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Certificate of Analysis PEI0228

Client Details

Client	Harvey Water
Contact	Aled Lewis
Address	PO Box 468, HARVEY, WA, 6220

Sample Details

Your Reference	Water Analysis
Number of Samples	2 Water
Date Samples Received	05/09/2023
Date Samples Registered	05/09/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	11/09/2023
Date of Issue	20/09/2023

Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with *.

Authorisation Details

Results Approved By	Andrew Townsend, Microbiological Analyst Heram Halim, Operations Manager Michael Hall, Inorganics & Metals Supervisor Travis Carey, Organics Supervisor
Laboratory Manager	Michael Kubiak

Certificate of Analysis PEI0228

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
PEI0228-01	Harvey DAM	Water	04/09/2023	05/09/2023
PEI0228-02	SBR DECANT	Water	04/09/2023	05/09/2023

Organochlorine Pesticides - Low Level (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
alpha-BHC	µg/L	0.050	<0.050	<0.050
Hexachlorobenzene	µg/L	0.010	<0.010	<0.010
beta-BHC	µg/L	0.050	<0.050	<0.050
gamma-BHC	µg/L	0.050	<0.050	<0.050
delta-BHC	µg/L	0.050	<0.050	<0.050
Heptachlor	µg/L	0.010	<0.010	<0.010
Aldrin	µg/L	0.010	<0.010	<0.010
Heptachlor epoxide	µg/L	0.010	<0.010	<0.010
trans-Chlordane	µg/L	0.010	<0.010	<0.010
cis-Chlordane	µg/L	0.010	<0.010	<0.010
Endosulfan I	µg/L	0.020	<0.020	<0.020
4,4'-DDE	µg/L	0.010	<0.010	<0.010
Dieldrin	µg/L	0.010	<0.010	<0.010
Endrin	µg/L	0.010	<0.010	<0.010
4,4'-DDD	µg/L	0.010	<0.010	<0.010
Endosulfan II	µg/L	0.020	<0.020	<0.020
4,4'-DDT	µg/L	0.0060	<0.0060	<0.0060
Endosulfan sulfate	µg/L	0.020	<0.020	<0.020
Endrin ketone	µg/L	0.050	<0.050	<0.050
Methoxychlor	µg/L	0.020	<0.020	<0.020
Mirex	µg/L	0.020	<0.020	<0.020
Total +ve OCP	µg/L	0.0060	<0.0060	<0.0060
Surrogate 2-Chlorophenol-D4	%		100	99.6

Organophosphorus Pesticides - Low Level (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Dichlorvos	µg/L	0.050	<0.050	<0.050
Dimethoate	µg/L	0.10	<0.10	<0.10
Diazinon	µg/L	0.010	<0.010	<0.010
Chlorpyrifos-methyl	µg/L	0.050	<0.050	<0.050
Parathion-methyl	µg/L	0.050	<0.050	<0.050
Ronnel	µg/L	0.050	<0.050	<0.050
Fenitrothion	µg/L	0.050	<0.050	<0.050
Malathion	µg/L	0.050	<0.050	<0.050
Chlorpyrifos	µg/L	0.0090	<0.0090	<0.0090
Parathion	µg/L	0.0040	<0.0040	<0.0040
Bromophos-ethyl	µg/L	0.050	<0.050	<0.050
Ethion	µg/L	0.050	<0.050	<0.050
Coumaphos	µg/L	0.050	<0.050	<0.050
Disulfoton	µg/L	0.050	<0.050	<0.050
Fenamiphos	µg/L	0.050	<0.050	<0.050
Fenthion	µg/L	0.050	<0.050	<0.050
Methidathion	µg/L	0.050	<0.050	<0.050
Mevinphos	µg/L	0.050	<0.050	<0.050
Phorate	µg/L	0.050	<0.050	<0.050
Phosalone	µg/L	0.050	<0.050	<0.050
Azinphos-methyl	µg/L	0.020	<0.020	<0.020
Surrogate 2-Chlorophenol-D4	%		68.7	99.5

Phthalates (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Dimethyl phthalate	µg/L	10	<10	<10
Diethyl phthalate	µg/L	10	<10	<10
Di-n-butyl phthalate	µg/L	50	<50	<50
Butyl benzyl phthalate	µg/L	10	<10	<10
Di-n-octyl phthalate	µg/L	10	<10	<10
Di(2-ethylhexyl) adipate (DEHA)	µg/L	50	<50	<50
Bis(2-ethylhexyl) phthalate (DEHP)	µg/L	50	<50	<50
Surrogate p-Terphenyl-D14	%		## [2]	76.0

