NR 720 Industrial Direct Contact RCLs					7,070	35,400	818,000	260,000	219,000	182,000	NE	282,000	24,100	800	
CAS No.					71-43-2	100-41-4	108-88-3	1330-20-7	95-63-6	108-67-8	--	1634-04-4	91-20-3	7439-92-1	

Abbreviations:
µg/kg = micrograms per kilogram or parts per billion (ppb)
mg/kg - milligrams per kilogram or parts per million (ppm)
CAS No. = Chemical Abstracts Service Number
PVOCs = Petroleum Volatile Organic Compounds
PID = Photoionization Detector
ppm = parts per million
RCLs = Residual Contaminant Levels
MTBE = Methyl-tert-butyl ether
TMB = Trimethylbenzene
VOCs = Volatile Organic Compounds
NA = Not Analyzed
NE = No Standard Established
-- = Not Applicable

Notes:
Bold+underlined values exceed an NR 720 RCL, as of December 2018.
(a) NR 720 Groundwater Pathway RCLs for 1,2,4 and 1,3,5 Trimethylbenzene Combined = 1,378.7

Laboratory Notes/Qualifiers:
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
J = Estimated concentration at or above the Limit of Detection and below the Limit of Quantitation.

Created by: LMH Date: 4/20/2022
Last revision by: LMH Date: 4/20/2022
Checked by: REO Date: 4/21/2022
Proj Mgr QA/QC: RT Date: 5/4/2022

I:\25221165.00\Data and Calculations\Tables\[1_Soil_PVOCs and Lead.xlsx]Soil PVOCs

Table 2. Soil Analytical Results Summary - PAHs
DOA Hill Farms Heating Plant / SCS Engineers Project #25221165.00
(Results are in µg/kg, except where noted otherwise)

Sample	Date	Depth (feet)	Lab Notes	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(a) pyrene	Benzo(ghi) perylene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene
GP-3	4/6/2022	2.5	--	<46.3	<45.0	89.4 J	658	**1,360**	667	**994**	867	**1,100**	**181** J	1,980	<42.8	673	<52.1	<52.2	<34.8	639	1,570
GP-4	4/6/2022	3.5	--	<2.3	<2.2	<2.2	13.1 J	23.8	9.6 J	14.6 J	12.9 J	23.8	3.2 J	19.2	<2.1	6.7 J	15.2 J	17.2 J	9.3 J	20.1	16.4 J
NR 720 Groundwater Pathway RCLs with a Wisconsin-Default Dilution Factor of 2				NE	NE	196,949.2	NE	478.1	NE	470	NE	144.2	NE	88,877.8	14,829.9	NE	NE	NE	658.2	NE	54,545.5
NR 720 Non-Industrial Direct Contact RCLs				3,590,000	NE	17,900,000	1,140	1,150	11,500	115	NE	115,000	115	2,390,000	2,390,000	1,150	17,600	239,000	5,520	NE	1,790,000
NR 720 Industrial Direct Contact RCLs				45,200,000	NE	100,000,000	20,800	21,100	211,000	2,110	NE	2,110,000	2,110	30,100,000	30,100,000	21,100	72,700	3,010,000	24,100	NE	22,600,000
CAS No.				83-32-9	208-96-8	120-12-7	56-55-3	205-99-2	207-08-9	50-32-8	191-24-2	218-01-9	53-70-3	206-44-0	86-73-7	193-39-5	90-12-0	91-57-6	91-20-3	85-01-8	129-00-0

Abbreviations:
µg/kg = micrograms per kilogram or parts per billion (ppb)
PAHs = Polynuclear Aromatic Hydrocarbons
-- = Not Applicable
RCLs = Residual Contaminant Levels
NE = No Standard Established
WDNR = Wisconsin Department of Natural Resources
CAS No. = Chemical Abstracts Service Number

Notes:
Bold+underlined values meet or exceed an NR 720 RCL, as of December 2018.

Laboratory Notes/Qualifiers:
J = Estimated concentration at or above the Limit of Detection and below the Limit of Quantitation.

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Last revision by:	LMH	Date:	4/20/2022
Checked by:	REO	Date:	4/21/2022
Proj Mgr QA/QC:	RT	Date:	5/4/2022

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Table 3. Soil Analytical Results Summary - PFAS
DOA Hill Farms Heating Plant / SCS Engineers Project #25221165.00
(Results are in µg/kg, except where otherwise noted)

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
Acronym			PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA	PFDoA	PFTriA	PFTeA	PFBS
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
GP-1 (4.5')	4/6/2022		0.033 J	0.10	0.051 J	0.040 J	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
GP-2 (4')	4/6/2022		0.065 J	0.17	0.082 J	0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
Equipment Blank (ng/L)	4/6/2022		<0.44	<0.43	<0.43	<0.54	<0.58	<0.73	<0.56	<0.53	<0.48	<0.61	<0.47	<0.47
Direct Contact RCL							16,400							16,400,000

Table 3. Soil Analytical Results Summary - PFAS
DOA Hill Farms Heating Plant / SCS Engineers Project #25221165.00
(Results are in µg/kg, except where otherwise noted)

Free Acid Name			Perfluoropentanesulfonic acid	Perfluorohexanesulfonic acid	Perfluoroheptanesulfonic acid	Perfluorooctanesulfonic acid	Perfluorononanesulfonic acid	Perfluorodecanesulfonic acid	Perfluorooctanesulfonamide	2-(N-Methylperfluorooctanesulfonamido) acetic acid	2-(N-Ethylperfluorooctanesulfonamido) acetic acid	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid
		Acronym	PFPeS	PFHxS	PFHpS	PFOS	PFNS	PFDS	FOSA	N-MeFOSAA	N-EtFOSAA	4:2 FTS	6:2 FTS
Sample	**Date**	**CAS #**	2706-91-4	355-46-4	375-92-8	1763-23-1	68259-12-1	335-77-3	754-91-6	2355-31-9	2991-50-6	757124-72-4	27619-97-2
GP-1 (4.5')	4/6/2022		<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.03	2.3
GP-2 (4')	4/6/2022		<0.01	<0.02	<0.02	0.16	<0.01	<0.02	<0.02	<0.02	<0.02	<0.03	<0.03
Equipment Blank (ng/L)	4/6/2022		<0.47	<0.50	<0.41	<0.54	<0.44	<0.44	<0.81	<0.43	<0.55	<0.55	<0.64
Direct Contact RCL						16,400							

Table 3. Soil Analytical Results Summary - PFAS
DOA Hill Farms Heating Plant / SCS Engineers Project #25221165.00
(Results are in µg/kg, except where otherwise noted)

Free Acid Name			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
Acronym			8:2 FTS	N-EtFOSA	N-MeFOSA	PFDoS	N-MeFOSE	N-EtFOSE	F-53B Major	GenX	F-53B Minor	DONA
Sample	**Date**	**CAS #**	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
GP-1 (4.5')	4/6/2022		<0.02	<0.02	<0.02	<0.03	<0.02	<0.02	<0.01	<0.03	<0.01	<0.03
GP-2 (4')	4/6/2022		<0.02	<0.02	<0.02	<0.03	<0.02	<0.02	<0.01	<0.02	<0.01	<0.03
Equipment Blank (ng/L)	4/6/2022		<0.65	<0.60	<0.50	<0.45	<0.33	<0.49	<0.30	<0.52	<0.43	<0.51
Direct Contact RCL												

Abbreviations:
µg/kg = micrograms per kilogram or parts per billion (ppb)
CAS No. = Chemical Abstracts Service Number
ng/L = nanogram/liter
-- = Not Applicable
NE = Not Established

Laboratory Notes/Qualifiers:
J = Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ).

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Checked by:	LMH	Date:	4/29/2022
Proj Mgr QA/QC:	RT	Date:	5/4/2022

Figures

USGS THE NATIONAL MAP
AUGUST 2021

2,000 0 2,000 '

SCALE: 1" = 1,500,000'

N

CLIENT	STATE OF WISCONSIN DEPARTMENT OF ADMINISTRATION 101 E. WILSON STREET MADISON, WI 53703	SITE	HILL FARMS HEATING PLANT 4622 UNIVERSITY AVENUE MADISON, WI 53705	SITE LOCATION	

PROJECT NO.	25221165.00	DRAWN BY:	AA	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE, MADISON, WI 53718-6751 PHONE: (608) 224-2830
DRAWN:	02/01/2022	CHECKED BY:	JR		FIGURE 1
REVISED:	02/01/2022	APPROVED BY:	JR 2/1/2022		

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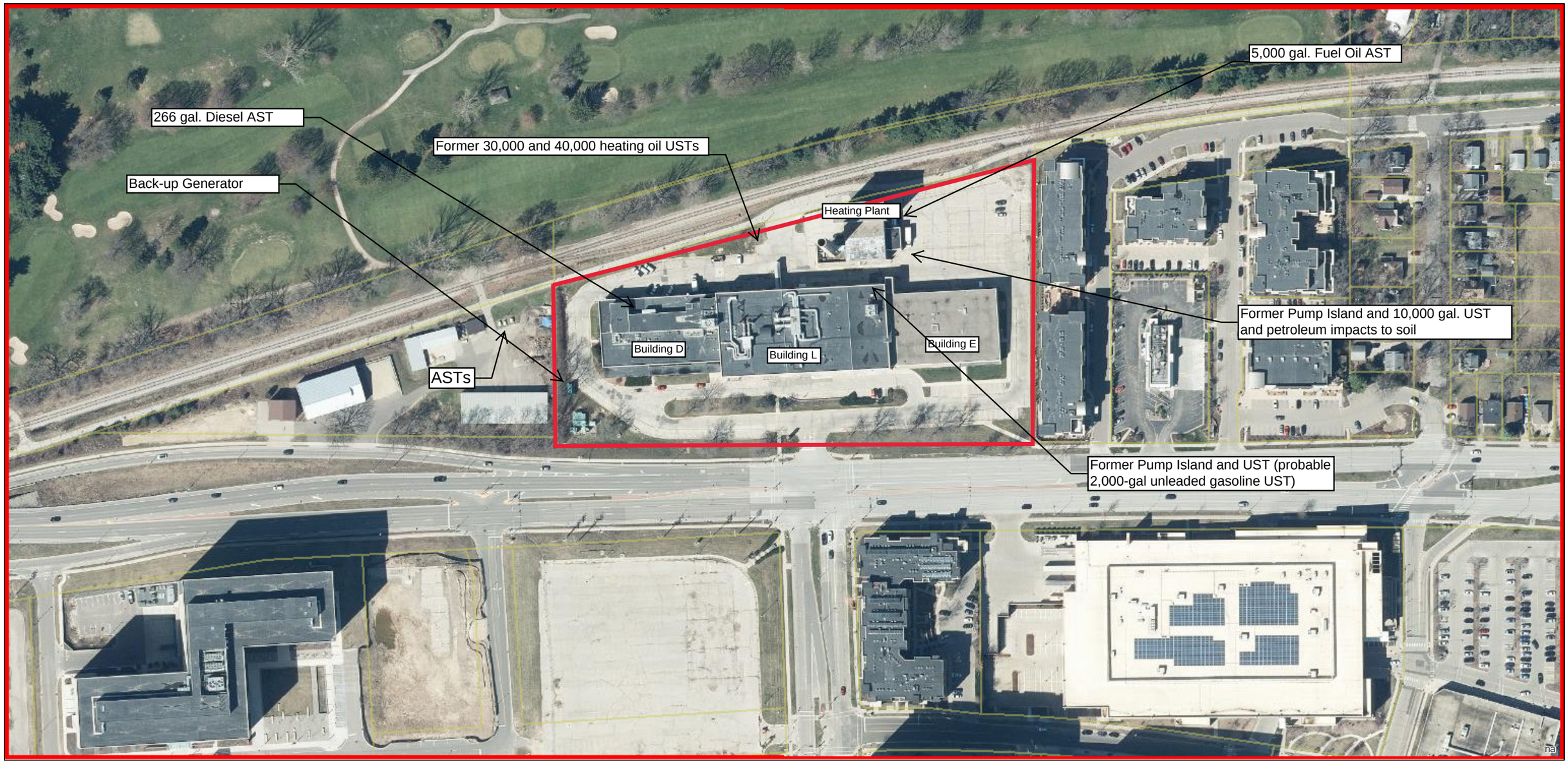
Figure 2. Subject Property Features



January 13, 2022

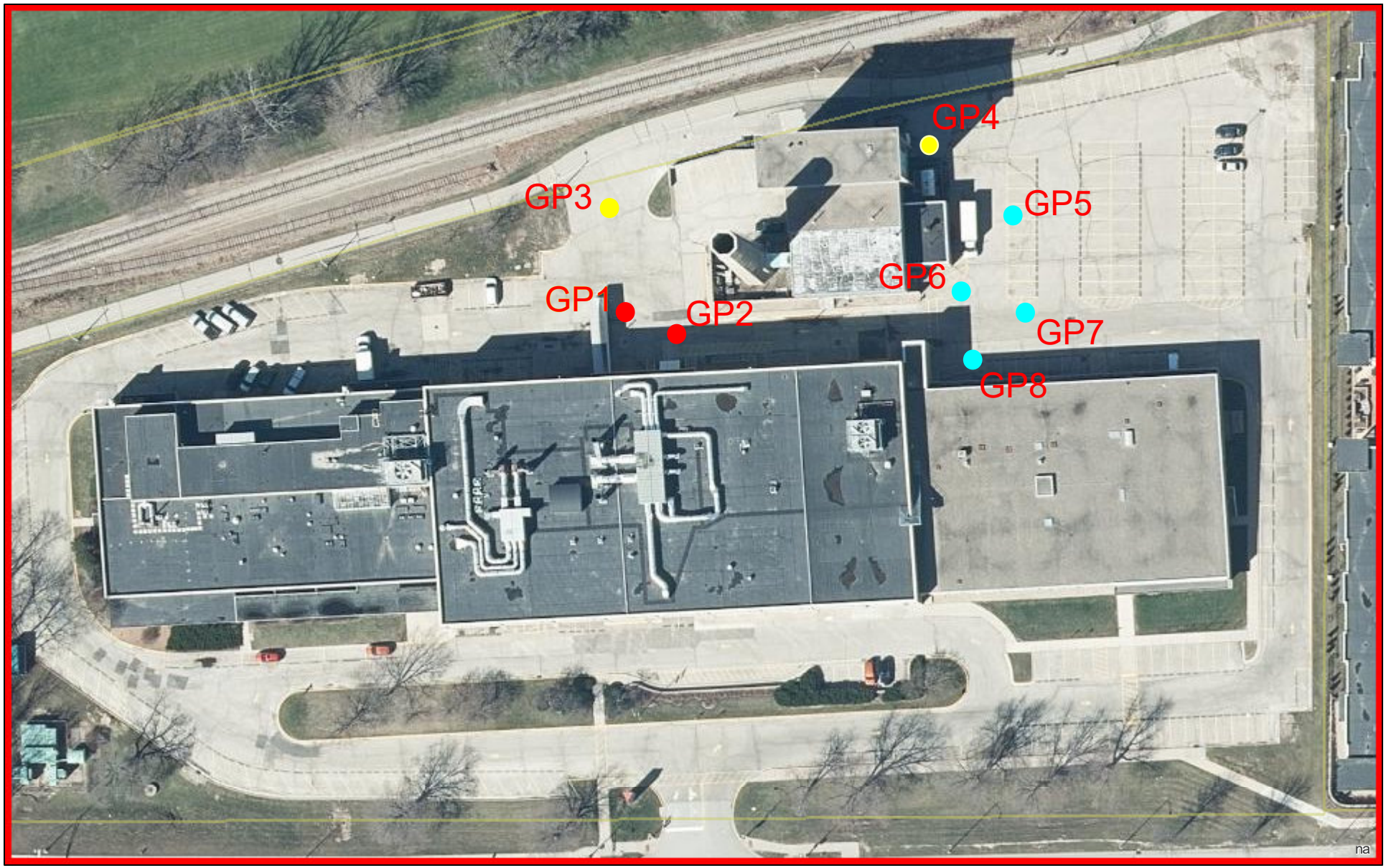
Dane County Mask

- Dane County Mask
- Parcels

0 100 200 400 Feet

N

Figure 3. Boring Locations



March 10, 2022

Dane County Mask

Dane County Mask

Parcels

- Soil Sampled for PVOCs + N and Lead
- Soil Sampled for PVOCs and PAHs
- Soil Sampled for PFAs

0 50 100 200 Feet

N

Notes:
PVOCs = petroleum volatile organic compounds
N = naphthalene
PAHs = polcyclic aromatic hydrocarbons
PFAs = per- and polyfluoroalkyl substances

Appendix A

Soil Boring Logs and Abandonment Forms

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

Facility/Project Name: DOA Hill Farms Heating Plan — SCS # 25221165.00	License/Permit/Monitoring Number		Boring Number: GP-1
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kapusi	Drilling Started: 4-6-22	Drilling Completed: 4-6-22	Drilling Method: geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane — SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N. , E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	30"			Asphalt, ~3" thick				3.5		M		Collect PFAS sample @ 4.5'
				Poorly graded sand & gravel, fine, tan (Base course)	SP							
S2				Silt, WI clay and fine sand, dark brown/gray, trace angular gravel, (Fill).	ML			3.9		M+		
			5									
S3	34"			Lean clay, brown, stiff to soft	CL			4.1		M+		Wet from surface water 5-9'
S4										M+		
			10									
S5	36"			Poorly graded sand, fine, dark brown	SP			4.4				
								4.5		M		
S6				lighter, tan, trace pieces of dolomite				4.1		M		
			15									
				EOB @ 15'								

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

Signature: J. Rennebohm — Firm: SCS ENGINEERS

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

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

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Facility/Project Name: DOA Hill Farms Heating Plan SCS # 25221165.00		License/Permit/Monitoring Number	Boring Number: GP-2
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kapusy		Drilling Started: 4-12-22	Drilling Completed: 4-12-22 / Drilling Method: geoprobe
DNR Facility Well No.	WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation / Borehole Diam.: 2
Boring Location: State Plane SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E		Lat. / Long.	Local Grid Location (If applicable): N., E.
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	34"		0	Asphalt 3" thick / poorly graded Sand & gravel, f-c, tan (base course)	SP			8.7		M		collect PFAS sample @ 4'
S2				poorly graded Sand & Gravel, f-c, black & tan, pieces of coal/cinders / clay (fill)	SP							
			5	Silt, w/ clay & fine sand, brown, trace gravel (fill),	ML			5.4		M		
S3	34"			lean clay, brown, soft,	CL			5.5		M		
S4								5.1		M		
S5	40"		10	poorly graded sand, fine, brown to tan, w/ pieces of dolomite	SP			5.5		M		
S6								5.6		M		
			15	EOB @ 15'								

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

Signature: J. Rennebohm Firm: SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

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Facility/Project Name: DOA Hill Farms Heating Plan SCS # 25221165.00	License/Permit/Monitoring Number		Boring Number: GP-3
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kapusi	Drilling Started: 4-6-22	Drilling Completed: 4-6-22	Drilling Method: Geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N., E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	37"			Asphalt, 3" thick Poorly graded sand & gravel, ~~brown~~ (base courses), w/ asphalt/ cinders/ coal? at top - light tan	SP			6.8		M		Collect sample for PAH & ~~PVOC~~ @ 2.5' & PVOC @ 8'
S2				Silt, w/ sand & clay, fine, dark brown to black, w/ trace gravel (fill),	ML			7.8		M		
S3	21"		5	Silt, tan, soft	ML			7.1		M		
S4				Poorly graded sand, fine, light brown, w/ trace gravel (dolomite pieces)	SP			9.3		M		
S5	33"		10				~~6.8~~	6.8		M		
S6				Refusal @ 14'			~~7.2~~	7.2		M		
			15									

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

Signature: J. Rennebohm Firm: SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

Page 1

Facility/Project Name: DOA Hill Farms Heating Plan — SCS # 25221165.00	License/Permit/Monitoring Number	Boring Number: GP-4	
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kapusi	Drilling Started: 4-6-22	Drilling Completed: 4-6-22	Drilling Method: geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane — SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N. , E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	35"			Asphalt, 3" thick Poorly graded sand & gravel, P-t, brown/blk/gray, coal/slag (?) (fill)	SP			4.2		M		Collect PVOC & PAH sample @ 3.5'
S2			5	Silt, w/ clay & fine sand, brown, trace gravel (fill)	ML			4.5		M		
S3	30"							4.5		M		
S4			10					4.3		M		
S5	27"							4.4		M		
S6				Poorly graded sand, fine, w/ trace silt, pieces of dolomite	SP			3.9		M		
			15	EOB @ 15'								

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

Signature: J. Rennebohm — Firm: SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

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Facility/Project Name	License/Permit/Monitoring Number	Boring Number
DOA Hill Farms Heating Plan SCS # 25221165.00		GP-5

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
On-site Environmental Services, Inc. - Tony Kapusa	4.6.22	4.6.22	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.
					2

Boring Location	Lat. / Long.	Local Grid Location (If applicable)
State Plane SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E		N., E.

