

Memorandum

To: Lauren Sinatra; Town of Nantucket

Mark Willett; Wannacomet Water Company

From: Seth Sakamoto; SunPower Corporation, Systems

Subject: Wannacomet Water Company Solar - SunPower Corp. Solar Module Sampling and Testing

Date: August 24, 2021

SunPower recognizes the importance of the Wannacomet Water Company Solar Project and how the project may impact the environment. Wannacomet Water has requested testing associated with potential water contaminants (referred to as “Hazardous Waste Characteristic” for waste disposal purposes and “Priority Pollutants” for Drinking water purposes).

SunPower products are routinely, tested and certified to be compliant to a number of US and Global Electrical and Environmental standards. The Majority of Environmental Standards are based in a need for clean, safe Drinking Water, regardless of the source (whether it be pumped well, stormwater, etc.). The US Safe Drinking Water Act is a classic example of a rule which has spawned a number of supporting rules such as Hazardous Waste & Toxic Materials regulations, Stormwater discharge regulations, Wastewater Discharge regulations, Groundwater monitoring regulations, etc. The Drinking Water Standards are evolutionary, thus recent changes may not have been included in previous testing.

SunPower, in partnership with a national Photovoltaic (PV) Recycler (We Recycle Solar), has opted to mill a Photovoltaic module which is indicative (or representative) of that proposed for the project installation and lifetime use.

- By opting to mill a PV module, in its completed installation ready state, SunPower avoids any curing or polymerization issues, often associated with Sample Compositing. I.e. the representative module has been completely thermal cycled, tested, framed, wired, labelled, and cleaned.
- By milling a complete installation ready module, standard EPA method sampling (randomizing/mixing), compositing, sample preparations and testing methods can easily be utilized (i.e. the testing lab should not need any other special preparations to accommodate a sample).
- By milling a complete PV module into a finely divisible material, per EPA Method, that finely divided material presents more surface area available for sample preparation (soluble, leachable, or chemically digestible (TCLP or STLP testing preparation and analytical methods)). Milling also represent the most severe conditions a module could experience in nature (approaching what is analytically experienced when tested by the California TTLC testing method).

The composited milled material was submitted for Testing a laboratory ([Alpha Analytical Labs](#)) specified by [Wannacomet Water Company](#). The analytical report is attached for review and documentation.

Based on the analytical data of the representative SunPower photovoltaic module, provided by Alpha Analytical Labs, there appears to be no regulated elements or compounds of concern which exceed applicable regulatory levels in the State of Massachusetts.

Summary of Results

	Analyte	Alpha Analytical Results	310 CMR 30.15 Regulatory Limits	Units of Measure
Method 1311	Aluminum (Al)	2.46	n/r	mg/kg
Method 1311	Antimony (Sb)	n/d	n/r (0.006)	mg/kg
Method 1311	Arsenic (As)	n/d	5 (0.010)	mg/kg
Method 1311	Barium (Ba)	n/d	100 (2)	mg/kg
Method 1311	Beryllium (Be)	n/d	n/r (0.004)	mg/kg
Method 1311	Cadmium (Cd)	n/d	1 (0.005)	mg/kg
Method 1311	Calcium (Ca)	n/d	n/r	mg/kg
Method 1311	Chromium (Cr)	n/d	5	mg/kg
Method 1311	Cobalt (Co)	n/d	5	mg/kg
Method 1311	Copper (Cu)	0.410	n/r (1.3)	mg/kg
Method 1311	Iron (Fe)	0.608	n/r	mg/kg
Method 1311	Lead (Pb)	n/d	5 (0.015)	mg/kg
Method 1311	Magnesium (Mg)	n/d	n/r	mg/kg
Method 1311	Manganese (Mn)	n/d	n/r	mg/kg
Method 1311	Nickel (Ni)	0.02010	n/r	mg/kg
Method 1311	Potassium (K)	n/d	n/r	mg/kg
Method 1311	Selenium (Se)	n/d	1 (0.05)	mg/kg
Method 1311	Silver (Ag)	n/d	5	mg/kg
Method 1311	Thallium (Th)	n/d	n/r (0.002)	mg/kg
Method 1311	Vanadium (V)	n/d	n/r	mg/kg
Method 1311	Zinc (Zn)	0.5117	n/r	mg/kg
Method 1311	Mercury (Hg)	n/d	0.2 (0.002)	mg/kg
Method 1312 - PFAs	PFHxS	n/d		mg/l
Method 1312 - PFAs	PFDA	n/d		mg/l
Method 1312 - PFAs	PFHpA	n/d		mg/l
Method 1312 - PFAs	PFNA	n/d		mg/l
Method 1312 - PFAs	PFOA	n/d		mg/l
Method 1312 - PFAs	PFOS	n/d		mg/l
Method 1312 - PFAs	HFPO-DA	n/d		mg/l
Method 1312 - PFAs	Total PFAS	n/d	0.000020	mg/l