SCSG Banned Pesticides (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Hexachlorobenzene	mg/L	0.00050	0.0010	<0.00050	<0.00050
gamma-BHC	mg/L	0.000050	0.010	<0.000050	<0.000050
Chlordane	mg/L	0.000010	0.0020	<0.000010	<0.000010
Aldrin+Dieldrin	mg/L	0.000020	0.00030	<0.000020	<0.000020
DDT	mg/L	0.000060	0.0090	<0.000060	<0.000060

SCSG Organic Compounds: Industrial Hydrocarbons (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
EDTA	mg/L	0.10	0.25	<0.10	<0.10
NTA	mg/L	0.020	0.20	<0.020	<0.020
Vinyl chloride	mg/L	0.00010	0.00030	<0.00010	<0.00010
Epichlorohydrin*	mg/L	0.00025	0.00050	<0.00025	<0.00025
1,1-Dichloroethene	mg/L	0.0010	0.030	<0.0010	<0.0010
Methylene chloride	mg/L	0.0040	0.0040	<0.0040	<0.0040
1,2-dichloroethene	mg/L	0.0020	0.060	<0.0020	<0.0020
1,1-Dichloroethane	mg/L	0.00050	0.0050	<0.00050	<0.00050
Benzene	mg/L	0.00020	0.0010	<0.00020	<0.00020
1,2-Dichloroethane	mg/L	0.00050	0.0030	<0.00050	<0.00050
Trichloroethene	mg/L	0.0010	0.0050	<0.0010	<0.0010
Toluene	mg/L	0.0010	0.80	<0.0010	<0.0010
Tetrachloroethene	mg/L	0.0010	0.050	<0.0010	<0.0010
Chlorobenzene	mg/L	0.0010	0.30	<0.0010	<0.0010
Ethylbenzene	mg/L	0.0010	0.30	<0.0010	<0.0010
Total Xylene	mg/L	0.0030	0.60	<0.0030	<0.0030
Styrene	mg/L	0.0010	0.030	<0.0010	<0.0010
1,3-Dichlorobenzene	mg/L	0.0010		<0.0010	<0.0010
1,4-Dichlorobenzene	mg/L	0.00020	0.040	<0.00020	<0.00020
1,2-Dichlorobenzene	mg/L	0.00050	1.5	<0.00050	<0.00050
Hexachlorobutadiene	mg/L	0.00030	0.00070	<0.00030	<0.00030
Trichlorobenzenes (Total)	mg/L	0.0010	0.030	<0.0010	<0.0010
Benzo(a)pyrene	mg/L	0.000005	0.000010	<0.000005	<0.000005

SCSG Pesticides (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Amitrole	mg/L	0.00090	0.0090	<0.00090	<0.00090
Diquat	mg/L	0.00010	0.0070	<0.00010	<0.00010
Clopyralid	mg/L	0.0010	2.0	<0.0010	<0.0010
Paraquat	mg/L	0.00010	0.020	<0.00010	<0.00010
MCPA	mg/L	0.00050	0.040	<0.00050	<0.00050
2,4-D	mg/L	0.00010	0.030	<0.00010	<0.00010
Triclopyr	mg/L	0.0010	0.020	<0.0010	<0.0010
Diuron	mg/L	0.0050	0.020	<0.0050	<0.0050
Picloram	mg/L	0.0010	0.30	<0.0010	<0.0010
Simazine	mg/L	0.00010	0.020	<0.00010	<0.00010
Atrazine	mg/L	0.00050	0.00050	<0.00050	<0.00050
Heptachlor	mg/L	0.000050	0.00030	<0.000050	<0.000050
Chlorfenvinphos	mg/L	0.00050	0.0020	<0.00050	<0.00050
Endosulfan	mg/L	0.00050	0.020	<0.00050	<0.00050
Propiconazole A	mg/L	0.00010	0.10	<0.00010	<0.00010
Hexazinone	mg/L	0.0020	0.30	<0.0020	<0.0020
Temephos	mg/L	0.0050	0.40	<0.0050	<0.0050

SCSG Treatment Organics (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Acrylamide	mg/L	0.00010	0.00020	<0.00010	<0.00010
Carbon Tetrachloride	mg/L	0.00050	0.0030	<0.00050	<0.00050
Surrogate Dibromofluoromethane	%			101	100

Acid Extractable Metals (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Phosphorus	mg/L	0.050	<0.050	0.33