County	DNR County Code	Civil Town/City/or Village
Dane	13	City of Madison

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	40"		0	Asphalt 3" thick								
				poorly graded sand & gravel, F-L tan brown (basecourse)	SP			4.5		M		Collect samp for PVOC TN & lead @ 4'
				Silt, WI clay & fine sand, brown to dark brown, trace gravel (fill)	ML							
S2								4.9		M		
			5									
S3	42"							4.8		M		
S4								3.1		M		
			10									
S5	33"							4.5		M		
S6				poorly graded sand, fine, light tan/brown, pieces of dolostone	SP			3.9		M		
				EOB @ 14' hit refusal								
			15									

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

Signature	Firm
J. Rennebohm	SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

Facility/Project Name: DOA Hill Farms Heating Plan SCS # 25221165.00	License/Permit/Monitoring Number		Boring Number: GP-6
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kaguss	Drilling Started: 4-6-22	Drilling Completed: 4-6-22	Drilling Method: geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N., E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	21"		0	Asphalt, 3" thick Poorly graded sand & gravel, f-c, tan (base course)	SP			4.7		M		collect sample for PVOC + N, + lead @ 14'
S2				Silty Sand, light brown, fine, trace gravel	SM			4.3		M		
S3	46"		5	Lean clay, brown, soft	CL			5.0		M		
S4								3.6		M		
S5	33"		10					4.8		M		
S6				Poorly graded sand, fine, light brown / tan, trace dolomite gravel piece.	SP			4.4		M		
			15	EOB @ 14' refusal @ 14'								

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

Signature: J. Rennebohm Firm: SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Watershed/Wastewater
☐ Remediation/Redev.
☐ Waste Management
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

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Facility/Project Name: DOA Hill Farms Heating Plan — SCS # 25221165.00	License/Permit/Monitoring Number	Boring Number: GP-7	
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Vepuri	Drilling Started: 4-6-22	Drilling Completed: 4-6-22	Drilling Method: geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane — SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N., E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	40"		0	Asphalt, 3" thick								
				Poorly graded sand & gravel, F-C, tan (base course)	SP			6.7		M		Collect sample for PVOC N & lead @ 11'
S2				Silt, w/ clay & fine sand, brown to light brown, trace gravel (fill)	ML			4.4		M		
			5									
S3	34"							4.9		M		
S4								5.4		M		
			10									
S5	24"			Poorly graded sand, fine, tan/light brown, gravel dolomite pieces	SP			5.0		M		
S6				EOB @ 12' refusal								
			15									

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

Signature: J. Rennebohm — Firm: SCS ENGINEERS

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Watershed/Wastewater
- ☐ Remediation/Redev.
- ☐ Waste Management
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 7-98
Revised by SCS 1-2016

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Facility/Project Name: DOA Hill Farms Heating Plan — SCS # 25221165.00	License/Permit/Monitoring Number	Boring Number: GP-8	
Boring Drilled By (Firm name and name of crew chief): On-site Environmental Services, Inc. - Tony Kapusi	Drilling Started: 4.6.22	Drilling Completed: 4.6.22	Drilling Method: geoprobe
DNR Facility Well No. / WI Unique Well No. / Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.: 2
Boring Location: State Plane — SW 1/4 of SW 1/4 of Section 17, T. 07 N, R. 09 E	Lat. / Long.	Local Grid Location (If applicable): N. , E.	
County: Dane	DNR County Code: 13	Civil Town/City/or Village: City of Madison	

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	32"		0	Asphalt, 3" thick Poorly graded Sand & gravel, f-c, tan-black (base course)	SP			5.0		M		collect sample for PDOC N, lead @ 12'
				Silt, w/ clay, trace sand & gravel, brown, stiff (Fill?)	ML							
S2			5					5.4		M		
				Lean clay, brown, soft	CL							
S3	31"							3.2		M		
S4			10					8.2		M		
				Poorly graded sand, fine, light brown, w/ trace dolomite pieces	SP							poor recovery
S5	24"							8.2		M		
			15	EOB @ 15'								

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

Signature: J. Rennebohm — Firm: SCS ENGINEERS

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State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, 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 used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	15	0.46	NA

6. Comments

Geoprobe boring GP1

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, 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 used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	15	0.46	NA

6. Comments

Geoprobe boring GP2

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, 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 used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
14	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	14	0.43	NA

6. Comments

Geoprobe boring GP3

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, 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 used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	15	0.46	NA

6. Comments

Geoprobe boring GP4

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
14	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	14	0.43	NA

6. Comments

Geoprobe boring GP5

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
14	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	14	0.43	NA

6. Comments

Geoprobe boring GP6

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
12	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	12	0.37	NA

6. Comments

Geoprobe boring GP7

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25221165.00
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☐ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Dane	NA	NA

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		17	07 N	09 ☒ E ☐ W

Well Street Address: 4630 University Avenue

Well City, Village or Town	Well ZIP Code
Madison	53703

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Temporary Borehole	

2. Facility / Owner Information

Facility Name: DOA Hill Farms Heating Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #:
Original Well Owner: Wisconsin Department of Administration
Present Well Owner: Wisconsin Department of Administration
Mailing Address of Present Owner: 101 E. Wilson Street

City of Present Owner	State	ZIP Code
Madison	WI	53703

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/06/2022

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug ☒ Other (specify): Geoprobe/Direct Push

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.0	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
	~40 feet

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☒ No	☐ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	NA	NA
3/8" Bentonite chips	0.5	15	0.46	NA

6. Comments

Geoprobe boring GP8

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
On-site Environmental Services, Inc.		04/06/2022

Street or Route	Telephone Number
PO Box 280 Sun Prairie	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53590	Jackie Rennebohm	04/06/2022

DNR Use Only

Date Received	Noted By

Comments:

Appendix B

Pace Analytical Laboratory Reports

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

April 14, 2022

Ray Tierney
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Dear Ray Tierney:

Enclosed are the analytical results for sample(s) received by the laboratory on April 07, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Green Bay

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40243056001	**GP-3(2.5')**	Solid	04/06/22 10:15	04/07/22 08:00
40243056002	**GP-3(8')**	Solid	04/06/22 10:15	04/07/22 08:00
40243056003	**GP-8(12')**	Solid	04/06/22 10:30	04/07/22 08:00
40243056004	**GP-6(14')**	Solid	04/06/22 10:50	04/07/22 08:00
40243056005	**GP-5(4')**	Solid	04/06/22 11:25	04/07/22 08:00
40243056006	**GP-4(3.5')**	Solid	04/06/22 11:50	04/07/22 08:00
40243056007	**TRIP BLANK**	Solid	04/06/22 00:00	04/07/22 08:00
40243056008	**GP-7(11)**	Solid	04/06/22 11:05	04/07/22 08:00

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40243056001	**GP-3(2.5')**	EPA 8270E by SIM	RJN	20
		ASTM D2974-87	PDV	1
40243056002	**GP-3(8')**	EPA 8260	ALD	10
		ASTM D2974-87	PDV	1
40243056003	**GP-8(12')**	EPA 6010D	TXW	1
		EPA 8260	ALD	11
		ASTM D2974-87	PDV	1
40243056004	**GP-6(14')**	EPA 6010D	TXW	1
		EPA 8260	ALD	11
		ASTM D2974-87	PDV	1
40243056005	**GP-5(4')**	EPA 6010D	TXW	1
		EPA 8260	ALD	11
		ASTM D2974-87	PDV	1
40243056006	**GP-4(3.5')**	EPA 8270E by SIM	RJN	20
		EPA 8260	ALD	10
		ASTM D2974-87	PDV	1
40243056007	**TRIP BLANK**	EPA 8260	ALD	10
40243056008	**GP-7(11)**	EPA 6010D	TXW	1
		EPA 8260	ALD	11
		ASTM D2974-87	PDV	1

PASI-G = Pace Analytical Services - Green Bay

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40243056001	**GP-3(2.5')**					
EPA 8270E by SIM	Anthracene	89.4J	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Benzo(a)anthracene	658	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Benzo(a)pyrene	994	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Benzo(b)fluoranthene	1360	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Benzo(g,h,i)perylene	867	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Benzo(k)fluoranthene	667	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Chrysene	1100	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Dibenz(a,h)anthracene	181J	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Fluoranthene	1980	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Indeno(1,2,3-cd)pyrene	673	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Phenanthrene	639	ug/kg	357	04/11/22 17:56	
EPA 8270E by SIM	Pyrene	1570	ug/kg	357	04/11/22 17:56	
ASTM D2974-87	Percent Moisture	6.3	%	0.10	04/08/22 17:04	
40243056002	**GP-3(8')**					
ASTM D2974-87	Percent Moisture	9.9	%	0.10	04/08/22 17:05	
40243056003	**GP-8(12')**					
EPA 6010D	Lead	1.6J	mg/kg	2.1	04/12/22 16:21	
ASTM D2974-87	Percent Moisture	6.2	%	0.10	04/08/22 17:05	
40243056004	**GP-6(14')**					
ASTM D2974-87	Percent Moisture	22.6	%	0.10	04/08/22 17:41	
40243056005	**GP-5(4')**					
EPA 6010D	Lead	2.0J	mg/kg	2.1	04/12/22 16:29	
ASTM D2974-87	Percent Moisture	8.4	%	0.10	04/08/22 17:41	
40243056006	**GP-4(3.5')**					
EPA 8270E by SIM	Benzo(a)anthracene	13.1J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Benzo(a)pyrene	14.6J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Benzo(b)fluoranthene	23.8	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Benzo(g,h,i)perylene	12.9J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Benzo(k)fluoranthene	9.6J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Chrysene	23.8	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Dibenz(a,h)anthracene	3.2J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Fluoranthene	19.2	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Indeno(1,2,3-cd)pyrene	6.7J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	1-Methylnaphthalene	15.2J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	2-Methylnaphthalene	17.2J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Naphthalene	9.3J	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Phenanthrene	20.1	ug/kg	17.6	04/11/22 18:13	
EPA 8270E by SIM	Pyrene	16.4J	ug/kg	17.6	04/11/22 18:13	
ASTM D2974-87	Percent Moisture	5.3	%	0.10	04/08/22 17:41	
40243056008	**GP-7(11)**					
EPA 6010D	Lead	3.9J	mg/kg	4.3	04/13/22 12:01	D3
ASTM D2974-87	Percent Moisture	7.2	%	0.10	04/08/22 17:41	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-3(2.5') **Lab ID: 40243056001** Collected: 04/06/22 10:15 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Acenaphthene	**<46.3**	ug/kg	357	46.3	20	04/11/22 08:08	04/11/22 17:56	83-32-9	
Acenaphthylene	**<45.0**	ug/kg	357	45.0	20	04/11/22 08:08	04/11/22 17:56	208-96-8	
Anthracene	**89.4J**	ug/kg	357	44.3	20	04/11/22 08:08	04/11/22 17:56	120-12-7	
Benzo(a)anthracene	**658**	ug/kg	357	46.1	20	04/11/22 08:08	04/11/22 17:56	56-55-3	
Benzo(a)pyrene	**994**	ug/kg	357	40.5	20	04/11/22 08:08	04/11/22 17:56	50-32-8	
Benzo(b)fluoranthene	**1360**	ug/kg	357	49.5	20	04/11/22 08:08	04/11/22 17:56	205-99-2	
Benzo(g,h,i)perylene	**867**	ug/kg	357	62.6	20	04/11/22 08:08	04/11/22 17:56	191-24-2	
Benzo(k)fluoranthene	**667**	ug/kg	357	45.6	20	04/11/22 08:08	04/11/22 17:56	207-08-9	
Chrysene	**1100**	ug/kg	357	67.3	20	04/11/22 08:08	04/11/22 17:56	218-01-9	
Dibenz(a,h)anthracene	**181J**	ug/kg	357	49.4	20	04/11/22 08:08	04/11/22 17:56	53-70-3	
Fluoranthene	**1980**	ug/kg	357	42.2	20	04/11/22 08:08	04/11/22 17:56	206-44-0	
Fluorene	**<42.8**	ug/kg	357	42.8	20	04/11/22 08:08	04/11/22 17:56	86-73-7	
Indeno(1,2,3-cd)pyrene	**673**	ug/kg	357	74.3	20	04/11/22 08:08	04/11/22 17:56	193-39-5	
1-Methylnaphthalene	**<52.1**	ug/kg	357	52.1	20	04/11/22 08:08	04/11/22 17:56	90-12-0	
2-Methylnaphthalene	**<52.2**	ug/kg	357	52.2	20	04/11/22 08:08	04/11/22 17:56	91-57-6	
Naphthalene	**<34.8**	ug/kg	357	34.8	20	04/11/22 08:08	04/11/22 17:56	91-20-3	
Phenanthrene	**639**	ug/kg	357	40.9	20	04/11/22 08:08	04/11/22 17:56	85-01-8	
Pyrene	**1570**	ug/kg	357	52.4	20	04/11/22 08:08	04/11/22 17:56	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	58	%	41-98		20	04/11/22 08:08	04/11/22 17:56	321-60-8	
Terphenyl-d14 (S)	60	%	37-106		20	04/11/22 08:08	04/11/22 17:56	1718-51-0	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**6.3**	%	0.10	0.10	1		04/08/22 17:04		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-3(8') **Lab ID: 40243056002** Collected: 04/06/22 10:15 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<14.5**	ug/kg	24.4	14.5	1	04/11/22 13:30	04/11/22 22:05	71-43-2	
Ethylbenzene	**<14.5**	ug/kg	61.0	14.5	1	04/11/22 13:30	04/11/22 22:05	100-41-4	
Methyl-tert-butyl ether	**<17.9**	ug/kg	61.0	17.9	1	04/11/22 13:30	04/11/22 22:05	1634-04-4	
Toluene	**<15.4**	ug/kg	61.0	15.4	1	04/11/22 13:30	04/11/22 22:05	108-88-3	
1,2,4-Trimethylbenzene	**<18.2**	ug/kg	61.0	18.2	1	04/11/22 13:30	04/11/22 22:05	95-63-6	
1,3,5-Trimethylbenzene	**<19.7**	ug/kg	61.0	19.7	1	04/11/22 13:30	04/11/22 22:05	108-67-8	
Xylene (Total)	**<44.1**	ug/kg	183	44.1	1	04/11/22 13:30	04/11/22 22:05	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	119	%	66-153		1	04/11/22 13:30	04/11/22 22:05	460-00-4	
Toluene-d8 (S)	119	%	67-159		1	04/11/22 13:30	04/11/22 22:05	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	121	%	82-158		1	04/11/22 13:30	04/11/22 22:05	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**9.9**	%	0.10	0.10	1		04/08/22 17:05		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-8(12') **Lab ID: 40243056003** Collected: 04/06/22 10:30 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Lead	**1.6J**	mg/kg	2.1	0.63	1	04/12/22 07:11	04/12/22 16:21	7439-92-1	
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<13.5**	ug/kg	22.6	13.5	1	04/11/22 13:30	04/11/22 22:26	71-43-2	
Ethylbenzene	**<13.5**	ug/kg	56.6	13.5	1	04/11/22 13:30	04/11/22 22:26	100-41-4	
Methyl-tert-butyl ether	**<16.6**	ug/kg	56.6	16.6	1	04/11/22 13:30	04/11/22 22:26	1634-04-4	
Naphthalene	**<17.6**	ug/kg	283	17.6	1	04/11/22 13:30	04/11/22 22:26	91-20-3	
Toluene	**<14.3**	ug/kg	56.6	14.3	1	04/11/22 13:30	04/11/22 22:26	108-88-3	
1,2,4-Trimethylbenzene	**<16.9**	ug/kg	56.6	16.9	1	04/11/22 13:30	04/11/22 22:26	95-63-6	
1,3,5-Trimethylbenzene	**<18.2**	ug/kg	56.6	18.2	1	04/11/22 13:30	04/11/22 22:26	108-67-8	
Xylene (Total)	**<40.8**	ug/kg	170	40.8	1	04/11/22 13:30	04/11/22 22:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	112	%	66-153		1	04/11/22 13:30	04/11/22 22:26	460-00-4	
Toluene-d8 (S)	117	%	67-159		1	04/11/22 13:30	04/11/22 22:26	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	113	%	82-158		1	04/11/22 13:30	04/11/22 22:26	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**6.2**	%	0.10	0.10	1		04/08/22 17:05		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-6(14') **Lab ID: 40243056004** Collected: 04/06/22 10:50 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Lead	**<3.8**	mg/kg	12.6	3.8	5	04/12/22 07:11	04/13/22 11:58	7439-92-1	D3
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<18.8**	ug/kg	31.7	18.8	1	04/11/22 13:30	04/11/22 22:46	71-43-2	
Ethylbenzene	**<18.8**	ug/kg	79.2	18.8	1	04/11/22 13:30	04/11/22 22:46	100-41-4	
Methyl-tert-butyl ether	**<23.3**	ug/kg	79.2	23.3	1	04/11/22 13:30	04/11/22 22:46	1634-04-4	
Naphthalene	**<24.7**	ug/kg	396	24.7	1	04/11/22 13:30	04/11/22 22:46	91-20-3	
Toluene	**<20.0**	ug/kg	79.2	20.0	1	04/11/22 13:30	04/11/22 22:46	108-88-3	
1,2,4-Trimethylbenzene	**<23.6**	ug/kg	79.2	23.6	1	04/11/22 13:30	04/11/22 22:46	95-63-6	
1,3,5-Trimethylbenzene	**<25.5**	ug/kg	79.2	25.5	1	04/11/22 13:30	04/11/22 22:46	108-67-8	
Xylene (Total)	**<57.2**	ug/kg	238	57.2	1	04/11/22 13:30	04/11/22 22:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	128	%	66-153		1	04/11/22 13:30	04/11/22 22:46	460-00-4	
Toluene-d8 (S)	132	%	67-159		1	04/11/22 13:30	04/11/22 22:46	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	126	%	82-158		1	04/11/22 13:30	04/11/22 22:46	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**22.6**	%	0.10	0.10	1		04/08/22 17:41		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-5(4') **Lab ID: 40243056005** Collected: 04/06/22 11:25 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Lead	**2.0J**	mg/kg	2.1	0.63	1	04/12/22 07:11	04/12/22 16:29	7439-92-1	
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<14.1**	ug/kg	23.7	14.1	1	04/11/22 13:30	04/11/22 23:06	71-43-2	
Ethylbenzene	**<14.1**	ug/kg	59.1	14.1	1	04/11/22 13:30	04/11/22 23:06	100-41-4	
Methyl-tert-butyl ether	**<17.4**	ug/kg	59.1	17.4	1	04/11/22 13:30	04/11/22 23:06	1634-04-4	
Naphthalene	**<18.4**	ug/kg	296	18.4	1	04/11/22 13:30	04/11/22 23:06	91-20-3	
Toluene	**<14.9**	ug/kg	59.1	14.9	1	04/11/22 13:30	04/11/22 23:06	108-88-3	
1,2,4-Trimethylbenzene	**<17.6**	ug/kg	59.1	17.6	1	04/11/22 13:30	04/11/22 23:06	95-63-6	
1,3,5-Trimethylbenzene	**<19.0**	ug/kg	59.1	19.0	1	04/11/22 13:30	04/11/22 23:06	108-67-8	
Xylene (Total)	**<42.7**	ug/kg	177	42.7	1	04/11/22 13:30	04/11/22 23:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	111	%	66-153		1	04/11/22 13:30	04/11/22 23:06	460-00-4	
Toluene-d8 (S)	114	%	67-159		1	04/11/22 13:30	04/11/22 23:06	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	113	%	82-158		1	04/11/22 13:30	04/11/22 23:06	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**8.4**	%	0.10	0.10	1		04/08/22 17:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-4(3.5') **Lab ID: 40243056006** Collected: 04/06/22 11:50 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Green Bay								
Acenaphthene	**<2.3**	ug/kg	17.6	2.3	1	04/11/22 08:08	04/11/22 18:13	83-32-9	
Acenaphthylene	**<2.2**	ug/kg	17.6	2.2	1	04/11/22 08:08	04/11/22 18:13	208-96-8	
Anthracene	**<2.2**	ug/kg	17.6	2.2	1	04/11/22 08:08	04/11/22 18:13	120-12-7	
Benzo(a)anthracene	**13.1J**	ug/kg	17.6	2.3	1	04/11/22 08:08	04/11/22 18:13	56-55-3	
Benzo(a)pyrene	**14.6J**	ug/kg	17.6	2.0	1	04/11/22 08:08	04/11/22 18:13	50-32-8	
Benzo(b)fluoranthene	**23.8**	ug/kg	17.6	2.4	1	04/11/22 08:08	04/11/22 18:13	205-99-2	
Benzo(g,h,i)perylene	**12.9J**	ug/kg	17.6	3.1	1	04/11/22 08:08	04/11/22 18:13	191-24-2	
Benzo(k)fluoranthene	**9.6J**	ug/kg	17.6	2.2	1	04/11/22 08:08	04/11/22 18:13	207-08-9	
Chrysene	**23.8**	ug/kg	17.6	3.3	1	04/11/22 08:08	04/11/22 18:13	218-01-9	
Dibenz(a,h)anthracene	**3.2J**	ug/kg	17.6	2.4	1	04/11/22 08:08	04/11/22 18:13	53-70-3	
Fluoranthene	**19.2**	ug/kg	17.6	2.1	1	04/11/22 08:08	04/11/22 18:13	206-44-0	
Fluorene	**<2.1**	ug/kg	17.6	2.1	1	04/11/22 08:08	04/11/22 18:13	86-73-7	
Indeno(1,2,3-cd)pyrene	**6.7J**	ug/kg	17.6	3.7	1	04/11/22 08:08	04/11/22 18:13	193-39-5	
1-Methylnaphthalene	**15.2J**	ug/kg	17.6	2.6	1	04/11/22 08:08	04/11/22 18:13	90-12-0	
2-Methylnaphthalene	**17.2J**	ug/kg	17.6	2.6	1	04/11/22 08:08	04/11/22 18:13	91-57-6	
Naphthalene	**9.3J**	ug/kg	17.6	1.7	1	04/11/22 08:08	04/11/22 18:13	91-20-3	
Phenanthrene	**20.1**	ug/kg	17.6	2.0	1	04/11/22 08:08	04/11/22 18:13	85-01-8	
Pyrene	**16.4J**	ug/kg	17.6	2.6	1	04/11/22 08:08	04/11/22 18:13	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	71	%	41-98		1	04/11/22 08:08	04/11/22 18:13	321-60-8	
Terphenyl-d14 (S)	72	%	37-106		1	04/11/22 08:08	04/11/22 18:13	1718-51-0	
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<13.2**	ug/kg	22.2	13.2	1	04/11/22 13:30	04/11/22 23:26	71-43-2	
Ethylbenzene	**<13.2**	ug/kg	55.6	13.2	1	04/11/22 13:30	04/11/22 23:26	100-41-4	
Methyl-tert-butyl ether	**<16.3**	ug/kg	55.6	16.3	1	04/11/22 13:30	04/11/22 23:26	1634-04-4	
Toluene	**<14.0**	ug/kg	55.6	14.0	1	04/11/22 13:30	04/11/22 23:26	108-88-3	
1,2,4-Trimethylbenzene	**<16.6**	ug/kg	55.6	16.6	1	04/11/22 13:30	04/11/22 23:26	95-63-6	
1,3,5-Trimethylbenzene	**<17.9**	ug/kg	55.6	17.9	1	04/11/22 13:30	04/11/22 23:26	108-67-8	
Xylene (Total)	**<40.1**	ug/kg	167	40.1	1	04/11/22 13:30	04/11/22 23:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	66-153		1	04/11/22 13:30	04/11/22 23:26	460-00-4	
Toluene-d8 (S)	110	%	67-159		1	04/11/22 13:30	04/11/22 23:26	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	108	%	82-158		1	04/11/22 13:30	04/11/22 23:26	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.3**	%	0.10	0.10	1		04/08/22 17:41		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: TRIP BLANK **Lab ID: 40243056007** Collected: 04/06/22 00:00 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<11.9**	ug/kg	20.0	11.9	1	04/11/22 13:30	04/11/22 20:45	71-43-2	
Ethylbenzene	**<11.9**	ug/kg	50.0	11.9	1	04/11/22 13:30	04/11/22 20:45	100-41-4	
Methyl-tert-butyl ether	**<14.7**	ug/kg	50.0	14.7	1	04/11/22 13:30	04/11/22 20:45	1634-04-4	
Toluene	**<12.6**	ug/kg	50.0	12.6	1	04/11/22 13:30	04/11/22 20:45	108-88-3	
1,2,4-Trimethylbenzene	**<14.9**	ug/kg	50.0	14.9	1	04/11/22 13:30	04/11/22 20:45	95-63-6	
1,3,5-Trimethylbenzene	**<16.1**	ug/kg	50.0	16.1	1	04/11/22 13:30	04/11/22 20:45	108-67-8	
Xylene (Total)	**<36.1**	ug/kg	150	36.1	1	04/11/22 13:30	04/11/22 20:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	66-153		1	04/11/22 13:30	04/11/22 20:45	460-00-4	
Toluene-d8 (S)	97	%	67-159		1	04/11/22 13:30	04/11/22 20:45	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	98	%	82-158		1	04/11/22 13:30	04/11/22 20:45	2199-69-1	