ANALYTICAL REPORT

Lab Number:	L2132838
Client:	SunPower Corporation Systems 1414 Harbour Way South Ste. 1901 Richmond, CA 94804
ATTN:	Seth Sakamoto
Phone:	(510) 549-6961
Project Name:	WANNACOMET WATER COMPANY SOLAR
Project Number:	Not Specified
Report Date:	07/26/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2132838-01	SPR-E20-435-COM	SOLID	1 MILESTONE RD., NANTUCKET, MA	06/14/21 12:05	06/17/21
L2132838-02	SPR-E20-435-COM- LEACHATE	LIQUID	1 MILESTONE RD., NANTUCKET, MA	06/14/21 12:05	06/17/21

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Case Narrative (continued)

Report Submission

July 26, 2021: This final report includes the results of all requested analyses.

July 15, 2021: This is a preliminary report.

Sample Receipt

The analyses performed were specified by the client.

The samples were received at the laboratory above the required temperature range and were not on ice.

TCLP Perfluorinated Alkyl Acids by Isotope Dilution

WG1518614-5: This blank represents the TCLP tumbling blank associated with L2132838-01.

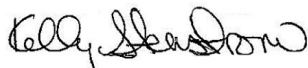
Total Metals

L2132838-02: The sample has elevated detection limits for all elements due to the prep dilution required by the limited sample volume available for analysis.

The WG1518517-4 Laboratory Duplicate RPD for iron (22%), performed on L2132838-02, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 07/26/21

ORGANICS

SEMIVOLATILES

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

SAMPLE RESULTS

Lab ID: L2132838-01
 Client ID: SPR-E20-435-COM
 Sample Location: 1 MILESTONE RD., NANTUCKET, MA

Date Collected: 06/14/21 12:05
 Date Received: 06/17/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Solid
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 07/03/21 13:33
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 06/30/21 03:41

TCLP/SPLP Ext. Date: 06/25/21 15:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab						
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.73	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.73	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.73	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.73	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.73	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.73	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	43.3	--	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		62-124
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	110		10-165

Project Name: WANNACOMET WATER COMPANY SOLA
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/03/21 12:43
Analyst: SG
TCLP/SPLP Extraction Date: 06/25/21 15:55

Extraction Method: ALPHA 23528
Extraction Date: 06/30/21 03:41

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG1518614-1					
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	50.0	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		62-124
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	104		10-165

Project Name: WANNACOMET WATER COMPANY SOLA
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 07/03/21 13:00
Analyst: SG
TCLP/SPLP Extraction Date: 06/25/21 15:55

Extraction Method: ALPHA 23528
Extraction Date: 06/30/21 03:41

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG1518614-5					
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	45.0	--

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	78		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		62-124
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	94		10-165

Lab Control Sample Analysis

Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR

Lab Number: L2132838

Project Number: Not Specified

Report Date: 07/26/21

Parameter	LCS	Qual	LCS	Qual	%Recovery	RPD	Qual	RPD
	%Recovery		%Recovery		Limits			Limits
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG1518614-2								
Perfluoroheptanoic Acid (PFHpA)	96		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	94		-		63-159	-		30
Perfluorononanoic Acid (PFNA)	94		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	109		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	95		-		63-171	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	64		-		57-162	-		30

Surrogate (Extracted Internal Standard)	LCS	Qual	LCS	Qual	Acceptance Criteria
	%Recovery		%Recovery		
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89				62-124
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	105				10-165

Matrix Spike Analysis Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1518614-3 QC Sample: L2132838-01 Client ID: SPR-E20-435-COM												
Perfluoroheptanoic Acid (PFHpA)	ND	34.5	34.1	99		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	31.6	32.9	104		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	ND	34.5	33.6	96		-	-		63-159	-		30
Perfluorononanoic Acid (PFNA)	ND	34.5	33.1	96		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	32	36.8	112		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	34.5	34.5	100		-	-		63-171	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	691	344	100		-	-		57-162	-		30

Surrogate (Extracted Internal Standard)	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	107				10-165
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88				62-124
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95				71-134
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90				59-139

Lab Duplicate Analysis
Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1518614-4 QC Sample: L2132838-01 Client ID: SPR-E20-435-COM						
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		88		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		93		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94		92		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		87		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		90		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87		83		62-124
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	110		88		10-165



METALS

Project Name: WANNACOMET WATER COMPANY SOLAR**Lab Number:** L2132838**Project Number:** Not Specified**Report Date:** 07/26/21**SAMPLE RESULTS**