Acid Extractable Low Level Metals (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Silver	µg/L	1.0	100	<1.0	<1.0
Arsenic	µg/L	1.0	10	<1.0	<1.0
Beryllium	µg/L	0.50	60	<0.50	<0.50
Lithium	µg/L	1.0		<1.0	<1.0
Antimony	µg/L	1.0	3.0	<1.0	<1.0
Selenium	µg/L	1.0	10	<1.0	<1.0

Dissolved Metals (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Sulfur	mg/L	0.50	5.8	180
Silica*	mg/L	0.20	4.0	4.5

Dissolved Low Level Metals (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Aluminium	µg/L	10		<10	<10
Boron	µg/L	20	4000	34	27
Barium	µg/L	1.0	2000	16	3.7
Cadmium	µg/L	0.10		<0.10	<0.10
Cobalt	µg/L	1.0		<1.0	<1.0
Chromium	µg/L	1.0		<1.0	<1.0
Copper	µg/L	1.0		<1.0	6.6
Iron	µg/L	10		24	440
Gallium	µg/L	1.0		<1.0	<1.0
Mercury	µg/L	0.050		<0.050	<0.050
Manganese	µg/L	1.0		<1.0	<1.0
Molybdenum	µg/L	1.0		<1.0	1.9
Nickel	µg/L	1.0		<1.0	2.3
Lead	µg/L	1.0		<1.0	<1.0
Strontium	µg/L	1.0		53	31
Titanium	µg/L	1.0		<1.0	<1.0
Uranium	µg/L	1.0		<1.0	<1.0
Vanadium	µg/L	1.0		<1.0	<1.0
Zinc	µg/L	1.0		<1.0	4.3

Sodium Adsorption Ratio (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Sodium Adsorption Ratio	-	0.0	3.2	28

Inorganics - Physical Parameters (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
pH	pH units		6.5-8.5	7.8	7.8
Total Dissolved Solids	mg/L	5.0		250	1500
Total Suspended Solids	mg/L	5.0		<5.0	<5.0
Turbidity	NTU	0.10		2.4	3.8
Dissolved Oxygen*	mg/L	0.10		10	7.1
Colour (True)	PCU	5.0		7.8	19

Inorganics - Ionic Balance and Indexes (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Bicarbonate Alkalinity as CaCO3	mg/L as CaCO3	5.0	30	330
Carbonate Alkalinity as CaCO3	mg/L as CaCO3	5.0	<5.0	<5.0
Hydroxide OH- as CaCO3	mg/L as CaCO3	5.0	<5.0	<5.0
Total Alkalinity as CaCO3	mg/L as CaCO3	5.0	30	330
Chloride	mg/L	1.0	120	240
Sulfate	mg/L	1.0	17	580
Calcium	mg/L	0.50	7.4	17
Magnesium	mg/L	0.50	11	4.2
Potassium	mg/L	0.50	2.0	11
Sodium	mg/L	0.50	60	510
Hardness as CaCO3	mg/L	3.0	66	60
Ionic Balance	%		-5.6	-3.8
Total Anions	mg/L	7.0	170	1100
Anions as meq	meq/L	0.59	4.2	24
Total Cations	mg/L	2.0	81	540
Cations as meq	meq/L	0.10	4.0	24
Langelier Saturation Index	-		0.68	2.0

Inorganics - Miscellaneous and Common Anions (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Bromide	mg/L	0.50		<0.50	<0.50
Fluoride	mg/L	0.10	1.5	<0.10	<0.10
Iodide	mg/L	0.10	0.50	<0.10	<0.10
Sulfide*	mg/L	0.50	0.050	<0.50	<0.50

Inorganics - Organic Carbons (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Total Organic Carbon	mg/L	1.0	4.0	8.2
Dissolved Organic Carbon	mg/L	1.0	3.9	6.4

Inorganics - Nutrients (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Ammonia as N	mg/L	0.0050	0.50	0.0080	0.016
Free Ammonia (unionised) as N by calculation*	mg/L	0.0070		<0.0070	<0.0070
Ammonium (NH4+) as N by calculation	mg/L	0.0070		0.0080	0.016
Nitrate as N	mg/L	0.0050		0.11	1.5
Nitrate as NO3 by calculation	mg/L	0.020	50	0.50	6.4
Nitrite as N	mg/L	0.0050		<0.0050	0.25
Nitrite as NO2 by calculation	mg/L	0.020	3.0	<0.020	0.81
NOx as N	mg/L	0.0050		0.11	1.7
TKN as N by calculation	mg/L	0.10		0.25	1.6
Organic Nitrogen by calc.	mg/L	0.10		0.24	1.5
Total Nitrogen	mg/L	0.10		0.36	3.3
Phosphate as P	mg/L	0.0050		<0.0050	0.0098
Reactive Silica*	mg/L	0.10		4.1	4.7