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ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Sample: GP-7(11) **Lab ID: 40243056008** Collected: 04/06/22 11:05 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Green Bay								
Lead	**3.9J**	mg/kg	4.3	1.3	2	04/12/22 07:11	04/13/22 12:01	7439-92-1	D3
8260 MSV Med Level Short List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Benzene	**<13.8**	ug/kg	23.1	13.8	1	04/08/22 08:00	04/08/22 12:11	71-43-2	
Ethylbenzene	**<13.8**	ug/kg	57.8	13.8	1	04/08/22 08:00	04/08/22 12:11	100-41-4	
Methyl-tert-butyl ether	**<17.0**	ug/kg	57.8	17.0	1	04/08/22 08:00	04/08/22 12:11	1634-04-4	
Naphthalene	**<18.0**	ug/kg	289	18.0	1	04/08/22 08:00	04/08/22 12:11	91-20-3	
Toluene	**<14.6**	ug/kg	57.8	14.6	1	04/08/22 08:00	04/08/22 12:11	108-88-3	
1,2,4-Trimethylbenzene	**<17.2**	ug/kg	57.8	17.2	1	04/08/22 08:00	04/08/22 12:11	95-63-6	
1,3,5-Trimethylbenzene	**<18.6**	ug/kg	57.8	18.6	1	04/08/22 08:00	04/08/22 12:11	108-67-8	
Xylene (Total)	**<41.7**	ug/kg	173	41.7	1	04/08/22 08:00	04/08/22 12:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	119	%	66-153		1	04/08/22 08:00	04/08/22 12:11	460-00-4	
Toluene-d8 (S)	110	%	67-159		1	04/08/22 08:00	04/08/22 12:11	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	111	%	82-158		1	04/08/22 08:00	04/08/22 12:11	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**7.2**	%	0.10	0.10	1		04/08/22 17:41		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412728 | Analysis Method: EPA 6010D
QC Batch Method: EPA 3050B | Analysis Description: 6010D MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056003, 40243056004, 40243056005, 40243056008

METHOD BLANK: 2377027 Matrix: Solid
Associated Lab Samples: 40243056003, 40243056004, 40243056005, 40243056008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	<0.60	2.0	04/12/22 16:07	

LABORATORY CONTROL SAMPLE: 2377028

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	25	25.9	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2377029 2377030

Parameter	Units	50313402001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	37.7	47	46.9	106	103	146	139	75-125	4	20	M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412594
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Short List
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056008

METHOD BLANK: 2376096 Matrix: Solid
Associated Lab Samples: 40243056008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	<14.9	50.0	04/08/22 10:25	
1,3,5-Trimethylbenzene	ug/kg	<16.1	50.0	04/08/22 10:25	
Benzene	ug/kg	<11.9	20.0	04/08/22 10:25	
Ethylbenzene	ug/kg	<11.9	50.0	04/08/22 10:25	
Methyl-tert-butyl ether	ug/kg	<14.7	50.0	04/08/22 10:25	
Naphthalene	ug/kg	<15.6	250	04/08/22 10:25	
Toluene	ug/kg	<12.6	50.0	04/08/22 10:25	
Xylene (Total)	ug/kg	<36.1	150	04/08/22 10:25	
1,2-Dichlorobenzene-d4 (S)	%	95	82-158	04/08/22 10:25	
4-Bromofluorobenzene (S)	%	99	66-153	04/08/22 10:25	
Toluene-d8 (S)	%	103	67-159	04/08/22 10:25	

LABORATORY CONTROL SAMPLE: 2376097

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	2500	2180	87	70-130	
Ethylbenzene	ug/kg	2500	2230	89	78-120	
Methyl-tert-butyl ether	ug/kg	2500	2260	91	65-130	
Toluene	ug/kg	2500	2040	82	76-120	
Xylene (Total)	ug/kg	7500	6370	85	70-130	
1,2-Dichlorobenzene-d4 (S)	%			89	82-158	
4-Bromofluorobenzene (S)	%			98	66-153	
Toluene-d8 (S)	%			89	67-159	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2376098 2376099

Parameter	Units	40243056008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	<13.8	1150	1150	1020	1000	88	87	70-130	1	20	
Ethylbenzene	ug/kg	<13.8	1150	1150	1050	1030	91	90	78-120	2	20	
Methyl-tert-butyl ether	ug/kg	<17.0	1150	1150	1090	1070	94	93	65-130	2	20	
Toluene	ug/kg	<14.6	1150	1150	1000	971	87	84	76-120	3	20	
Xylene (Total)	ug/kg	<41.7	3470	3470	3030	3030	87	87	70-130	0	20	
1,2-Dichlorobenzene-d4 (S)	%						106	108	82-158			
4-Bromofluorobenzene (S)	%						121	119	66-153			
Toluene-d8 (S)	%						112	110	67-159			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412787
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Short List
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056002, 40243056003, 40243056004, 40243056005, 40243056006, 40243056007

METHOD BLANK: 2377165 Matrix: Solid
Associated Lab Samples: 40243056002, 40243056003, 40243056004, 40243056005, 40243056006, 40243056007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	<14.9	50.0	04/11/22 18:43	
1,3,5-Trimethylbenzene	ug/kg	<16.1	50.0	04/11/22 18:43	
Benzene	ug/kg	<11.9	20.0	04/11/22 18:43	
Ethylbenzene	ug/kg	<11.9	50.0	04/11/22 18:43	
Methyl-tert-butyl ether	ug/kg	<14.7	50.0	04/11/22 18:43	
Naphthalene	ug/kg	<15.6	250	04/11/22 18:43	
Toluene	ug/kg	<12.6	50.0	04/11/22 18:43	
Xylene (Total)	ug/kg	<36.1	150	04/11/22 18:43	
1,2-Dichlorobenzene-d4 (S)	%	90	82-158	04/11/22 18:43	
4-Bromofluorobenzene (S)	%	93	66-153	04/11/22 18:43	
Toluene-d8 (S)	%	93	67-159	04/11/22 18:43	

LABORATORY CONTROL SAMPLE: 2377166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	2500	2230	89	70-130	
Ethylbenzene	ug/kg	2500	2130	85	78-120	
Methyl-tert-butyl ether	ug/kg	2500	1920	77	65-130	
Toluene	ug/kg	2500	2300	92	76-120	
Xylene (Total)	ug/kg	7500	6460	86	70-130	
1,2-Dichlorobenzene-d4 (S)	%			93	82-158	
4-Bromofluorobenzene (S)	%			96	66-153	
Toluene-d8 (S)	%			98	67-159	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412695
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E/3546 MSSV PAH by SIM
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056001, 40243056006

METHOD BLANK: 2376934 Matrix: Solid
Associated Lab Samples: 40243056001, 40243056006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<2.4	16.7	04/11/22 10:41	
2-Methylnaphthalene	ug/kg	<2.4	16.7	04/11/22 10:41	
Acenaphthene	ug/kg	<2.2	16.7	04/11/22 10:41	
Acenaphthylene	ug/kg	<2.1	16.7	04/11/22 10:41	
Anthracene	ug/kg	<2.1	16.7	04/11/22 10:41	
Benzo(a)anthracene	ug/kg	<2.2	16.7	04/11/22 10:41	
Benzo(a)pyrene	ug/kg	<1.9	16.7	04/11/22 10:41	
Benzo(b)fluoranthene	ug/kg	<2.3	16.7	04/11/22 10:41	
Benzo(g,h,i)perylene	ug/kg	<2.9	16.7	04/11/22 10:41	
Benzo(k)fluoranthene	ug/kg	<2.1	16.7	04/11/22 10:41	
Chrysene	ug/kg	<3.1	16.7	04/11/22 10:41	
Dibenz(a,h)anthracene	ug/kg	<2.3	16.7	04/11/22 10:41	
Fluoranthene	ug/kg	<2.0	16.7	04/11/22 10:41	
Fluorene	ug/kg	<2.0	16.7	04/11/22 10:41	
Indeno(1,2,3-cd)pyrene	ug/kg	<3.5	16.7	04/11/22 10:41	
Naphthalene	ug/kg	<1.6	16.7	04/11/22 10:41	
Phenanthrene	ug/kg	<1.9	16.7	04/11/22 10:41	
Pyrene	ug/kg	<2.5	16.7	04/11/22 10:41	
2-Fluorobiphenyl (S)	%	87	41-98	04/11/22 10:41	
Terphenyl-d14 (S)	%	88	37-106	04/11/22 10:41	

LABORATORY CONTROL SAMPLE: 2376935

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	333	285	86	64-110	
2-Methylnaphthalene	ug/kg	333	276	83	60-110	
Acenaphthene	ug/kg	333	290	87	69-120	
Acenaphthylene	ug/kg	333	277	83	63-120	
Anthracene	ug/kg	333	306	92	71-112	
Benzo(a)anthracene	ug/kg	333	269	81	62-120	
Benzo(a)pyrene	ug/kg	333	315	95	71-111	
Benzo(b)fluoranthene	ug/kg	333	282	85	59-112	
Benzo(g,h,i)perylene	ug/kg	333	326	98	64-115	
Benzo(k)fluoranthene	ug/kg	333	336	101	72-117	
Chrysene	ug/kg	333	307	92	75-120	
Dibenz(a,h)anthracene	ug/kg	333	327	98	67-114	
Fluoranthene	ug/kg	333	304	91	70-110	
Fluorene	ug/kg	333	293	88	64-104	
Indeno(1,2,3-cd)pyrene	ug/kg	333	329	99	71-114	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

LABORATORY CONTROL SAMPLE: 2376935

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg	333	261	78	62-120	
Phenanthrene	ug/kg	333	281	84	59-106	
Pyrene	ug/kg	333	281	84	69-120	
2-Fluorobiphenyl (S)	%			80	41-98	
Terphenyl-d14 (S)	%			87	37-106	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2376936 2376937