Lab ID: L2132838-02

Date Collected: 06/14/21 12:05

Client ID: SPR-E20-435-COM-LEACHATE

Date Received: 06/17/21

Sample Location: 1 MILESTONE RD., NANTUCKET, MA

Field Prep: Not Specified

Sample Depth:

Matrix: Liquid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2.46		mg/l	0.500	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Antimony, Total	ND		mg/l	0.02000	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Arsenic, Total	ND		mg/l	0.00250	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Barium, Total	ND		mg/l	0.050	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Beryllium, Total	ND		mg/l	0.00250	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Cadmium, Total	ND		mg/l	0.00100	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Chromium, Total	ND		mg/l	0.00500	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Copper, Total	0.410		mg/l	0.050	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Iron, Total	0.608		mg/l	0.250	--	1	07/01/21 14:41	07/23/21 20:46	EPA 3005A	19,200.7	GD
Lead, Total	ND		mg/l	0.00500	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Manganese, Total	ND		mg/l	0.050	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Mercury, Total	ND		mg/l	0.00100	--	1	07/06/21 12:57	07/06/21 16:14	EPA 7470A	1,7470A	OU
Nickel, Total	0.02010		mg/l	0.01000	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Selenium, Total	ND		mg/l	0.0250	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Silver, Total	ND		mg/l	0.035	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Sodium, Total	ND		mg/l	10.0	--	1	07/01/21 14:41	07/23/21 21:56	EPA 3005A	1,6010D	GD
Thallium, Total	ND		mg/l	0.00500	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD
Zinc, Total	0.5117		mg/l	0.05000	--	1	07/01/21 14:41	07/24/21 15:55	EPA 3005A	1,6020B	CD



Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1518514-1									
Antimony, Total	ND	mg/l	0.00400	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Arsenic, Total	ND	mg/l	0.00050	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Beryllium, Total	ND	mg/l	0.00050	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Cadmium, Total	ND	mg/l	0.00020	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Chromium, Total	ND	mg/l	0.00100	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Lead, Total	ND	mg/l	0.00100	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Nickel, Total	ND	mg/l	0.00200	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Selenium, Total	ND	mg/l	0.00500	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Thallium, Total	ND	mg/l	0.00100	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD
Zinc, Total	ND	mg/l	0.01000	--	1	07/01/21 14:41	07/24/21 14:16	1,6020B	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1518515-1									
Aluminum, Total	ND	mg/l	0.100	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD
Barium, Total	ND	mg/l	0.010	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD
Copper, Total	ND	mg/l	0.010	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD
Manganese, Total	ND	mg/l	0.010	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD
Silver, Total	ND	mg/l	0.007	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD
Sodium, Total	ND	mg/l	2.00	--	1	07/01/21 14:41	07/23/21 21:36	1,6010D	GD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1518517-1									
Iron, Total	ND	mg/l	0.050	--	1	07/01/21 14:41	07/23/21 20:24	19,200.7	GD



Project Name: WANNACOMET WATER COMPANY SOLAR**Lab Number:** L2132838**Project Number:** Not Specified**Report Date:** 07/26/21

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1520699-1									
Mercury, Total	ND	mg/l	0.00020	--	1	07/06/21 12:57	07/06/21 16:01	1,7470A	OU

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis**Batch Quality Control****Project Name:** WANNACOMET WATER COMPANY SOLAR**Lab Number:** L2132838**Project Number:** Not Specified**Report Date:** 07/26/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1518514-2								
Antimony, Total	90		-		80-120	-		
Arsenic, Total	100		-		80-120	-		
Beryllium, Total	101		-		80-120	-		
Cadmium, Total	108		-		80-120	-		
Chromium, Total	93		-		80-120	-		
Lead, Total	101		-		80-120	-		
Nickel, Total	91		-		80-120	-		
Selenium, Total	103		-		80-120	-		
Thallium, Total	104		-		80-120	-		
Zinc, Total	103		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1518515-2								
Aluminum, Total	98		-		80-120	-		
Barium, Total	100		-		80-120	-		
Copper, Total	102		-		80-120	-		
Manganese, Total	95		-		80-120	-		
Silver, Total	101		-		80-120	-		
Sodium, Total	105		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1518517-2								
Iron, Total	100		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR**Lab Number:** L2132838**Project Number:** Not Specified**Report Date:** 07/26/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1520699-2					
Mercury, Total	103	-	80-120	-	