Inorganics - Common Wastewater Parameters (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
BOD	mg/L	5.0	<5.0	21
COD	mg O2/L	20	<20	31

Inorganics - Cyanide Species and Similar (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Total Cyanide	mg/L	0.0040	0.080	<0.0040	<0.0040

Microbiological Suite (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Thermotolerant Coliforms	cfu/100mL	1	1	**8**	> 150
E.coli	cfu/100mL	1	1	**8**	**24**

Amoebae (Water)

Envirolab ID	Units	PQL	ADWG	PEI0228-01	PEI0228-02
Your Reference			Health	Harvey DAM	SBR DECANT
Date Sampled			Value	04/09/2023	04/09/2023
Thermophilic Amoebae	per 250mL	1.0		Not Detected	Not Detected
Thermophilic Naegleria	per 250mL	1.0	1.0	Not Detected	Not Detected

Subcontracted Radiological - Certificate: ME338866 - Analysed By SGS Environment Services (VIC) (Water)

Envirolab ID	Units	PQL	PEI0228-01	PEI0228-02
Your Reference			Harvey DAM	SBR DECANT
Date Sampled			04/09/2023	04/09/2023
Gross alpha	Bq/L		0.016	0.081
Gross beta	Bq/L		0.044	0.078

Result Comments

Identifier	Description
[2]	Surrogate recovery was low due to sample(s) emulsifying during liquid liquid extraction.

Method Summary

Method ID	Methodology Summary
Calc	Calculation
Calc - SAR	Determination of SAR from cations concentration.
Calc - TKN	TKN determined by calculation (Total Nitrogen - NOx).
INORG-001	pH - Measured using pH meter and electrode based on APHA latest edition, Method 4500-H+. Please note that the results for water analyses are indicative only, as analysis can be completed outside of the APHA recommended holding times. Solids are reported from a 1:5 water extract unless otherwise specified. Alternatively, pH is determined in a 1:5 extract using 0.01M calcium chloride or a solid is extracted at a ratio of 1:2.5 (AS1289.4.3.1), pH is measured in the extract.
INORG-006	Alkalinity - determined titrimetrically based on APHA latest edition 2320-B. Solids reported from a 1:5 water extract unless otherwise specified. Total Carbon Dioxide - determined by calculation in accordance with APHA latest edition,4500-CO2 D.
INORG-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hypochlorite to assess the potential for chlorination of cyanide forms.
INORG-018	Total Dissolved Solids - determined gravimetrically. The solids are dried at 180±10°C. NOTE: Where the EC of the sample is <100µS/cm, the TDS will typically be below 70mg/L (as the sample is very likely to be at least drinking water quality). Therefore to ensure data quality for TDS, the TDS is typically calculated as per the equation: TDS = EC*0.6
INORG-019	Suspended Solids - determined gravimetrically by filtration of the sample. The solids are dried at 104±5°C
INORG-022	Turbidity - measured nephelometrically using a turbidimeter, in accordance with APHA latest edition, 2130-B.
INORG-026	Fluoride determined by ion selective electrode (ISE) based on APHA latest edition, 4500-F-C. Solids are reported from a 1:5 water extract unless otherwise specified.
INORG-028	Measured by visual comparison and/or spectrophotometrically.
INORG-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% i.e. total anions = total cations +/-15%.
INORG-051	Determined titrimetrically. Note, the Sulphide is termed as Total Sulphide given any Sulphide contained in any sediment present is also included in the determination.
INORG-055	Nitrate/Nitrite/NOx/TKN - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils/solids are analysed following a water extraction.
INORG-057	Ammonia - determined colourimetrically. Water samples are filtered on receipt prior to analysis. Soils and OHS media are analysed following a water extraction. Alternatively, Ammonia can be extracted from soil using 1M KCl.
INORG-060	Phosphate - determined colourimetrically using APHA latest edition 4500 P E. Water samples are filtered on receipt prior to analysis. Soils are analysed from a water extract.
INORG-067	Samples are digested in acid with a known excess of potassium dichromate then the colour change is determined by discrete analyser or UV-VIS in accordance with APHA latest edition 5220 D.
INORG-079	Carbon forms (inorganic, organic, total) determined using a TOC/NDIR analyser via combustion. Dissolved aqueous\forms require filtering prior to determination.
INORG-081	Anions determined by Ion Chromatography. Waters samples are filtered on receipt prior to analysis. Solids are analysed from a water extract. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-086	Calculation of Langelier Saturation Index, Ryznar Stability Index - this calculation includes client supplied temperature, otherwise a water temperature of 20ºC is assumed
INORG-091	BOD and/or cBOD - Analysed in accordance with APHA latest edition 5210 D.
INORG-112	Dissolved Oxygen determined using a membrane electrode. Note this analysis should ideally be carried out immediately after sampling.
INORG-120	Reactive silica by colourimetric molybdate method. Water samples are filtered on receipt prior to analysis.
INORG-127	Total Nitrogen by high temperature catalytic combustion with chemiluminescence detection. Organic Carbon forms (inorganic, organic, total) determined using a TOC/NDIR analyser via combustion. Dissolved forms require filtering prior to determination.
METALS-020	Determination of various metals by ICP-OES.
METALS-021	Determination of Mercury by Cold Vapour AAS.