Parameter	Units	40243053010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1-Methylnaphthalene	ug/kg	<0.0025 mg/kg	344	344	291	316	85	92	51-110	8	34	
2-Methylnaphthalene	ug/kg	<0.0025 mg/kg	344	344	284	312	83	91	45-110	10	29	
Acenaphthene	ug/kg	<0.0022 mg/kg	344	344	280	299	81	87	52-120	7	26	
Acenaphthylene	ug/kg	<0.0022 mg/kg	344	344	283	303	82	88	46-120	7	22	
Anthracene	ug/kg	<0.0021 mg/kg	344	344	299	316	87	92	50-112	6	25	
Benzo(a)anthracene	ug/kg	<0.0022 mg/kg	344	344	267	292	78	85	41-120	9	37	
Benzo(a)pyrene	ug/kg	<0.0020 mg/kg	344	344	301	328	87	95	44-114	9	33	
Benzo(b)fluoranthene	ug/kg	<0.0024 mg/kg	344	344	291	304	85	88	41-112	4	43	
Benzo(g,h,i)perylene	ug/kg	<0.0030 mg/kg	344	344	305	332	89	97	40-115	8	36	
Benzo(k)fluoranthene	ug/kg	<0.0022 mg/kg	344	344	323	341	94	99	56-117	5	30	
Chrysene	ug/kg	<0.0032 mg/kg	344	344	296	309	86	90	45-120	4	28	
Dibenz(a,h)anthracene	ug/kg	<0.0024 mg/kg	344	344	304	329	88	96	44-114	8	33	
Fluoranthene	ug/kg	0.0021J mg/kg	344	344	303	314	88	91	55-110	4	43	
Fluorene	ug/kg	<0.0021 mg/kg	344	344	294	314	86	91	47-104	7	27	
Indeno(1,2,3-cd)pyrene	ug/kg	<0.0036 mg/kg	344	344	306	331	89	96	45-114	8	33	
Naphthalene	ug/kg	<0.0017 mg/kg	344	344	251	286	73	83	47-120	13	26	
Phenanthrene	ug/kg	0.0023J mg/kg	344	344	272	297	79	86	38-106	9	24	
Pyrene	ug/kg	0.0027J mg/kg	344	344	281	305	81	88	51-120	8	41	
2-Fluorobiphenyl (S)	%						77	85	41-98			
Terphenyl-d14 (S)	%						80	81	37-106			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412657
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056001, 40243056002, 40243056003

SAMPLE DUPLICATE: 2376636

Parameter	Units	40243113001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.9	4.1	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

QC Batch: 412658
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40243056004, 40243056005, 40243056006, 40243056008

SAMPLE DUPLICATE: 2376683

Parameter	Units	40243022001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.3	3.5	4	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25221165 HILL FARMS HEATING
Pace Project No.: 40243056

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40243056003	**GP-8(12')**	EPA 3050B	412728	EPA 6010D	412941
40243056004	**GP-6(14')**	EPA 3050B	412728	EPA 6010D	412941
40243056005	**GP-5(4')**	EPA 3050B	412728	EPA 6010D	412941
40243056008	**GP-7(11)**	EPA 3050B	412728	EPA 6010D	412941
40243056001	**GP-3(2.5')**	EPA 3546	412695	EPA 8270E by SIM	412742
40243056006	**GP-4(3.5')**	EPA 3546	412695	EPA 8270E by SIM	412742
40243056002	**GP-3(8')**	EPA 5035/5030B	412787	EPA 8260	412800
40243056003	**GP-8(12')**	EPA 5035/5030B	412787	EPA 8260	412800
40243056004	**GP-6(14')**	EPA 5035/5030B	412787	EPA 8260	412800
40243056005	**GP-5(4')**	EPA 5035/5030B	412787	EPA 8260	412800
40243056006	**GP-4(3.5')**	EPA 5035/5030B	412787	EPA 8260	412800
40243056007	**TRIP BLANK**	EPA 5035/5030B	412787	EPA 8260	412800
40243056008	**GP-7(11)**	EPA 5035/5030B	412594	EPA 8260	412595
40243056001	**GP-3(2.5')**	ASTM D2974-87	412657		
40243056002	**GP-3(8')**	ASTM D2974-87	412657		
40243056003	**GP-8(12')**	ASTM D2974-87	412657		
40243056004	**GP-6(14')**	ASTM D2974-87	412658		
40243056005	**GP-5(4')**	ASTM D2974-87	412658		
40243056006	**GP-4(3.5')**	ASTM D2974-87	412658		
40243056008	**GP-7(11)**	ASTM D2974-87	412658		

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40243056

ALL SHADED AREAS are for LAB USE ONLY

Company: SCS Engineers	Billing Information:
Address: 2830 Dairy Dr, Madison, WI	
Report To: Ray Tierney	Email To: RTierney@scsengineers.com
Copy To: Jackie Rennebohm	Site Collection Info/Address:
Customer Project Name/Number: 25221165 Hill Farms Heating Plant	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Jackie Rennebohm	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Normal Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Container Preservative Type **

Lab Project Manager:

Analyses: PAH; PVOC; PVOC + N; lead

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY: Lab Sample # / Comments: TP 4/7/22

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PAH	PVOC	PVOC + N	lead	Lab Sample # / Comments
GP-3 (2.5')	S		4/6	1015					X	X			001
GP-3 (8')	S			1015						X			002
GP-8 (12')	S			1030							X	X	003
GP-6 (14')	S			1050							X	X	004
GP-5 (4')	S			1125							X	X	005
~~GP-5 (8.5')~~													
GP-4 (3.5')	S			1150					X	X			006
Trip blank										X			007
GP-7 (11')			4/6/22	1105									008

Customer Remarks / Special Conditions / Possible Hazards: (1) received in Shipment lab added per PM TP 4/7/22

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2763942

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: 113
Cooler 1 Temp Upon Receipt: 3 oC
Cooler 1 Therm Corr. Factor: .1 oC
Cooler 1 Corrected Temp: 3.1 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	1330 4.6.22		
CS Logistics	4/7/22 0800	Tonya Pace	4/7/22 0800

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: (Y) N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40243056

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

Initial when completed: Date/ Time:

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

	Glass							Plastic					Vials						Jars				General								
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																				1			1	TP 4/7/22									2.5 / 5 / 10
002																		1					1										2.5 / 5 / 10
003																		1					1										2.5 / 5 / 10
004																		1					1										2.5 / 5 / 10
005																		1					1										2.5 / 5 / 10
006																		1		1			1										2.5 / 5 / 10
007																		1					1										2.5 / 5 / 10
008																		1					1										2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																		TP 4/7/22															2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

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

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40243056

40243056

Client Name: SCS Engineers

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other:

Tracking #:

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

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

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 113 **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 3 /Corr: 3.1

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

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

Person examining contents:
Date: 4/7/22 Initials: TP

Labeled By Initials: TP

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. PO # 506 not listed on COC added per PM TP 4/7/22
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S	☐Yes ☑No ☐N/A	12. no date on ~~WGFU~~ WPFU 002 no (14') on ~~WGFU~~ WPFU and VG9M 004 TP 4/7/22
Trip Blank Present:	☑Yes ☐No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

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

Dan Milewsky

From: Rennebohm, Jackie <JRennebohm@scsengineers.com>
Sent: Thursday, April 7, 2022 3:31 PM
To: Dan Milewsky
Subject: RE: Hill Farms Heating Plant - extra sample

Hi Dan,

GP7 should be ran for PVOCs +N and lead. Sorry about that. Thanks!

From: Dan Milewsky <Dan.Milewsky@pacelabs.com>
Sent: Thursday, April 7, 2022 2:22 PM
To: Rennebohm, Jackie <JRennebohm@scsengineers.com>
Subject: RE: Hill Farms Heating Plant - extra sample

Jackie,

We received GP-7 which wasn't listed on the COC. Our staff added it; let me know if you want it run and for what tests.

Dan Milewsky
Project Manager | Pace Environmental Sciences
1241 Bellevue St, STE 9
Green Bay, WI 54302
Direct/Cell-920-412-8566 | Lab-920.469.2436 |
pacelabs.com

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

April 25, 2022

Ray Tierney
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Dear Ray Tierney:

Enclosed are the analytical results for sample(s) received by the laboratory on April 07, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Minneapolis

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab
A2LA Certification #: 2926.01*
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009*
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014*
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605*
Georgia Certification #: 959
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086*
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064*
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137*
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240*
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081*
New Jersey Certification #: MN002
New York Certification #: 11647*
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Ohio VAP Certification (1800) #: CL110*
Oklahoma Certification #: 9507*
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001*
Pennsylvania Certification #: 68-00563*
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192*
Utah Certification #: MN00064*
Vermont Certification #: VT-027053137
Virginia Certification #: 460163*
Washington Certification #: C486*
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208
*Please Note: Applicable air certifications are denoted with an asterisk (*).

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40243069001	**BLANK**	Water	04/06/22 09:00	04/07/22 08:00
40243069002	**GP-1 (4.5')**	Solid	04/06/22 09:15	04/07/22 08:00
40243069003	**GP-2 (4')**	Solid	04/06/22 09:40	04/07/22 08:00

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40243069002	**GP-1 (4.5')**	ASTM D2974	JDL	1	PASI-M
40243069003	**GP-2 (4')**	ASTM D2974	JDL	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40243069002	**GP-1 (4.5')**					
ASTM D2974	Percent Moisture	13.6	%	0.10	04/11/22 12:07	N2
40243069003	**GP-2 (4')**					
ASTM D2974	Percent Moisture	16.5	%	0.10	04/11/22 12:07	N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Sample: GP-1 (4.5') **Lab ID: 40243069002** Collected: 04/06/22 09:15 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**13.6**	%	0.10	0.10	1		04/11/22 12:07		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Sample: GP-2 (4') **Lab ID: 40243069003** Collected: 04/06/22 09:40 Received: 04/07/22 08:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**16.5**	%	0.10	0.10	1		04/11/22 12:07		N2

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

QC Batch: 808531
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 40243069002, 40243069003

SAMPLE DUPLICATE: 4290735

Parameter	Units	40243069002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	13.6	14.8	8	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25221165 HILL FARMS HEATING PL
Pace Project No.: 40243069

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40243069002	**GP-1 (4.5')**	ASTM D2974	808531		
40243069003	**GP-2 (4')**	ASTM D2974	808531		

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 10243069

ALL SHADED AREAS are for LAB USE ONLY

Company: SCS Engineers	Billing Information:
Address: 2830 Dairy Dr, Madison, WI 53718	
Report To: Ray Tierney	Email To: rtierney@scsengineers.com
Copy To: Jackie Bennebohm	Site Collection Info/Address:
Customer Project Name/Number: 25221165 Hill Farms Heating Plant	State: County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Jackie Bennebohm	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Normal Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: CLEAR	Lab Profile/Line:
Blank	DI		4/6	900					X	001
GP-1 (4.5')	S			915					X	002
GP-2	S			940					X	003

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY: Lab Sample # / Comments: JP 4/7/22

Customer Remarks / Special Instructions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2763944

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: 113
Cooler 1 Temp Upon Receipt: 3 oC
Cooler 1 Therm Corr. Factor: 3.1 oC
Cooler 1 Corrected Temp: 3.1 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	1330 4.6.22		
CS logistics	4/7/22 0800	TAMPA PACE	4/7/22 0800

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N (NA)
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40243069

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

Initial when completed: Date/ Time:

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

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	Vials: VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001										1																							2.5 / 5 / 10
002										1																							2.5 / 5 / 10
003										1																							2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
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017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

TP 4/7/22

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

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40243069

40243069

Client Name: SCS Engineers

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other:

Tracking #:

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

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used SR - 113 **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 3 /Corr: 3.1

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

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

Person examining contents:
Date: 4/7/22 Initials: TP

Labeled By Initials: AL

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. pg#, Filtered, Preservative type TP 4/7/22
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S	☐Yes ☑No ☐N/A	12. 003: (4°) not included on COC TP 4/7/22
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

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

Page 2 of 2

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Dan Milewsky
PACE Wisconsin
1241 Bellevue Street
Green Bay WI 54302

REPORT OF LABORATORY ANALYSIS FOR PFAAs

Report Information:

Pace Project #: 10604041
Sample Receipt Date: 04/09/2022
Client Project #: 40243069 SCS ENGINEERS
Client Sub PO #: N/A
State Cert #: 999407970

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PFAA Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

April 25, 2022

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
April 19, 2022

Report of Laboratory Analysis

DISCUSSION

This report presents the results from the analyses performed on three samples submitted by a representative of Pace Wisconsin. The samples were analyzed for thirty-three perfluorinated compounds using Wisconsin DNR guidance. Reporting limits were set to MDL levels.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blank was free of the target perfluorinated compounds at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the analyte content determined for the sample material.

A laboratory spike sample was also prepared with each sample batch using clean reference matrix that had been fortified with native standards. The recovery results were within the method limits. This spike indicates that extraction performed as expected. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from that analysis will be provided upon request.

Diminished extracted internal standard (EIS) recovery ("R" flagged) were present in LCS-97941, however, the use of the isotope dilution method generally precludes any adverse impact on those individual native compounds that have a directly associated standard.

The four injection internal standards (13C4 PFOA, 13C4 PFOS, 13C2_PFDA, and 13C2_PFHxA) pass for each analysis in the batch verifying that the instrument detector is working as expected.

Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
		Missouri	10100
A2LA	2926.01	Montana	CERT0092
Alabama	40770	Nebraska	NE-OS-18-06
Alaska-DW	MN00064	Nevada	MN00064
Alaska-UST	17-009	New Hampshire	2081
Arizona	AZ0014	New Jersey	MN002
Arkansas - WW	88-0680	New York	11647
Arkansas-DW	MN00064	North Carolina-	27700
California	2929	North Carolina-	530
Colorado	MN00064	North Dakota	R-036
Connecticut	PH-0256	Ohio-DW	41244
Florida	E87605	Ohio-VAP (170	CL101
Georgia	959	Ohio-VAP (180	CL110
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon- rimary	MN300001
Illinois	200011	Oregon-Second	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky-DW	90062	Tennessee	TN02818
Kentucky-WW	90062	Texas	T104704192
Louisiana-DEQ	AI-84596	Utah	MN00064
Louisiana-DW	MN00064	Vermont	VT-027053137
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Michigan	9909	West Virginia-D	382
Minnesota	027-053-137	West Virginia-D	9952C
Minnesota-Ag	via MN 027-053	Wisconsin	999407970
Minnesota-Petr	1240	Wyoming-UST	via A2LA 2926.
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Sample ID Cross Reference

Client Sample ID	Pace Sample ID	Date Received	Sample Type
BLANK	40243069001	04/09/2022	Water
GP-1 (4.5')	40243069002	04/09/2022	Solid
GP-2 (4')	40243069003	04/09/2022	Solid

REPORT OF LABORATORY ANALYSIS

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 4/7/2022 **Results Requested By:** 4/28/2022

Workorder: 40243069 **Workorder Name:** 25221165 HILL FARMS HEATING PL

Report To

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

Subcontract To

Pace Analytical Minnesota
1700 Elm Street SE
Suite 200
Minneapolis, MN 55414
Phone (612)607-1700

Requested Analysis

WO#: 10604041

10604041

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	PFAS (33 WDNR targets)	LAB USE ONLY
1	BLANK	PS	4/6/2022 09:00	40243069001	Water	1	X	001
2	GP-1 (4.5')	PS	4/6/2022 09:15	40243069002	Solid	1	X	002
3	GP-2 (4')	PS	4/6/2022 09:40	40243069003	Solid	1	X	003
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Anthony Vendel	4/8/22 1100	[illegible]	4/9/22 1345
2				
3				

Comments: moisture is not being measured in Green Bay.

Cooler Temperature on Receipt 1.2 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

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

Pace Analytical®	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 06Jan2022 Page 1 of 1
	Document No.: ENV-FRM-MIN4-0150 Rev.04	Pace Analytical Services - Minneapolis

Sample Condition Upon Receipt

Client Name: Pace Analytical

Project #: **WO#: 10604041**

PM: SCU **Due Date: 05/02/22**

CLIENT: PASI-WI

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: _____ See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☑ T4(0254) ☐ T5(0489) ☐ 01339252/1710 ☐ 122639816 ☐ 140792808 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☐ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.1 °C **Average Corrected Temp (no temp blank only):** _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 1.2 °C

USDA Regulated Soil: (☑ N/A, water sample/Other: Solid) **Date/Initials of Person Examining Contents:** KN 04/09/22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☑ Minneapolis ☐ Virginia				**COMMENTS:**
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☑ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If Fecal: ☐ <8 hrs ☐ >8hr, <24 hrs, ☐ >24 hrs
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other_____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		8.
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other- Solid	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Sara C. Hugo **Date:** 04/11/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: KN

Report No....1060401_ID36_DFR

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here: UD243069

ALL SHADED AREAS are for LAB USE ONLY

Company: SCS Engineers	Billing Information:
Address: 2830 Dairy Dr, Madison, WI 53718	
Report To: Ray Tierney	Email To: rtierney@scsengineers.com
Copy To: Jackie Pennebohm	Site Collection Info/Address:
Customer Project Name/Number: 25221165 Hill Farms Heating Plant	State: County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Jackie Pennebohm	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Normal Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses: DFAS

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY: Lab Sample # / Comments: TP 4/7/22

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	DFAS	Lab Sample # / Comments
Blank	DI		4/6	900					X	001
GP-1 (4.5')	S			915					X	002
GP-2	S			940					X	003

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2763944

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: 113

Cooler 1 Temp Upon Receipt: 3 oC

Cooler 1 Therm Corr. Factor: -1 oC

Cooler 1 Corrected Temp: 3-1 oC

TP 4/7/22

Comments:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: of

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	1330 4.6.22		
Relinquished by/Company: (Signature) CS logistics	4/7/22 0800	TP/FedEx Pace	4/7/22 0800
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40243069

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

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

Pace Lab #	Glass								Plastic					Vials						Jars				General			VOA Vials (>6mm) *	Initial when completed: H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	Date/ Time: HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN							
001										1																							2.5 / 5 / 10
002																																	2.5 / 5 / 10
003										1																							2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																	TIP																2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

4/7/22

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

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40243069

40243069

Client Name: SCS Engineers

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other:

Tracking #:

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

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

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used SR - 113 **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 3 /Corr: 3.1

Person examining contents:

Temp Blank Present: ☑ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Date: 4/7/22 Initials: TP

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

Labeled By Initials:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. pg #, Filtered, Preservative type TP 4/7/22
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. 003 (4°) not included on COC TP 4/7/22
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40243069001	BLANK	SW3535	32864	PFAS-36	Q220413A_02
40243069002	GP-1 (4.5')	SW3535	32841	PFAS-36	Q220416A_02
40243069003	GP-2 (4')	SW3535	32841	PFAS-36	Q220416A_02

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise (EDL)

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
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www.pacelabs.com

Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLANK	Extraction Date	04/12/2022 11:17
Lab Sample ID	40243069001	Total Amount Extracted	253mL
Lab File ID	Q220413A_036	Ical ID	220412B01
Matrix	Non_Potable_Water	CCal File	Q220413A_027
Collected	04/06/2022 09:00	Ending CCal File	Q220413A_038
Received	04/09/2022 13:45	Blank File	Q220413A_023