Matrix Spike Analysis Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518514-3 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE												
Antimony, Total	ND	2.5	2.184	87	-	-	-	-	75-125	-	-	20
Arsenic, Total	ND	0.6	0.5945	99	-	-	-	-	75-125	-	-	20
Beryllium, Total	ND	0.25	0.2396	96	-	-	-	-	75-125	-	-	20
Cadmium, Total	ND	0.265	0.2907	110	-	-	-	-	75-125	-	-	20
Chromium, Total	ND	1	0.9194	92	-	-	-	-	75-125	-	-	20
Lead, Total	ND	2.65	2.560	97	-	-	-	-	75-125	-	-	20
Nickel, Total	0.02010	2.5	2.324	92	-	-	-	-	75-125	-	-	20
Selenium, Total	ND	0.6	0.624	104	-	-	-	-	75-125	-	-	20
Thallium, Total	ND	0.6	0.6070	101	-	-	-	-	75-125	-	-	20
Zinc, Total	0.5117	2.5	3.176	106	-	-	-	-	75-125	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518515-3 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE												
Aluminum, Total	2.46	10	12.4	99	-	-	-	-	75-125	-	-	20
Barium, Total	ND	10	10.1	101	-	-	-	-	75-125	-	-	20
Copper, Total	0.410	1.25	1.68	102	-	-	-	-	75-125	-	-	20
Manganese, Total	ND	2.5	2.39	96	-	-	-	-	75-125	-	-	20
Silver, Total	ND	0.25	0.257	103	-	-	-	-	75-125	-	-	20
Sodium, Total	ND	50	57.4	115	-	-	-	-	75-125	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518517-3 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE												
Iron, Total	0.608	5	5.48	97	-	-	-	-	75-125	-	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1520699-3 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE									
Mercury, Total	ND	0.025	0.02690	108	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: WANNACOMET WATER COMPANY SOLAR

Project Number: Not Specified

Lab Number: L2132838

Report Date: 07/26/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518514-4 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Beryllium, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.02010	0.01886	mg/l	6		20
Selenium, Total	ND	ND	mg/l	NC		20
Thallium, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.5117	0.5294	mg/l	3		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518515-4 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE						
Aluminum, Total	2.46	2.49	mg/l	1		20
Barium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.410	0.423	mg/l	3		20
Manganese, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Sodium, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis *Batch Quality Control*

Project Name: WANNACOMET WATER COMPANY SOLAR

Project Number: Not Specified

Lab Number: L2132838

Report Date: 07/26/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1518517-4 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE					
Iron, Total	0.608	0.486	mg/l	22	Q 20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1520699-4 QC Sample: L2132838-02 Client ID: SPR-E20-435-COM-LEACHATE					
Mercury, Total	ND	ND	mg/l	NC	20

Project Name: WANNACOMET WATER COMPANY SOLAR**Lab Number:** L2132838**Project Number:** Not Specified**Report Date:** 07/26/21**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2132838-01A	Plastic 8oz unpreserved	A	NA		21.3	Y	Present/Intact		-
L2132838-01B	Glass 250ml/8oz unpreserved	A	NA		21.3	Y	Present/Intact		-
L2132838-01X7	Plastic 250ml unpreserved Extracts	NA	NA			Y	Absent		A2-TCLP-537-ISOTOPE(14)
L2132838-01X8	Tumble Vessel	NA	NA			Y	Absent		-
L2132838-01X9	Tumble Vessel	NA	NA			Y	Absent		-
L2132838-01Z	Plastic 250ml unpreserved Extracts	NA	NA			Y	Absent		A2-TCLP-537-ISOTOPE(14)
L2132838-01Z1	Plastic 250ml unpreserved Extracts	NA	NA			Y	Absent		A2-TCLP-537-ISOTOPE(14)
L2132838-01Z2	Plastic 250ml unpreserved Extracts	NA	NA			Y	Absent		A2-TCLP-537-ISOTOPE(14)
L2132838-01Z3	Plastic 250ml unpreserved Extracts	NA	NA			Y	Absent		A2-TCLP-537-ISOTOPE(14)
L2132838-02X	Plastic 500ml HNO3 preserved Extracts	NA	NA			Y	Absent		SE-6020T(180),TL-6020T(180),BA-TI(180),CR-6020T(180),NI-6020T(180),ZN-6020T(180),AG-TI(180),AL-TI(180),FE-UI(180),PB-6020T(180),BE-6020T(180),CU-TI(180),AS-6020T(180),SB-6020T(180),CD-6020T(180),HG-T(28),MN-TI(180),NA-TI(180)

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report



Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

Data Qualifiers

the identification is based on a mass spectral library search.

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

Project Name: WANNACOMET WATER COMPANY SOLAR
Project Number: Not Specified

Lab Number: L2132838
Report Date: 07/26/21

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



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UNITED STATES US

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