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	DL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	2.0	0.44	0.44	1	375-22-4		04/13/2022 22:56
PFPeA	ND	2.0	0.43	0.43	1	2706-90-3		04/13/2022 22:56
HFPO-DA	ND	2.0	0.52	0.52	1	13252-13-6		04/13/2022 22:56
PFBS	ND	1.7	0.47	0.47	1	375-73-5		04/13/2022 22:56
PFHxA	ND	2.0	0.43	0.43	1	307-24-4		04/13/2022 22:56
4:2 FTS	ND	1.8	0.55	0.55	1	757124-72-		04/13/2022 22:56
PFPeS	ND	1.9	0.47	0.47	1	2706-91-4		04/13/2022 22:56
PFHpA	ND	2.0	0.54	0.54	1	375-85-9		04/13/2022 22:56
DONA	ND	1.9	0.51	0.51	1	919005-14-		04/13/2022 22:56
PFHxS	ND	1.8	0.50	0.50	1	355-46-4		04/13/2022 22:56
PFOA	ND	2.0	0.58	0.58	1	335-67-1		04/13/2022 22:56
6:2 FTS	ND	1.9	0.64	0.64	1	27619-97-2		04/13/2022 22:56
PFHpS	ND	1.9	0.41	0.41	1	375-92-8		04/13/2022 22:56
PFNA	ND	2.0	0.73	0.73	1	375-95-1		04/13/2022 22:56
PFOSAm	ND	2.0	0.81	0.81	1	754-91-6		04/13/2022 22:56
PFOS	ND	1.8	0.54	0.54	1	1763-23-1		04/13/2022 22:56
MeFOSA	ND	2.0	0.50	0.50	1	31506-32-8		04/13/2022 22:56
PFDA	ND	2.0	0.56	0.56	1	335-76-2		04/13/2022 22:56
EtFOSAm	ND	2.0	0.60	0.60	1	4151-50-2		04/13/2022 22:56
8:2 FTS	ND	1.9	0.65	0.65	1	39108-34-4		04/13/2022 22:56
9-Cl-PF3ON	ND	1.8	0.30	0.30	1	756426-58-		04/13/2022 22:56
PFNS	ND	1.9	0.44	0.44	1	68259-12-1		04/13/2022 22:56
PFUnDA	ND	2.0	0.53	0.53	1	2058-94-8		04/13/2022 22:56
NMeFOSAA	ND	2.0	0.43	0.43	1	2355-31-9		04/13/2022 22:56
NEtFOSAA	ND	2.0	0.55	0.55	1	2991-50-6		04/13/2022 22:56
PFDS	ND	1.9	0.44	0.44	1	335-77-3		04/13/2022 22:56
PFDOA	ND	2.0	0.48	0.48	1	307-55-1		04/13/2022 22:56
MeFOSE	ND	2.0	0.33	0.33	1	24448-09-7		04/13/2022 22:56
EtFOSE	ND	2.0	0.49	0.49	1	1691-99-2		04/13/2022 22:56
11-Cl-PF3OUdS	ND	1.9	0.43	0.43	1	763051-92-		04/13/2022 22:56
PFTrDA	ND	2.0	0.61	0.61	1	72629-94-8		04/13/2022 22:56
PFDoS	ND	1.9	0.45	0.45	1	79780-39-5		04/13/2022 22:56
PFTDA	ND	2.0	0.47	0.47	1	376-06-7		04/13/2022 22:56

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLANK	Extraction Date	04/12/2022 11:17
Lab Sample ID	40243069001	Total Amount Extracted	253mL
Lab File ID	Q220413A_036	Ical ID	220412B01
Matrix	Non_Potable_Water	CCal File	Q220413A_027
Collected	04/06/2022 09:00	Ending CCal File	Q220413A_038
Received	04/09/2022 13:45	Blank File	Q220413A_023

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	20	20	99	50-150		04/13/2022 22:56
13C4_PFOA	20	20	103	50-150		04/13/2022 22:56
13C2_PFDA	20	25	126	50-150		04/13/2022 22:56
13C4_PFOS	19	23	120	50-150		04/13/2022 22:56

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	20	22	110	25-150		04/13/2022 22:56
13C5_PFPeA	20	21	107	25-150		04/13/2022 22:56
13C3_PFBS	18	20	110	25-150		04/13/2022 22:56
13C2_4:2FTS	18	22	121	25-150		04/13/2022 22:56
13C5_PFHxA	20	21	107	25-150		04/13/2022 22:56
13C4_PFHpA	20	19	95	25-150		04/13/2022 22:56
13C3_PFHxS	19	22	115	25-150		04/13/2022 22:56
13C2_6:2FTS	19	23	120	25-150		04/13/2022 22:56
13C8_PFOA	20	22	112	25-150		04/13/2022 22:56
13C9_PFNA	20	22	110	25-150		04/13/2022 22:56
13C8_PFOS	19	24	125	25-150		04/13/2022 22:56
13C2_8:2FTS	19	21	111	25-150		04/13/2022 22:56
13C6_PFDA	20	27	134	25-150		04/13/2022 22:56
d3-MeFOSAA	20	20	99	25-150		04/13/2022 22:56
13C8_PFOSA	20	18	90	25-150		04/13/2022 22:56
d5-EtFOSAA	20	18	91	25-150		04/13/2022 22:56
13C7_PFUdA	20	23	117	25-150		04/13/2022 22:56
13C2_PFDoA	20	24	119	25-150		04/13/2022 22:56
13C2_PFTeDA	20	19	95	25-150		04/13/2022 22:56
13C3_HFPO-DA	20	21	107	25-150		04/13/2022 22:56
d7-N-MeFOSE	20	18	92	10-150		04/13/2022 22:56
d9-N-EtFOSE	20	18	90	10-150		04/13/2022 22:56
d3-N-MeFOSA	20	14	70	10-150		04/13/2022 22:56
d5-N-EtFOSA	20	15	76	10-150		04/13/2022 22:56

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Collected	04/06/2022 09:00	Ending CCal File	Q220413A_038
Received	04/09/2022 13:45	Blank File	Q220413A_023

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	6.17	6.17	60		04/13/2022 22:56
13C4_PFOA	N/A	N/A	7.40	7.43	72		04/13/2022 22:56
13C2_PFDA	N/A	N/A	8.68	8.67	49		04/13/2022 22:56
13C4_PFOS	N/A	N/A	9.22	9.19	43		04/13/2022 22:56

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.82	4.79	34		04/13/2022 22:56
13C5_PFPeA	N/A	N/A	5.56	5.54	55		04/13/2022 22:56
13C3_PFBS	N/A	N/A	6.50	6.45	13		04/13/2022 22:56
13C2_4:2FTS	N/A	N/A	5.92	5.89	21		04/13/2022 22:56
13C5_PFHxA	N/A	N/A	6.18	6.15	54		04/13/2022 22:56
13C4_PFHpA	N/A	N/A	6.79	6.80	50		04/13/2022 22:56
13C3_PFHxS	N/A	N/A	7.88	7.89	53		04/13/2022 22:56
13C2_6:2FTS	N/A	N/A	7.07	7.09	40		04/13/2022 22:56
13C8_PFOA	N/A	N/A	7.40	7.43	56		04/13/2022 22:56
13C9_PFNA	N/A	N/A	8.03	8.07	86		04/13/2022 22:56
13C8_PFOS	N/A	N/A	9.22	9.25	46		04/13/2022 22:56
13C2_8:2FTS	N/A	N/A	8.30	8.35	45		04/13/2022 22:56
13C6_PFDA	N/A	N/A	8.68	8.73	57		04/13/2022 22:56
d3-MeFOSAA	N/A	N/A	8.55	8.61	36		04/13/2022 22:56
13C8_PFOSA	N/A	N/A	11.45	11.40	49		04/13/2022 22:56
d5-EtFOSAA	N/A	N/A	8.85	8.92	31		04/13/2022 22:56
13C7_PFUdA	N/A	N/A	9.34	9.39	54		04/13/2022 22:56
13C2_PFDoA	N/A	N/A	10.00	10.07	49		04/13/2022 22:56
13C2_PFTeDA	N/A	N/A	11.33	11.39	69		04/13/2022 22:56
13C3_HFPO-DA	N/A	N/A	6.43	6.43	56		04/13/2022 22:56
d7-N-MeFOSE	N/A	N/A	13.11	13.06	18		04/13/2022 22:56
d9-N-EtFOSE	N/A	N/A	13.60	13.54	34		04/13/2022 22:56
d3-N-MeFOSA	N/A	N/A	13.32	13.26	27		04/13/2022 22:56
d5-N-EtFOSA	N/A	N/A	13.76	13.69	36		04/13/2022 22:56

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Matrix	Non_Potable_Water	CCal File	Q220413A_027
Collected	04/06/2022 09:00	Ending CCal File	Q220413A_038
Received	04/09/2022 13:45	Blank File	Q220413A_023

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.82	4.79	ND		04/13/2022 22:56
PFPeA	N/A	N/A	5.57	5.55	ND		04/13/2022 22:56
HFPO-DA	0.00	0.43	0.00	6.45	ND		04/13/2022 22:56
PFBS	0.45	0.32	6.51	6.48	ND		04/13/2022 22:56
PFHxA	0.25	0.09	6.18	6.18	ND		04/13/2022 22:56
4:2 FTS	0.00	0.93	0.00	5.91	ND		04/13/2022 22:56
PFPeS	0.00	0.40	0.00	7.21	ND		04/13/2022 22:56
PFHpA	0.00	0.50	0.00	6.81	ND		04/13/2022 22:56
DONA	0.00	0.60	0.00	7.04	ND		04/13/2022 22:56
PFHxS	0.00	0.34	0.00	7.90	ND		04/13/2022 22:56
PFOA	0.00	0.32	0.00	7.44	ND		04/13/2022 22:56
6:2 FTS	1.80	1.20	7.07	7.10	ND		04/13/2022 22:56
PFHpS	0.00	0.45	0.00	8.59	ND		04/13/2022 22:56
PFNA	0.00	0.26	0.00	8.08	ND		04/13/2022 22:56
PFOSAm	N/A	N/A	11.46	11.41	ND		04/13/2022 22:56
PFOS	0.00	0.22	0.00	9.26	ND		04/13/2022 22:56
MeFOSA	0.00	0.50	0.00	13.29	ND		04/13/2022 22:56
PFDA	0.00	0.20	0.00	8.74	ND		04/13/2022 22:56
EtFOSAm	0.00	0.42	0.00	13.72	ND		04/13/2022 22:56
8:2 FTS	0.00	1.40	0.00	8.35	ND		04/13/2022 22:56
9-Cl-PF3ON	0.00	0.04	0.00	9.75	ND		04/13/2022 22:56
PFNS	0.00	0.23	0.00	9.93	ND		04/13/2022 22:56
PFUnDA	0.00	0.18	0.00	9.40	ND		04/13/2022 22:56
NMeFOSAA	0.00	0.71	0.00	8.62	ND		04/13/2022 22:56
NEtFOSAA	0.00	0.52	0.00	8.87	ND		04/13/2022 22:56
PFDS	0.00	0.29	0.00	10.59	ND		04/13/2022 22:56
PFDOA	0.00	0.18	0.00	10.08	ND		04/13/2022 22:56
MeFOSE	N/A	N/A	0.00	13.09	ND		04/13/2022 22:56
EtFOSE	0.00	0.00	0.00	13.56	ND		04/13/2022 22:56
11-Cl-PF3OUdS	0.00	0.02	0.00	11.01	ND		04/13/2022 22:56
PFTrDA	0.00	0.22	0.00	10.71	ND		04/13/2022 22:56
PFDoS	0.00	0.24	0.00	11.75	ND		04/13/2022 22:56
PFTDA	0.00	0.18	0.00	11.34	ND		04/13/2022 22:56

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-1 (4.5')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069002	Total Amount Extracted	5.03g
Lab File ID	Q220416A_029	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:15	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	DL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.033 J	0.09	0.02	0.02	1	375-22-4		04/16/2022 13:13
PFPeA	0.10	0.09	0.02	0.02	1	2706-90-3		04/16/2022 13:13
HFPO-DA	ND	0.09	0.03	0.03	1	13252-13-6		04/16/2022 13:13
PFBS	ND	0.08	0.02	0.02	1	375-73-5		04/16/2022 13:13
PFHxA	0.051 J	0.09	0.03	0.03	1	307-24-4		04/16/2022 13:13
4:2 FTS	ND	0.09	0.03	0.03	1	757124-72-		04/16/2022 13:13
PFPeS	ND	0.09	0.01	0.01	1	2706-91-4		04/16/2022 13:13
PFHpA	0.040 J	0.09	0.02	0.02	1	375-85-9		04/16/2022 13:13
DONA	ND	0.09	0.03	0.03	1	919005-14-		04/16/2022 13:13
PFHxS	ND	0.09	0.02	0.02	1	355-46-4		04/16/2022 13:13
PFOA	ND	0.09	0.02	0.02	1	335-67-1		04/16/2022 13:13
6:2 FTS	2.3	0.09	0.03	0.03	1	27619-97-2		04/16/2022 13:13
PFHpS	ND	0.09	0.02	0.02	1	375-92-8		04/16/2022 13:13
PFNA	ND	0.09	0.02	0.02	1	375-95-1		04/16/2022 13:13
PFOSAm	ND	0.09	0.02	0.02	1	754-91-6		04/16/2022 13:13
PFOS	ND	0.09	0.02	0.02	1	1763-23-1		04/16/2022 13:13
MeFOSA	ND	0.09	0.02	0.02	1	31506-32-8		04/16/2022 13:13
PFDA	ND	0.09	0.02	0.02	1	335-76-2		04/16/2022 13:13
EtFOSAm	ND	0.09	0.02	0.02	1	4151-50-2		04/16/2022 13:13
8:2 FTS	ND	0.09	0.02	0.02	1	39108-34-4		04/16/2022 13:13
9-Cl-PF3ON	ND	0.09	0.01	0.01	1	756426-58-		04/16/2022 13:13
PFNS	ND	0.09	0.01	0.01	1	68259-12-1		04/16/2022 13:13
PFUnDA	ND	0.09	0.02	0.02	1	2058-94-8		04/16/2022 13:13
NMeFOSAA	ND	0.09	0.02	0.02	1	2355-31-9		04/16/2022 13:13
NEtFOSAA	ND	0.09	0.02	0.02	1	2991-50-6		04/16/2022 13:13
PFDS	ND	0.09	0.02	0.02	1	335-77-3		04/16/2022 13:13
PFDOA	ND	0.09	0.02	0.02	1	307-55-1		04/16/2022 13:13
MeFOSE	ND	0.09	0.02	0.02	1	24448-09-7		04/16/2022 13:13
EtFOSE	ND	0.09	0.02	0.02	1	1691-99-2		04/16/2022 13:13
11-Cl-PF3OUdS	ND	0.09	0.01	0.01	1	763051-92-		04/16/2022 13:13
PFTrDA	ND	0.09	0.02	0.02	1	72629-94-8		04/16/2022 13:13
PFDoS	ND	0.09	0.03	0.03	1	79780-39-5		04/16/2022 13:13
PFTDA	ND	0.09	0.03	0.03	1	376-06-7		04/16/2022 13:13

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-1 (4.5')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069002	Total Amount Extracted	5.03g
Lab File ID	Q220416A_029	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:15	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	0.99	0.98	98	50-150		04/16/2022 13:13
13C4_PFOA	0.99	1.0	101	50-150		04/16/2022 13:13
13C2_PFDA	0.99	1.1	115	50-150		04/16/2022 13:13
13C4_PFOS	0.95	0.89	93	50-150		04/16/2022 13:13

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	0.99	0.85	86	25-150		04/16/2022 13:13
13C5_PFPeA	0.99	0.84	84	25-150		04/16/2022 13:13
13C3_PFBS	0.92	0.75	81	25-150		04/16/2022 13:13
13C2_4:2FTS	0.93	0.75	81	25-150		04/16/2022 13:13
13C5_PFHxA	0.99	0.75	75	25-150		04/16/2022 13:13
13C4_PFHpA	0.99	0.77	77	25-150		04/16/2022 13:13
13C3_PFHxS	0.94	0.80	85	25-150		04/16/2022 13:13
13C2_6:2FTS	0.94	0.77	82	25-150		04/16/2022 13:13
13C8_PFOA	0.99	0.80	80	25-150		04/16/2022 13:13
13C9_PFNA	0.99	0.84	84	25-150		04/16/2022 13:13
13C8_PFOS	0.95	0.78	82	25-150		04/16/2022 13:13
13C2_8:2FTS	0.95	0.81	85	25-150		04/16/2022 13:13
13C6_PFDA	0.99	0.73	73	25-150		04/16/2022 13:13
d3-MeFOSAA	0.99	0.94	95	25-150		04/16/2022 13:13
13C8_PFOSA	0.99	0.74	75	25-150		04/16/2022 13:13
d5-EtFOSAA	0.99	0.70	70	25-150		04/16/2022 13:13
13C7_PFUdA	0.99	0.88	89	25-150		04/16/2022 13:13
13C2_PFDoA	0.99	0.58	58	25-150		04/16/2022 13:13
13C2_PFTeDA	0.99	0.57	57	25-150		04/16/2022 13:13
13C3_HFPO-DA	0.99	0.74	74	25-150		04/16/2022 13:13
d7-N-MeFOSE	0.99	0.58	58	10-150		04/16/2022 13:13
d9-N-EtFOSE	0.99	0.55	55	10-150		04/16/2022 13:13
d3-N-MeFOSA	0.99	0.65	66	10-150		04/16/2022 13:13
d5-N-EtFOSA	0.99	0.60	61	10-150		04/16/2022 13:13

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-1 (4.5')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069002	Total Amount Extracted	5.03g
Lab File ID	Q220416A_029	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:15	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	6.18	6.19	47		04/16/2022 13:13
13C4_PFOA	N/A	N/A	7.41	7.42	77		04/16/2022 13:13
13C2_PFDA	N/A	N/A	8.69	8.71	44		04/16/2022 13:13
13C4_PFOS	N/A	N/A	9.23	9.25	57		04/16/2022 13:13

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.82	4.82	38		04/16/2022 13:13
13C5_PFPeA	N/A	N/A	5.57	5.57	71		04/16/2022 13:13
13C3_PFBS	N/A	N/A	6.50	6.51	10		04/16/2022 13:13
13C2_4:2FTS	N/A	N/A	5.92	5.93	11		04/16/2022 13:13
13C5_PFHxA	N/A	N/A	6.19	6.19	46		04/16/2022 13:13
13C4_PFHpA	N/A	N/A	6.80	6.80	42		04/16/2022 13:13
13C3_PFHxS	N/A	N/A	7.89	7.90	65		04/16/2022 13:13
13C2_6:2FTS	N/A	N/A	7.08	7.09	30		04/16/2022 13:13
13C8_PFOA	N/A	N/A	7.41	7.43	48		04/16/2022 13:13
13C9_PFNA	N/A	N/A	8.04	8.07	76		04/16/2022 13:13
13C8_PFOS	N/A	N/A	9.23	9.25	43		04/16/2022 13:13
13C2_8:2FTS	N/A	N/A	8.31	8.35	57		04/16/2022 13:13
13C6_PFDA	N/A	N/A	8.69	8.70	46		04/16/2022 13:13
d3-MeFOSAA	N/A	N/A	8.56	8.61	67		04/16/2022 13:13
13C8_PFOSA	N/A	N/A	11.45	11.45	47		04/16/2022 13:13
d5-EtFOSAA	N/A	N/A	8.86	8.88	31		04/16/2022 13:13
13C7_PFUdA	N/A	N/A	9.35	9.36	75		04/16/2022 13:13
13C2_PFDoA	N/A	N/A	10.02	10.04	41		04/16/2022 13:13
13C2_PFTeDA	N/A	N/A	11.34	11.36	54		04/16/2022 13:13
13C3_HFPO-DA	N/A	N/A	6.44	6.44	49		04/16/2022 13:13
d7-N-MeFOSE	N/A	N/A	13.11	13.10	13		04/16/2022 13:13
d9-N-EtFOSE	N/A	N/A	13.60	13.59	29		04/16/2022 13:13
d3-N-MeFOSA	N/A	N/A	13.32	13.31	28		04/16/2022 13:13
d5-N-EtFOSA	N/A	N/A	13.77	13.75	36		04/16/2022 13:13

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-1 (4.5')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069002	Total Amount Extracted	5.03g
Lab File ID	Q220416A_029	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:15	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.82	4.82	60	J	04/16/2022 13:13
PFPeA	N/A	N/A	5.57	5.57	97		04/16/2022 13:13
HFPO-DA	0.00	0.58	0.00	6.46	ND		04/16/2022 13:13
PFBS	0.00	0.34	0.00	6.52	ND		04/16/2022 13:13
PFHxA	0.08	0.08	6.19	6.20	64	J	04/16/2022 13:13
4:2 FTS	0.00	0.96	0.00	5.93	ND		04/16/2022 13:13
PFPeS	0.00	0.47	0.00	7.23	ND		04/16/2022 13:13
PFHpA	0.47	0.45	6.80	6.82	51	J	04/16/2022 13:13
DONA	0.00	0.52	0.00	7.04	ND		04/16/2022 13:13
PFHxS	0.00	0.34	0.00	7.91	ND		04/16/2022 13:13
PFOA	0.00	0.32	0.00	7.44	ND		04/16/2022 13:13
6:2 FTS	1.30	1.30	7.08	7.10	31		04/16/2022 13:13
PFHpS	0.00	0.43	0.00	8.59	ND		04/16/2022 13:13
PFNA	0.46	0.28	8.05	8.08	ND		04/16/2022 13:13
PFOSAm	N/A	N/A	11.48	11.46	ND		04/16/2022 13:13
PFOS	0.00	0.26	0.00	9.26	ND		04/16/2022 13:13
MeFOSA	0.00	0.49	0.00	13.33	ND		04/16/2022 13:13
PFDA	0.00	0.20	0.00	8.72	ND		04/16/2022 13:13
EtFOSAm	0.41	0.42	13.80	13.78	ND		04/16/2022 13:13
8:2 FTS	0.00	1.30	0.00	8.33	ND		04/16/2022 13:13
9-Cl-PF3ON	0.00	0.04	0.00	9.75	ND		04/16/2022 13:13
PFNS	0.00	0.25	0.00	9.93	ND		04/16/2022 13:13
PFUnDA	0.00	0.20	0.00	9.40	ND		04/16/2022 13:13
NMeFOSAA	0.00	0.70	0.00	8.62	ND		04/16/2022 13:13
NEtFOSAA	0.00	0.46	0.00	8.87	ND		04/16/2022 13:13
PFDS	0.00	0.29	0.00	10.59	ND		04/16/2022 13:13
PFDOA	0.00	0.21	0.00	10.08	ND		04/16/2022 13:13
MeFOSE	N/A	N/A	0.00	13.09	ND		04/16/2022 13:13
EtFOSE	0.00	0.00	13.65	13.56	ND		04/16/2022 13:13
11-Cl-PF3OUdS	0.00	0.02	0.00	11.01	ND		04/16/2022 13:13
PFTrDA	0.00	0.21	0.00	10.71	ND		04/16/2022 13:13
PFDoS	0.00	0.24	0.00	11.82	ND		04/16/2022 13:13
PFTDA	0.00	0.16	0.00	11.37	ND		04/16/2022 13:13

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-2 (4')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069003	Total Amount Extracted	5.04g
Lab File ID	Q220416A_030	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:40	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	DL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.065 J	0.09	0.02	0.02	1	375-22-4		04/16/2022 13:32
PFPeA	0.17	0.09	0.02	0.02	1	2706-90-3		04/16/2022 13:32
HFPO-DA	ND	0.09	0.02	0.02	1	13252-13-6		04/16/2022 13:32
PFBS	ND	0.08	0.02	0.02	1	375-73-5		04/16/2022 13:32
PFHxA	0.082 J	0.09	0.03	0.03	1	307-24-4		04/16/2022 13:32
4:2 FTS	ND	0.09	0.03	0.03	1	757124-72-		04/16/2022 13:32
PFPeS	ND	0.09	0.01	0.01	1	2706-91-4		04/16/2022 13:32
PFHpA	0.10	0.09	0.02	0.02	1	375-85-9		04/16/2022 13:32
DONA	ND	0.09	0.03	0.03	1	919005-14-		04/16/2022 13:32
PFHxS	ND	0.09	0.02	0.02	1	355-46-4		04/16/2022 13:32
PFOA	ND	0.09	0.02	0.02	1	335-67-1		04/16/2022 13:32
6:2 FTS	ND	0.09	0.03	0.03	1	27619-97-2		04/16/2022 13:32
PFHpS	ND	0.09	0.02	0.02	1	375-92-8		04/16/2022 13:32
PFNA	ND	0.09	0.02	0.02	1	375-95-1		04/16/2022 13:32
PFOSAm	ND	0.09	0.02	0.02	1	754-91-6		04/16/2022 13:32
PFOS	0.16	0.09	0.02	0.02	1	1763-23-1		04/16/2022 13:32
MeFOSA	ND	0.09	0.02	0.02	1	31506-32-8		04/16/2022 13:32
PFDA	ND	0.09	0.02	0.02	1	335-76-2		04/16/2022 13:32
EtFOSAm	ND	0.09	0.02	0.02	1	4151-50-2		04/16/2022 13:32
8:2 FTS	ND	0.09	0.02	0.02	1	39108-34-4		04/16/2022 13:32
9-Cl-PF3ON	ND	0.09	0.01	0.01	1	756426-58-		04/16/2022 13:32
PFNS	ND	0.09	0.01	0.01	1	68259-12-1		04/16/2022 13:32
PFUnDA	ND	0.09	0.02	0.02	1	2058-94-8		04/16/2022 13:32
NMeFOSAA	ND	0.09	0.02	0.02	1	2355-31-9		04/16/2022 13:32
NEtFOSAA	ND	0.09	0.02	0.02	1	2991-50-6		04/16/2022 13:32
PFDS	ND	0.09	0.02	0.02	1	335-77-3		04/16/2022 13:32
PFDOA	ND	0.09	0.02	0.02	1	307-55-1		04/16/2022 13:32
MeFOSE	ND	0.09	0.02	0.02	1	24448-09-7		04/16/2022 13:32
EtFOSE	ND	0.09	0.02	0.02	1	1691-99-2		04/16/2022 13:32
11-Cl-PF3OUdS	ND	0.09	0.01	0.01	1	763051-92-		04/16/2022 13:32
PFTrDA	ND	0.09	0.02	0.02	1	72629-94-8		04/16/2022 13:32
PFDoS	ND	0.09	0.03	0.03	1	79780-39-5		04/16/2022 13:32
PFTDA	ND	0.09	0.03	0.03	1	376-06-7		04/16/2022 13:32

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-2 (4')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069003	Total Amount Extracted	5.04g
Lab File ID	Q220416A_030	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:40	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	0.99	0.95	96	50-150		04/16/2022 13:32
13C4_PFOA	0.99	0.91	92	50-150		04/16/2022 13:32
13C2_PFDA	0.99	0.82	83	50-150		04/16/2022 13:32
13C4_PFOS	0.95	0.88	93	50-150		04/16/2022 13:32

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	0.99	0.81	82	25-150		04/16/2022 13:32
13C5_PFPeA	0.99	0.82	82	25-150		04/16/2022 13:32
13C3_PFBS	0.92	0.70	76	25-150		04/16/2022 13:32
13C2_4:2FTS	0.93	0.72	78	25-150		04/16/2022 13:32
13C5_PFHxA	0.99	0.82	83	25-150		04/16/2022 13:32
13C4_PFHpA	0.99	0.79	80	25-150		04/16/2022 13:32
13C3_PFHxS	0.94	0.74	79	25-150		04/16/2022 13:32
13C2_6:2FTS	0.94	0.82	87	25-150		04/16/2022 13:32
13C8_PFOA	0.99	0.79	80	25-150		04/16/2022 13:32
13C9_PFNA	0.99	0.81	82	25-150		04/16/2022 13:32
13C8_PFOS	0.95	0.78	82	25-150		04/16/2022 13:32
13C2_8:2FTS	0.95	0.75	79	25-150		04/16/2022 13:32
13C6_PFDA	0.99	0.70	71	25-150		04/16/2022 13:32
d3-MeFOSAA	0.99	0.85	86	25-150		04/16/2022 13:32
13C8_PFOSA	0.99	0.61	62	25-150		04/16/2022 13:32
d5-EtFOSAA	0.99	0.72	73	25-150		04/16/2022 13:32
13C7_PFUdA	0.99	0.70	71	25-150		04/16/2022 13:32
13C2_PFDoA	0.99	0.60	61	25-150		04/16/2022 13:32
13C2_PFTeDA	0.99	0.61	62	25-150		04/16/2022 13:32
13C3_HFPO-DA	0.99	0.78	79	25-150		04/16/2022 13:32
d7-N-MeFOSE	0.99	0.48	48	10-150		04/16/2022 13:32
d9-N-EtFOSE	0.99	0.42	43	10-150		04/16/2022 13:32
d3-N-MeFOSA	0.99	0.62	63	10-150		04/16/2022 13:32
d5-N-EtFOSA	0.99	0.60	60	10-150		04/16/2022 13:32

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-2 (4')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069003	Total Amount Extracted	5.04g
Lab File ID	Q220416A_030	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:40	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	6.19	6.19	60		04/16/2022 13:32
13C4_PFOA	N/A	N/A	7.41	7.42	64		04/16/2022 13:32
13C2_PFDA	N/A	N/A	8.69	8.71	56		04/16/2022 13:32
13C4_PFOS	N/A	N/A	9.23	9.25	42		04/16/2022 13:32

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.82	4.82	40		04/16/2022 13:32
13C5_PFPeA	N/A	N/A	5.57	5.57	74		04/16/2022 13:32
13C3_PFBS	N/A	N/A	6.51	6.51	13		04/16/2022 13:32
13C2_4:2FTS	N/A	N/A	5.93	5.93	11		04/16/2022 13:32
13C5_PFHxA	N/A	N/A	6.19	6.19	75		04/16/2022 13:32
13C4_PFHpA	N/A	N/A	6.80	6.80	51		04/16/2022 13:32
13C3_PFHxS	N/A	N/A	7.89	7.90	78		04/16/2022 13:32
13C2_6:2FTS	N/A	N/A	7.08	7.09	56		04/16/2022 13:32
13C8_PFOA	N/A	N/A	7.41	7.43	59		04/16/2022 13:32
13C9_PFNA	N/A	N/A	8.04	8.07	71		04/16/2022 13:32
13C8_PFOS	N/A	N/A	9.23	9.25	50		04/16/2022 13:32
13C2_8:2FTS	N/A	N/A	8.31	8.35	48		04/16/2022 13:32
13C6_PFDA	N/A	N/A	8.70	8.70	54		04/16/2022 13:32
d3-MeFOSAA	N/A	N/A	8.56	8.61	45		04/16/2022 13:32
13C8_PFOSA	N/A	N/A	11.46	11.45	49		04/16/2022 13:32
d5-EtFOSAA	N/A	N/A	8.87	8.88	38		04/16/2022 13:32
13C7_PFUdA	N/A	N/A	9.35	9.36	56		04/16/2022 13:32
13C2_PFDoA	N/A	N/A	10.02	10.04	47		04/16/2022 13:32
13C2_PFTeDA	N/A	N/A	11.34	11.36	67		04/16/2022 13:32
13C3_HFPO-DA	N/A	N/A	6.44	6.44	50		04/16/2022 13:32
d7-N-MeFOSE	N/A	N/A	13.11	13.10	13		04/16/2022 13:32
d9-N-EtFOSE	N/A	N/A	13.61	13.59	23		04/16/2022 13:32
d3-N-MeFOSA	N/A	N/A	13.33	13.31	28		04/16/2022 13:32
d5-N-EtFOSA	N/A	N/A	13.77	13.75	51		04/16/2022 13:32

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Sample Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	GP-2 (4')	Extraction Date	04/13/2022 16:00
Lab Sample ID	40243069003	Total Amount Extracted	5.04g
Lab File ID	Q220416A_030	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_028
Collected	04/06/2022 09:40	Ending CCal File	Q220416A_033
Received	04/09/2022 13:45	Blank File	Q220416A_007

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.83	4.82	11	J	04/16/2022 13:32
PFPeA	N/A	N/A	5.58	5.57	13		04/16/2022 13:32
HFPO-DA	0.00	0.58	0.00	6.46	ND		04/16/2022 13:32
PFBS	0.24	0.34	6.52	6.52	ND		04/16/2022 13:32
PFHxA	0.07	0.08	6.20	6.20	74	J	04/16/2022 13:32
4:2 FTS	0.00	0.96	0.00	5.93	ND		04/16/2022 13:32
PFPeS	0.00	0.47	0.00	7.23	ND		04/16/2022 13:32
PFHpA	0.54	0.45	6.81	6.82	60		04/16/2022 13:32
DONA	0.00	0.52	0.00	7.04	ND		04/16/2022 13:32
PFHxS	0.33	0.34	7.90	7.91	ND		04/16/2022 13:32
PFOA	0.27	0.32	7.42	7.44	ND		04/16/2022 13:32
6:2 FTS	1.80	1.30	7.08	7.10	ND		04/16/2022 13:32
PFHpS	0.00	0.43	0.00	8.59	ND		04/16/2022 13:32
PFNA	0.26	0.28	8.04	8.08	ND		04/16/2022 13:32
PFOSAm	N/A	N/A	0.00	11.46	ND		04/16/2022 13:32
PFOS	0.20	0.26	9.25	9.26	11		04/16/2022 13:32
MeFOSA	0.00	0.49	0.00	13.33	ND		04/16/2022 13:32
PFDA	0.00	0.20	0.00	8.72	ND		04/16/2022 13:32
EtFOSAm	0.00	0.42	0.00	13.78	ND		04/16/2022 13:32
8:2 FTS	0.00	1.30	0.00	8.33	ND		04/16/2022 13:32
9-Cl-PF3ON	0.00	0.04	0.00	9.75	ND		04/16/2022 13:32
PFNS	0.00	0.25	0.00	9.93	ND		04/16/2022 13:32
PFUnDA	0.00	0.20	0.00	9.40	ND		04/16/2022 13:32
NMeFOSAA	0.00	0.70	0.00	8.62	ND		04/16/2022 13:32
NEtFOSAA	0.00	0.46	0.00	8.87	ND		04/16/2022 13:32
PFDS	0.00	0.29	0.00	10.59	ND		04/16/2022 13:32
PFDOA	0.00	0.21	0.00	10.08	ND		04/16/2022 13:32
MeFOSE	N/A	N/A	0.00	13.09	ND		04/16/2022 13:32
EtFOSE	0.00	0.00	0.00	13.56	ND		04/16/2022 13:32
11-Cl-PF3OUdS	0.00	0.02	0.00	11.01	ND		04/16/2022 13:32
PFTrDA	0.00	0.21	0.00	10.71	ND		04/16/2022 13:32
PFDoS	0.00	0.24	0.00	11.82	ND		04/16/2022 13:32
PFTDA	0.00	0.16	0.00	11.37	ND		04/16/2022 13:32

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKI	Extraction Date	04/12/2022 11:17
Lab Sample ID	BLANK-98025	Total Amount Extracted	252mL
Lab File ID	Q220413A_023	Ical ID	220412B01
Matrix	Water	CCal File	Q220413A_016
Collected	04/11/2022 14:52	Ending CCal File	Q220413A_027
Received	04/11/2022 14:52	Blank File	Q220413A_023

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	DL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	2.0	0.44	0.44	1	375-22-4		04/13/2022 18:55
PFPeA	ND	2.0	0.43	0.43	1	2706-90-3		04/13/2022 18:55
HFPO-DA	ND	2.0	0.53	0.53	1	13252-13-6		04/13/2022 18:55
PFBS	ND	1.8	0.47	0.47	1	375-73-5		04/13/2022 18:55
PFHxA	ND	2.0	0.43	0.43	1	307-24-4		04/13/2022 18:55
4:2 FTS	ND	1.9	0.55	0.55	1	757124-72-		04/13/2022 18:55
PFPeS	ND	1.9	0.47	0.47	1	2706-91-4		04/13/2022 18:55
PFHpA	ND	2.0	0.55	0.55	1	375-85-9		04/13/2022 18:55
DONA	ND	1.9	0.51	0.51	1	919005-14-		04/13/2022 18:55
PFHxS	ND	1.8	0.50	0.50	1	355-46-4		04/13/2022 18:55
PFOA	ND	2.0	0.58	0.58	1	335-67-1		04/13/2022 18:55
6:2 FTS	ND	1.9	0.64	0.64	1	27619-97-2		04/13/2022 18:55
PFHpS	ND	1.9	0.41	0.41	1	375-92-8		04/13/2022 18:55
PFNA	ND	2.0	0.73	0.73	1	375-95-1		04/13/2022 18:55
PFOSAm	ND	2.0	0.81	0.81	1	754-91-6		04/13/2022 18:55
PFOS	ND	1.8	0.54	0.54	1	1763-23-1		04/13/2022 18:55
MeFOSA	ND	2.0	0.51	0.51	1	31506-32-8		04/13/2022 18:55
PFDA	ND	2.0	0.56	0.56	1	335-76-2		04/13/2022 18:55
EtFOSAm	ND	2.0	0.60	0.60	1	4151-50-2		04/13/2022 18:55
8:2 FTS	ND	1.9	0.65	0.65	1	39108-34-4		04/13/2022 18:55
9-Cl-PF3ON	ND	1.9	0.30	0.30	1	756426-58-		04/13/2022 18:55
PFNS	ND	1.9	0.44	0.44	1	68259-12-1		04/13/2022 18:55
PFUnDA	ND	2.0	0.54	0.54	1	2058-94-8		04/13/2022 18:55
NMeFOSAA	ND	2.0	0.43	0.43	1	2355-31-9		04/13/2022 18:55
NEtFOSAA	ND	2.0	0.55	0.55	1	2991-50-6		04/13/2022 18:55
PFDS	ND	1.9	0.45	0.45	1	335-77-3		04/13/2022 18:55
PFDOA	ND	2.0	0.48	0.48	1	307-55-1		04/13/2022 18:55
MeFOSE	ND	2.0	0.33	0.33	1	24448-09-7		04/13/2022 18:55
EtFOSE	ND	2.0	0.49	0.49	1	1691-99-2		04/13/2022 18:55
11-Cl-PF3OUdS	ND	1.9	0.43	0.43	1	763051-92-		04/13/2022 18:55
PFTrDA	ND	2.0	0.62	0.62	1	72629-94-8		04/13/2022 18:55
PFDoS	ND	1.9	0.46	0.46	1	79780-39-5		04/13/2022 18:55
PFTDA	ND	2.0	0.47	0.47	1	376-06-7		04/13/2022 18:55

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKI	Extraction Date	04/12/2022 11:17
Lab Sample ID	BLANK-98025	Total Amount Extracted	252mL
Lab File ID	Q220413A_023	Ical ID	220412B01
Matrix	Water	CCal File	Q220413A_016
Collected	04/11/2022 14:52	Ending CCal File	Q220413A_027
Received	04/11/2022 14:52	Blank File	Q220413A_023

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	20	22	109	50-150		04/13/2022 18:55
13C4_PFOA	20	19	97	50-150		04/13/2022 18:55
13C2_PFDA	20	19	95	50-150		04/13/2022 18:55
13C4_PFOS	19	22	116	50-150		04/13/2022 18:55

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	20	20	101	50-150		04/13/2022 18:55
13C5_PFPeA	20	20	101	50-150		04/13/2022 18:55
13C3_PFBS	18	20	106	50-150		04/13/2022 18:55
13C2_4:2FTS	19	21	112	50-150		04/13/2022 18:55
13C5_PFHxA	20	19	95	50-150		04/13/2022 18:55
13C4_PFHpA	20	19	98	50-150		04/13/2022 18:55
13C3_PFHxS	19	20	109	50-150		04/13/2022 18:55
13C2_6:2FTS	19	20	107	50-150		04/13/2022 18:55
13C8_PFOA	20	20	100	50-150		04/13/2022 18:55
13C9_PFNA	20	21	105	50-150		04/13/2022 18:55
13C8_PFOS	19	20	107	50-150		04/13/2022 18:55
13C2_8:2FTS	19	21	109	50-150		04/13/2022 18:55
13C6_PFDA	20	20	103	50-150		04/13/2022 18:55
d3-MeFOSAA	20	19	93	50-150		04/13/2022 18:55
13C8_PFOSA	20	16	81	50-150		04/13/2022 18:55
d5-EtFOSAA	20	17	88	50-150		04/13/2022 18:55
13C7_PFUdA	20	18	91	50-150		04/13/2022 18:55
13C2_PFDoA	20	17	88	50-150		04/13/2022 18:55
13C2_PFTeDA	20	15	76	50-150		04/13/2022 18:55
13C3_HFPO-DA	20	18	92	50-150		04/13/2022 18:55
d7-N-MeFOSE	20	15	77	20-150		04/13/2022 18:55
d9-N-EtFOSE	20	16	79	20-150		04/13/2022 18:55
d3-N-MeFOSA	20	9.7	49	20-150		04/13/2022 18:55
d5-N-EtFOSA	20	10	51	20-150		04/13/2022 18:55

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKI	Extraction Date	04/12/2022 11:17
Lab Sample ID	BLANK-98025	Total Amount Extracted	252mL
Lab File ID	Q220413A_023	Ical ID	220412B01
Matrix	Water	CCal File	Q220413A_016
Collected	04/11/2022 14:52	Ending CCal File	Q220413A_027
Received	04/11/2022 14:52	Blank File	Q220413A_023

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	6.17	6.17	50		04/13/2022 18:55
13C4_PFOA	N/A	N/A	7.40	7.43	74		04/13/2022 18:55
13C2_PFDA	N/A	N/A	8.68	8.67	37		04/13/2022 18:55
13C4_PFOS	N/A	N/A	9.21	9.19	54		04/13/2022 18:55

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.80	4.79	39		04/13/2022 18:55
13C5_PFPeA	N/A	N/A	5.55	5.54	70		04/13/2022 18:55
13C3_PFBS	N/A	N/A	6.49	6.45	20		04/13/2022 18:55
13C2_4:2FTS	N/A	N/A	5.91	5.89	11		04/13/2022 18:55
13C5_PFHxA	N/A	N/A	6.17	6.15	71		04/13/2022 18:55
13C4_PFHpA	N/A	N/A	6.78	6.80	61		04/13/2022 18:55
13C3_PFHxS	N/A	N/A	7.87	7.89	65		04/13/2022 18:55
13C2_6:2FTS	N/A	N/A	7.07	7.09	45		04/13/2022 18:55
13C8_PFOA	N/A	N/A	7.40	7.43	78		04/13/2022 18:55
13C9_PFNA	N/A	N/A	8.03	8.07	69		04/13/2022 18:55
13C8_PFOS	N/A	N/A	9.21	9.25	52		04/13/2022 18:55
13C2_8:2FTS	N/A	N/A	8.30	8.35	69		04/13/2022 18:55
13C6_PFDA	N/A	N/A	8.68	8.73	40		04/13/2022 18:55
d3-MeFOSAA	N/A	N/A	8.55	8.61	64		04/13/2022 18:55
13C8_PFOSA	N/A	N/A	11.43	11.40	47		04/13/2022 18:55
d5-EtFOSAA	N/A	N/A	8.86	8.92	35		04/13/2022 18:55
13C7_PFUdA	N/A	N/A	9.33	9.39	55		04/13/2022 18:55
13C2_PFDoA	N/A	N/A	10.00	10.07	54		04/13/2022 18:55
13C2_PFTeDA	N/A	N/A	11.33	11.39	62		04/13/2022 18:55
13C3_HFPO-DA	N/A	N/A	6.42	6.43	47		04/13/2022 18:55
d7-N-MeFOSE	N/A	N/A	13.10	13.06	25		04/13/2022 18:55
d9-N-EtFOSE	N/A	N/A	13.59	13.54	32		04/13/2022 18:55
d3-N-MeFOSA	N/A	N/A	13.31	13.26	29		04/13/2022 18:55
d5-N-EtFOSA	N/A	N/A	13.75	13.69	39		04/13/2022 18:55

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKKI	Extraction Date	04/12/2022 11:17
Lab Sample ID	BLANK-98025	Total Amount Extracted	252mL
Lab File ID	Q220413A_023	Ical ID	220412B01
Matrix	Water	CCal File	Q220413A_016
Collected	04/11/2022 14:52	Ending CCal File	Q220413A_027
Received	04/11/2022 14:52	Blank File	Q220413A_023

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.81	4.79	ND		04/13/2022 18:55
PFPeA	N/A	N/A	5.56	5.55	ND		04/13/2022 18:55
HFPO-DA	0.00	0.47	0.00	6.45	ND		04/13/2022 18:55
PFBS	0.49	0.35	6.50	6.48	ND		04/13/2022 18:55
PFHxA	0.00	0.08	0.00	6.18	ND		04/13/2022 18:55
4:2 FTS	0.00	0.99	0.00	5.91	ND		04/13/2022 18:55
PFPeS	0.00	0.43	0.00	7.21	ND		04/13/2022 18:55
PFHpA	0.00	0.46	0.00	6.81	ND		04/13/2022 18:55
DONA	0.00	0.55	0.00	7.04	ND		04/13/2022 18:55
PFHxS	0.00	0.35	0.00	7.90	ND		04/13/2022 18:55
PFOA	0.00	0.33	0.00	7.44	ND		04/13/2022 18:55
6:2 FTS	0.00	1.50	0.00	7.10	ND		04/13/2022 18:55
PFHpS	0.00	0.41	0.00	8.59	ND		04/13/2022 18:55
PFNA	0.00	0.26	0.00	8.08	ND		04/13/2022 18:55
PFOSAm	N/A	N/A	11.44	11.41	ND		04/13/2022 18:55
PFOS	0.18	0.24	9.22	9.26	ND		04/13/2022 18:55
MeFOSA	0.00	0.52	0.00	13.29	ND		04/13/2022 18:55
PFDA	0.00	0.19	0.00	8.74	ND		04/13/2022 18:55
EtFOSAm	0.00	0.42	0.00	13.72	ND		04/13/2022 18:55
8:2 FTS	0.00	1.40	0.00	8.35	ND		04/13/2022 18:55
9-Cl-PF3ON	0.00	0.04	0.00	9.75	ND		04/13/2022 18:55
PFNS	0.00	0.24	0.00	9.93	ND		04/13/2022 18:55
PFUnDA	0.00	0.18	0.00	9.40	ND		04/13/2022 18:55
NMeFOSAA	0.00	0.62	0.00	8.62	ND		04/13/2022 18:55
NEtFOSAA	0.00	0.43	0.00	8.87	ND		04/13/2022 18:55
PFDS	0.00	0.28	0.00	10.59	ND		04/13/2022 18:55
PFDOA	0.00	0.20	0.00	10.08	ND		04/13/2022 18:55
MeFOSE	N/A	N/A	0.00	13.09	ND		04/13/2022 18:55
EtFOSE	0.00	0.00	0.00	13.56	ND		04/13/2022 18:55
11-Cl-PF3OUdS	0.00	0.03	0.00	11.01	ND		04/13/2022 18:55
PFTrDA	0.00	0.19	0.00	10.71	ND		04/13/2022 18:55
PFDoS	0.00	0.23	0.00	11.75	ND		04/13/2022 18:55
PFTDA	0.00	0.18	0.00	11.34	ND		04/13/2022 18:55

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKIC	Extraction Date	04/13/2022 16:00
Lab Sample ID	BLANK-97940	Total Amount Extracted	5.06g
Lab File ID	Q220416A_007	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_005
Collected	04/07/2022 13:52	Ending CCal File	Q220416A_017
Received	04/07/2022 13:52	Blank File	

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	DL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.09	0.02	0.02	1	375-22-4		04/16/2022 06:25
PFPeA	ND	0.09	0.02	0.02	1	2706-90-3		04/16/2022 06:25
HFPO-DA	ND	0.09	0.02	0.02	1	13252-13-6		04/16/2022 06:25
PFBS	ND	0.08	0.02	0.02	1	375-73-5		04/16/2022 06:25
PFHxA	ND	0.09	0.03	0.03	1	307-24-4		04/16/2022 06:25
4:2 FTS	ND	0.09	0.03	0.03	1	757124-72-		04/16/2022 06:25
PFPeS	ND	0.09	0.01	0.01	1	2706-91-4		04/16/2022 06:25
PFHpA	ND	0.09	0.02	0.02	1	375-85-9		04/16/2022 06:25
DONA	ND	0.09	0.03	0.03	1	919005-14-		04/16/2022 06:25
PFHxS	ND	0.09	0.02	0.02	1	355-46-4		04/16/2022 06:25
PFOA	ND	0.09	0.02	0.02	1	335-67-1		04/16/2022 06:25
6:2 FTS	ND	0.09	0.03	0.03	1	27619-97-2		04/16/2022 06:25
PFHpS	ND	0.09	0.02	0.02	1	375-92-8		04/16/2022 06:25
PFNA	ND	0.09	0.02	0.02	1	375-95-1		04/16/2022 06:25
PFOSAm	ND	0.09	0.02	0.02	1	754-91-6		04/16/2022 06:25
PFOS	ND	0.09	0.02	0.02	1	1763-23-1		04/16/2022 06:25
MeFOSA	ND	0.09	0.02	0.02	1	31506-32-8		04/16/2022 06:25
PFDA	ND	0.09	0.02	0.02	1	335-76-2		04/16/2022 06:25
EtFOSAm	ND	0.09	0.02	0.02	1	4151-50-2		04/16/2022 06:25
8:2 FTS	ND	0.09	0.02	0.02	1	39108-34-4		04/16/2022 06:25
9-Cl-PF3ON	ND	0.09	0.01	0.01	1	756426-58-		04/16/2022 06:25
PFNS	ND	0.09	0.01	0.01	1	68259-12-1		04/16/2022 06:25
PFUnDA	ND	0.09	0.02	0.02	1	2058-94-8		04/16/2022 06:25
NMeFOSAA	ND	0.09	0.02	0.02	1	2355-31-9		04/16/2022 06:25
NEtFOSAA	ND	0.09	0.02	0.02	1	2991-50-6		04/16/2022 06:25
PFDS	ND	0.09	0.02	0.02	1	335-77-3		04/16/2022 06:25
PFDOA	ND	0.09	0.02	0.02	1	307-55-1		04/16/2022 06:25
MeFOSE	ND	0.09	0.02	0.02	1	24448-09-7		04/16/2022 06:25
EtFOSE	ND	0.09	0.02	0.02	1	1691-99-2		04/16/2022 06:25
11-Cl-PF3OUdS	ND	0.09	0.01	0.01	1	763051-92-		04/16/2022 06:25
PFTrDA	ND	0.09	0.02	0.02	1	72629-94-8		04/16/2022 06:25
PFDoS	ND	0.09	0.03	0.03	1	79780-39-5		04/16/2022 06:25
PFTDA	ND	0.09	0.03	0.03	1	376-06-7		04/16/2022 06:25

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKIC	Extraction Date	04/13/2022 16:00
Lab Sample ID	BLANK-97940	Total Amount Extracted	5.06g
Lab File ID	Q220416A_007	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_005
Collected	04/07/2022 13:52	Ending CCal File	Q220416A_017
Received	04/07/2022 13:52	Blank File	

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2_PFHxA	0.99	0.97	98	50-150		04/16/2022 06:25
13C4_PFOA	0.99	0.89	90	50-150		04/16/2022 06:25
13C2_PFDA	0.99	1.1	112	50-150		04/16/2022 06:25
13C4_PFOS	0.95	0.91	96	50-150		04/16/2022 06:25

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4_PFBA	0.99	0.88	89	50-150		04/16/2022 06:25
13C5_PFPeA	0.99	0.88	89	50-150		04/16/2022 06:25
13C3_PFBS	0.92	0.84	91	50-150		04/16/2022 06:25
13C2_4:2FTS	0.92	0.83	90	50-150		04/16/2022 06:25
13C5_PFHxA	0.99	0.90	91	50-150		04/16/2022 06:25
13C4_PFHpA	0.99	0.86	86	50-150		04/16/2022 06:25
13C3_PFHxS	0.94	0.80	85	50-150		04/16/2022 06:25
13C2_6:2FTS	0.94	0.79	84	50-150		04/16/2022 06:25
13C8_PFOA	0.99	0.94	95	50-150		04/16/2022 06:25
13C9_PFNA	0.99	0.88	89	50-150		04/16/2022 06:25
13C8_PFOS	0.95	0.91	96	50-150		04/16/2022 06:25
13C2_8:2FTS	0.95	0.75	79	50-150		04/16/2022 06:25
13C6_PFDA	0.99	0.85	86	50-150		04/16/2022 06:25
d3-MeFOSAA	0.99	0.94	95	50-150		04/16/2022 06:25
13C8_PFOSA	0.99	0.74	74	50-150		04/16/2022 06:25
d5-EtFOSAA	0.99	0.81	82	50-150		04/16/2022 06:25
13C7_PFUdA	0.99	0.88	89	50-150		04/16/2022 06:25
13C2_PFDoA	0.99	1.1	112	50-150		04/16/2022 06:25
13C2_PFTeDA	0.99	0.96	97	50-150		04/16/2022 06:25
13C3_HFPO-DA	0.99	0.86	87	50-150		04/16/2022 06:25
d7-N-MeFOSE	0.99	0.63	64	20-150		04/16/2022 06:25
d9-N-EtFOSE	0.99	0.56	57	20-150		04/16/2022 06:25
d3-N-MeFOSA	0.99	0.48	49	20-150		04/16/2022 06:25
d5-N-EtFOSA	0.99	0.46	47	20-150		04/16/2022 06:25

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKIC	Extraction Date	04/13/2022 16:00
Lab Sample ID	BLANK-97940	Total Amount Extracted	5.06g
Lab File ID	Q220416A_007	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_005
Collected	04/07/2022 13:52	Ending CCal File	Q220416A_017
Received	04/07/2022 13:52	Blank File	

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2_PFHxA	N/A	N/A	6.19	6.19	71		04/16/2022 06:25
13C4_PFOA	N/A	N/A	7.41	7.42	63		04/16/2022 06:25
13C2_PFDA	N/A	N/A	8.68	8.71	42		04/16/2022 06:25
13C4_PFOS	N/A	N/A	9.23	9.25	53		04/16/2022 06:25

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4_PFBA	N/A	N/A	4.83	4.82	35		04/16/2022 06:25
13C5_PFPeA	N/A	N/A	5.58	5.57	74		04/16/2022 06:25
13C3_PFBS	N/A	N/A	6.51	6.51	17		04/16/2022 06:25
13C2_4:2FTS	N/A	N/A	5.93	5.93	15		04/16/2022 06:25
13C5_PFHxA	N/A	N/A	6.19	6.19	51		04/16/2022 06:25
13C4_PFHpA	N/A	N/A	6.80	6.80	51		04/16/2022 06:25
13C3_PFHxS	N/A	N/A	7.89	7.90	58		04/16/2022 06:25
13C2_6:2FTS	N/A	N/A	7.08	7.09	54		04/16/2022 06:25
13C8_PFOA	N/A	N/A	7.41	7.43	55		04/16/2022 06:25
13C9_PFNA	N/A	N/A	8.03	8.07	78		04/16/2022 06:25
13C8_PFOS	N/A	N/A	9.23	9.25	55		04/16/2022 06:25
13C2_8:2FTS	N/A	N/A	8.30	8.35	55		04/16/2022 06:25
13C6_PFDA	N/A	N/A	8.68	8.70	52		04/16/2022 06:25
d3-MeFOSAA	N/A	N/A	8.55	8.61	50		04/16/2022 06:25
13C8_PFOSA	N/A	N/A	11.46	11.45	43		04/16/2022 06:25
d5-EtFOSAA	N/A	N/A	8.86	8.88	42		04/16/2022 06:25
13C7_PFUdA	N/A	N/A	9.35	9.36	74		04/16/2022 06:25
13C2_PFDoA	N/A	N/A	10.01	10.04	53		04/16/2022 06:25
13C2_PFTeDA	N/A	N/A	11.33	11.36	55		04/16/2022 06:25
13C3_HFPO-DA	N/A	N/A	6.44	6.44	53		04/16/2022 06:25
d7-N-MeFOSE	N/A	N/A	13.10	13.10	18		04/16/2022 06:25
d9-N-EtFOSE	N/A	N/A	13.61	13.59	27		04/16/2022 06:25
d3-N-MeFOSA	N/A	N/A	13.32	13.31	32		04/16/2022 06:25
d5-N-EtFOSA	N/A	N/A	13.77	13.75	47		04/16/2022 06:25

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Method Blank Analysis Summary

PFAS by Isotope Dilution

Client Sample ID	BLKIC	Extraction Date	04/13/2022 16:00
Lab Sample ID	BLANK-97940	Total Amount Extracted	5.06g
Lab File ID	Q220416A_007	Ical ID	220418A01
Matrix	Soil	CCal File	Q220416A_005
Collected	04/07/2022 13:52	Ending CCal File	Q220416A_017
Received	04/07/2022 13:52	Blank File	

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.82	ND		04/16/2022 06:25
PFPeA	N/A	N/A	0.00	5.57	ND		04/16/2022 06:25
HFPO-DA	0.00	0.59	0.00	6.46	ND		04/16/2022 06:25
PFBS	0.00	0.41	0.00	6.52	ND		04/16/2022 06:25
PFHxA	0.00	0.08	0.00	6.20	ND		04/16/2022 06:25
4:2 FTS	0.00	1.10	0.00	5.93	ND		04/16/2022 06:25
PFPeS	0.00	0.44	0.00	7.23	ND		04/16/2022 06:25
PFHpA	0.00	0.41	0.00	6.82	ND		04/16/2022 06:25
DONA	0.00	0.48	0.00	7.04	ND		04/16/2022 06:25
PFHxS	0.00	0.31	0.00	7.91	ND		04/16/2022 06:25
PFOA	0.00	0.33	0.00	7.44	ND		04/16/2022 06:25
6:2 FTS	0.00	1.40	0.00	7.10	ND		04/16/2022 06:25
PFHpS	0.00	0.42	0.00	8.59	ND		04/16/2022 06:25
PFNA	0.00	0.33	0.00	8.08	ND		04/16/2022 06:25
PFOSAm	N/A	N/A	11.47	11.46	ND		04/16/2022 06:25
PFOS	0.00	0.24	0.00	9.26	ND		04/16/2022 06:25
MeFOSA	0.00	0.46	0.00	13.33	ND		04/16/2022 06:25
PFDA	0.00	0.23	0.00	8.72	ND		04/16/2022 06:25
EtFOSAm	0.00	0.38	0.00	13.78	ND		04/16/2022 06:25
8:2 FTS	0.00	1.20	0.00	8.33	ND		04/16/2022 06:25
9-Cl-PF3ON	0.00	0.03	0.00	9.75	ND		04/16/2022 06:25
PFNS	0.00	0.24	0.00	9.93	ND		04/16/2022 06:25
PFUnDA	0.00	0.17	0.00	9.40	ND		04/16/2022 06:25
NMeFOSAA	0.00	0.69	0.00	8.62	ND		04/16/2022 06:25
NEtFOSAA	0.00	0.61	0.00	8.87	ND		04/16/2022 06:25
PFDS	0.00	0.27	0.00	10.59	ND		04/16/2022 06:25
PFDOA	0.00	0.18	0.00	10.08	ND		04/16/2022 06:25
MeFOSE	N/A	N/A	0.00	13.09	ND		04/16/2022 06:25
EtFOSE	0.00	0.00	0.00	13.56	ND		04/16/2022 06:25
11-Cl-PF3OUdS	0.00	0.03	0.00	11.01	ND		04/16/2022 06:25
PFTrDA	0.00	0.20	0.00	10.71	ND		04/16/2022 06:25
PFDoS	0.00	0.22	0.00	11.82	ND		04/16/2022 06:25
PFTDA	0.00	0.16	0.00	11.37	ND		04/16/2022 06:25

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-98026	Instrument ID	10LCMS01
Run File Name	Q220413A_024	Column ID	118AB10133
Analyzed	04/13/2022 19:13	Ical ID	220412B01
Injected By	NH	Level	L

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	19	20	102	50-150	
13C4_PFOA	19	18	93	50-150	
13C2_PFDA	19	20	102	50-150	
13C4_PFOS	18	21	113	50-150	

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	19	20	102	50-150	
13C5_PFPeA	19	19	98	50-150	
13C3_PFBS	18	18	101	50-150	
13C2_4:2FTS	18	17	95	50-150	
13C5_PFHxA	19	17	90	50-150	
13C4_PFHpA	19	18	95	50-150	
13C3_PFHxS	18	19	107	50-150	
13C2_6:2FTS	18	19	103	50-150	
13C8_PFOA	19	20	102	50-150	
13C9_PFNA	19	17	88	50-150	
13C8_PFOS	18	18	99	50-150	
13C2_8:2FTS	18	17	93	50-150	
13C6_PFDA	19	21	108	50-150	
d3-MeFOSAA	19	14	75	50-150	
13C8_PFOSA	19	16	85	50-150	
d5-EtFOSAA	19	13	70	50-150	
13C7_PFUdA	19	15	76	50-150	
13C2_PFDoA	19	17	88	50-150	
13C2_PFTeDA	19	14	71	50-150	
13C3_HFPO-DA	19	17	89	50-150	
d7-N-MeFOSE	19	16	84	20-150	
d9-N-EtFOSE	19	16	85	20-150	
d3-N-MeFOSA	19	13	68	20-150	
d5-N-EtFOSA	19	14	73	20-150	

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-98026	Instrument ID	10LCMS01
Run File Name	Q220413A_024	Column ID	118AB10133
Analyzed	04/13/2022 19:13	Ical ID	220412B01
Injected By	NH	Level	L

Native Analytes

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	3.8	4.4	114	50-150		375-22-4
PFPeA	3.8	4.3	112	50-150		2706-90-3
HFPO-DA	3.8	3.7	96	50-150		13252-13-6
PFBS	3.4	3.9	116	50-150		375-73-5
PFHxA	3.8	4.8	126	50-150		307-24-4
4:2 FTS	3.6	3.9	108	50-150		757124-72-4
PFPeS	3.6	3.9	107	50-150		2706-91-4
PFHpA	3.8	4.3	112	50-150		375-85-9
DONA	3.6	4.2	116	50-150		919005-14-4
PFHxS	3.5	4.0	114	50-150		355-46-4
PFOA	3.8	4.3	112	50-150		335-67-1
6:2 FTS	3.6	3.8	105	50-150		27619-97-2
PFHpS	3.6	4.5	124	50-150		375-92-8
PFNA	3.8	4.4	116	50-150		375-95-1
PFOSAm	3.8	4.5	119	50-150		754-91-6
PFOS	3.5	4.0	113	50-150		1763-23-1
MeFOSA	3.8	3.7	96	50-150		31506-32-8
PFDA	3.8	4.4	116	50-150		335-76-2
EtFOSAm	3.8	4.1	108	50-150		4151-50-2
8:2 FTS	3.7	4.0	109	50-150		39108-34-4
9-Cl-PF3ON	3.6	3.5	97	50-150		756426-58-1
PFNS	3.7	3.6	97	50-150		68259-12-1
PFUnDA	3.8	4.2	111	50-150		2058-94-8
NMeFOSAA	3.8	4.3	112	50-150		2355-31-9
NEtFOSAA	3.8	4.3	113	50-150		2991-50-6
PFDS	3.7	3.4	91	50-150		335-77-3
PFDOA	3.8	3.7	97	50-150		307-55-1
MeFOSE	3.8	3.9	102	50-150		24448-09-7
EtFOSE	3.8	3.9	100	50-150		1691-99-2
11-Cl-PF3OUdS	3.6	3.1	87	50-150		763051-92-9
PFTrDA	3.8	3.7	97	50-150		72629-94-8
PFDoS	3.7	3.5	95	50-150		79780-39-5
PFTDA	3.8	4.9	127	50-150		376-06-7

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-98026	Instrument ID	10LCMS01
Run File Name	Q220413A_024	Column ID	118AB10133
Analyzed	04/13/2022 19:13	Ical ID	220412B01
Injected By	NH	Level	L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C2_PFHxA	N/A	N/A	6.18	6.17	
13C4_PFOA	N/A	N/A	7.40	7.43	
13C2_PFDA	N/A	N/A	8.68	8.67	
13C4_PFOS	N/A	N/A	9.22	9.19	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C4_PFBA	N/A	N/A	4.81	4.79	
13C5_PFPeA	N/A	N/A	5.56	5.54	
13C3_PFBS	N/A	N/A	6.49	6.45	
13C2_4:2FTS	N/A	N/A	5.92	5.89	
13C5_PFHxA	N/A	N/A	6.18	6.15	
13C4_PFHpA	N/A	N/A	6.79	6.80	
13C3_PFHxS	N/A	N/A	7.88	7.89	
13C2_6:2FTS	N/A	N/A	7.07	7.09	
13C8_PFOA	N/A	N/A	7.40	7.43	
13C9_PFNA	N/A	N/A	8.03	8.07	
13C8_PFOS	N/A	N/A	9.22	9.25	
13C2_8:2FTS	N/A	N/A	8.30	8.35	
13C6_PFDA	N/A	N/A	8.68	8.73	
d3-MeFOSAA	N/A	N/A	8.55	8.61	
13C8_PFOSA	N/A	N/A	11.44	11.40	
d5-EtFOSAA	N/A	N/A	8.86	8.92	
13C7_PFUdA	N/A	N/A	9.34	9.39	
13C2_PFDoA	N/A	N/A	10.01	10.07	
13C2_PFTeDA	N/A	N/A	11.33	11.39	
13C3_HFPO-DA	N/A	N/A	6.43	6.43	
d7-N-MeFOSE	N/A	N/A	13.10	13.06	
d9-N-EtFOSE	N/A	N/A	13.59	13.54	
d3-N-MeFOSA	N/A	N/A	13.31	13.26	
d5-N-EtFOSA	N/A	N/A	13.75	13.69	

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-98026	Instrument ID	10LCMS01
Run File Name	Q220413A_024	Column ID	118AB10133
Analyzed	04/13/2022 19:13	Ical ID	220412B01
Injected By	NH	Level	L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
PFBA	N/A	N/A	4.82	4.79	
PFPeA	N/A	N/A	5.57	5.55	
HFPO-DA	0.45	0.47	6.44	6.45	
PFBS	0.34	0.35	6.50	6.48	
PFHxA	0.08	0.08	6.19	6.18	
4:2 FTS	1.00	0.99	5.92	5.91	
PFPeS	0.42	0.43	7.21	7.21	
PFHpA	0.44	0.46	6.80	6.81	
DONA	0.47	0.55	7.03	7.04	
PFHxS	0.28	0.35	7.89	7.90	
PFOA	0.29	0.33	7.41	7.44	
6:2 FTS	1.40	1.50	7.08	7.10	
PFHpS	0.34	0.41	8.57	8.59	
PFNA	0.33	0.26	8.04	8.08	
PFOSAm	N/A	N/A	11.45	11.41	
PFOS	0.24	0.24	9.23	9.26	
MeFOSA	0.52	0.52	13.33	13.29	
PFDA	0.13	0.19	8.69	8.74	
EtFOSAm	0.42	0.42	13.78	13.72	
8:2 FTS	1.40	1.40	8.31	8.35	
9-Cl-PF3ON	0.03	0.04	9.72	9.75	
PFNS	0.26	0.24	9.89	9.93	
PFUnDA	0.16	0.18	9.35	9.40	
NMeFOSAA	0.66	0.62	8.57	8.62	
NEtFOSAA	0.51	0.43	8.87	8.87	
PFDS	0.27	0.28	10.55	10.59	
PFDOA	0.23	0.20	10.01	10.08	
MeFOSE	N/A	N/A	13.14	13.09	
EtFOSE	0.00	0.00	13.63	13.56	
11-Cl-PF3OUdS	0.02	0.03	11.02	11.01	
PFTrDA	0.24	0.19	10.68	10.71	
PFDoS	0.24	0.23	11.78	11.75	
PFTDA	0.15	0.18	11.34	11.34	

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-97941	Instrument ID	10LCMS01
Run File Name	Q220418C_003	Column ID	118AB10133
Analyzed	04/18/2022 16:33	Ical ID	220418B01
Injected By	NH	Level	L

Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	0.99	0.97	97	50-150	
13C4_PFOA	0.99	0.94	94	50-150	
13C2_PFDA	0.99	0.84	84	50-150	
13C4_PFOS	0.95	0.99	104	50-150	

Extracted Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	0.99	0.86	86	50-150	
13C5_PFPeA	0.99	0.82	82	50-150	
13C3_PFBS	0.92	0.91	98	50-150	
13C2_4:2FTS	0.93	0.76	82	50-150	
13C5_PFHxA	0.99	0.87	88	50-150	
13C4_PFHpA	0.99	0.92	92	50-150	
13C3_PFHxS	0.94	0.81	86	50-150	
13C2_6:2FTS	0.94	0.77	82	50-150	
13C8_PFOA	0.99	0.76	77	50-150	
13C9_PFNA	0.99	0.83	84	50-150	
13C8_PFOS	0.95	0.80	84	50-150	
13C2_8:2FTS	0.95	0.81	85	50-150	
13C6_PFDA	0.99	0.83	83	50-150	
d3-MeFOSAA	0.99	0.95	96	50-150	
13C8_PFOSA	0.99	0.45	**46**	50-150	R
d5-EtFOSAA	0.99	0.90	90	50-150	
13C7_PFUdA	0.99	0.86	87	50-150	
13C2_PFDoA	0.99	0.90	91	50-150	
13C2_PFTeDA	0.99	0.69	69	50-150	
13C3_HFPO-DA	0.99	0.81	81	50-150	
d7-N-MeFOSE	0.99	0.28	28	20-150	
d9-N-EtFOSE	0.99	0.29	29	20-150	
d3-N-MeFOSA	0.99	0.13	**13**	20-150	R
d5-N-EtFOSA	0.99	0.13	**13**	20-150	R

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-97941	Instrument ID	10LCMS01
Run File Name	Q220418C_003	Column ID	118AB10133
Analyzed	04/18/2022 16:33	Ical ID	220418B01
Injected By	NH	Level	L

Native Analytes

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.20	0.22	108	50-150		375-22-4
PFPeA	0.20	0.22	112	50-150		2706-90-3
HFPO-DA	0.20	0.20	98	50-150		13252-13-6
PFBS	0.18	0.19	108	50-150		375-73-5
PFHxA	0.20	0.24	121	50-150		307-24-4
4:2 FTS	0.19	0.21	112	50-150		757124-72-4
PFPeS	0.19	0.21	110	50-150		2706-91-4
PFHpA	0.20	0.22	108	50-150		375-85-9
DONA	0.19	0.22	115	50-150		919005-14-4
PFHxS	0.18	0.19	104	50-150		355-46-4
PFOA	0.20	0.24	119	50-150		335-67-1
6:2 FTS	0.19	0.21	111	50-150		27619-97-2
PFHpS	0.19	0.24	128	50-150		375-92-8
PFNA	0.20	0.20	103	50-150		375-95-1
PFOSAm	0.20	0.22	111	50-150		754-91-6
PFOS	0.18	0.20	108	50-150		1763-23-1
MeFOSA	0.20	0.18	92	50-150		31506-32-8
PFDA	0.20	0.24	120	50-150		335-76-2
EtFOSAm	0.20	0.19	97	50-150		4151-50-2
8:2 FTS	0.19	0.22	113	50-150		39108-34-4
9-Cl-PF3ON	0.19	0.20	105	50-150		756426-58-1
PFNS	0.19	0.20	106	50-150		68259-12-1
PFUnDA	0.20	0.18	92	50-150		2058-94-8
NMeFOSAA	0.20	0.17	85	50-150		2355-31-9
NEtFOSAA	0.20	0.20	101	50-150		2991-50-6
PFDS	0.19	0.20	106	50-150		335-77-3
PFDOA	0.20	0.22	112	50-150		307-55-1
MeFOSE	0.20	0.22	111	50-150		24448-09-7
EtFOSE	0.20	0.22	112	50-150		1691-99-2
11-Cl-PF3OUdS	0.19	0.19	101	50-150		763051-92-9
PFTrDA	0.20	0.23	116	50-150		72629-94-8
PFDoS	0.19	0.19	101	50-150		79780-39-5
PFTDA	0.20	0.23	114	50-150		376-06-7

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-97941	Instrument ID	10LCMS01
Run File Name	Q220418C_003	Column ID	118AB10133
Analyzed	04/18/2022 16:33	Ical ID	220418B01
Injected By	NH	Level	L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C2_PFHxA	N/A	N/A	6.19	6.19	
13C4_PFOA	N/A	N/A	7.42	7.42	
13C2_PFDA	N/A	N/A	8.70	8.71	
13C4_PFOS	N/A	N/A	9.24	9.25	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C4_PFBA	N/A	N/A	4.82	4.82	
13C5_PFPeA	N/A	N/A	5.58	5.57	
13C3_PFBS	N/A	N/A	6.51	6.51	
13C2_4:2FTS	N/A	N/A	5.93	5.93	
13C5_PFHxA	N/A	N/A	6.19	6.19	
13C4_PFHpA	N/A	N/A	6.81	6.80	
13C3_PFHxS	N/A	N/A	7.90	7.90	
13C2_6:2FTS	N/A	N/A	7.09	7.09	
13C8_PFOA	N/A	N/A	7.42	7.43	
13C9_PFNA	N/A	N/A	8.05	8.07	
13C8_PFOS	N/A	N/A	9.24	9.25	
13C2_8:2FTS	N/A	N/A	8.32	8.35	
13C6_PFDA	N/A	N/A	8.70	8.70	
d3-MeFOSAA	N/A	N/A	8.57	8.61	
13C8_PFOSA	N/A	N/A	11.45	11.45	R
d5-EtFOSAA	N/A	N/A	8.88	8.88	
13C7_PFUdA	N/A	N/A	9.36	9.36	
13C2_PFDoA	N/A	N/A	10.04	10.04	
13C2_PFTeDA	N/A	N/A	11.36	11.36	
13C3_HFPO-DA	N/A	N/A	6.45	6.44	
d7-N-MeFOSE	N/A	N/A	13.10	13.10	
d9-N-EtFOSE	N/A	N/A	13.60	13.59	
d3-N-MeFOSA	N/A	N/A	13.31	13.31	R
d5-N-EtFOSA	N/A	N/A	13.76	13.75	R

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LCS Analysis Summary

PFAS by Isotope Dilution

Lab Sample ID	LCS-97941	Instrument ID	10LCMS01
Run File Name	Q220418C_003	Column ID	118AB10133
Analyzed	04/18/2022 16:33	Ical ID	220418B01
Injected By	NH	Level	L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
PFBA	N/A	N/A	4.83	4.82	
PFPeA	N/A	N/A	5.58	5.57	
HFPO-DA	0.55	0.57	6.47	6.46	
PFBS	0.29	0.35	6.52	6.52	
PFHxA	0.09	0.08	6.20	6.20	
4:2 FTS	1.00	0.95	5.94	5.93	
PFPeS	0.44	0.47	7.22	7.23	
PFHpA	0.45	0.41	6.81	6.82	
DONA	0.53	0.54	7.04	7.04	
PFHxS	0.34	0.37	7.91	7.91	
PFOA	0.32	0.34	7.43	7.44	
6:2 FTS	1.20	1.10	7.09	7.10	
PFHpS	0.32	0.42	8.58	8.59	
PFNA	0.28	0.27	8.06	8.08	
PFOSAm	N/A	N/A	11.46	11.46	
PFOS	0.22	0.25	9.25	9.26	
MeFOSA	0.53	0.49	13.34	13.33	
PFDA	0.20	0.19	8.72	8.72	
EtFOSAm	0.48	0.41	13.79	13.78	
8:2 FTS	1.30	1.10	8.33	8.33	
9-Cl-PF3ON	0.03	0.03	9.74	9.75	
PFNS	0.23	0.21	9.92	9.93	
PFUnDA	0.17	0.20	9.37	9.40	
NMeFOSAA	0.71	0.82	8.59	8.62	
NEtFOSAA	0.43	0.40	8.89	8.87	
PFDS	0.25	0.25	10.58	10.59	
PFDOA	0.19	0.16	10.04	10.08	
MeFOSE	N/A	N/A	13.15	13.09	
EtFOSE	0.00	0.00	13.64	13.56	
11-Cl-PF3OUdS	0.03	0.02	11.05	11.01	
PFTrDA	0.22	0.19	10.71	10.71	
PFDoS	0.23	0.24	11.81	11.82	
PFTDA	0.18	0.21	11.37	11.37	

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