Method Summary

Method ID	Methodology Summary
METALS-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements.
MICRO-001B	E. coli/Thermotolerant coliforms: Microbial Water Analysis - in accordance with MICRO-001 (AS4276.5-latest edition). Recommended maximums based on NHMRC Australian Drinking Water Guidelines. Please note that results for this test derived from counts outside of the range 10-100 are considered approximate as per AS4276.1.
MICRO-003	Microbial Water Analysis - Free Living Protozoa
ORG-022	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and soils using DCM/Acetone/Methanol.
ORG-022_EDTA_NTA	EDTA and NTA determined by derivatisation and analysis by GC-MS
ORG-023	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Soils are extracted with Methanol, diluted and analysed by purge and trap GC-MS.
ORG-025	Determination of semi-volatile organic compounds (SVOCs) by GC-MS-MS. Water samples are extracted by LLE and soils/solids using DCM/Acetone/Methanol.
ORG-025_W	Determination of semi-volatile organic compounds (SVOCs) by GC-MS-MS. Water samples are extracted by LLE.
ORG-029	Soil/solid and sorbent samples are extracted with basified Methanol. Waters and soil/sorbent extracts are directly injected and/or concentrated/extracted using SPE. TCLP/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MSMS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compounds. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.
ORG-029_ACRYL	Acrylamide in liquids (water/leachate) determined by direct injection by LC/MS/MS.
ORG-029_MPC	Waters are directly injected and/or concentrated/extracted using SPE. Analysis is undertaken with LC-MSMS.
ORG-029_SVOC_VOC_LCMSMS	Water samples are run directly, soils are extracted using an aqueous buffer and plant material using solvent extraction/cleanup. Further cleanup maybe necessary. Analysis using LC-MSMS.
SUB-027_GAB1	Subcontracted to SGS - Accreditation number 2562

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

Surrogate Spike

Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

LCS (Laboratory Control Sample)

This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Matrix Spike

A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from the latest "Australian Drinking Water Guidelines", published by NHMRC. No guideline values have been set for Total Coliforms in drinking water. Increased concentrations should be investigated. Total Coliforms are not considered useful as indicators of the presence of faecal contamination.

Where we have provided guideline values eg. ADWG Health Value, it is the responsiblity of the reader to decide if the water is fit for consumption. Please note that the tests we have conducted are just a selection of common tests to give you a general idea of drinking water quality. There are many other tests included in the ADWG that we have not tested for.

Data Quality Assessment Summary PEI0228

Client Details

Client	Harvey Water
Your Reference	Water Analysis
Date Issued	20/09/2023

Recommended Holding Time Compliance

Recommended holding time exceedances exist - See detailed list below

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	No	Duplicate Outliers Exist - See detailed list below
Matrix Spike	No	Matrix Spike Outliers Exist - See detailed list below
Surrogates / Extracted Internal Standards	No	Surrogates / Extracted ISTD Outliers Exist - See detailed list below
QC Frequency	No	QC Frequency Outliers Exist - See detailed list below

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary PEI0228

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
OCP (LL) | Water	1-2	04/09/2023	07/09/2023	08/09/2023	Yes
OPP LL | Water	1-2	04/09/2023	06/09/2023	08/09/2023	Yes
Phthalates incl. DEHA | Water	1-2	04/09/2023	06/09/2023	07/09/2023	Yes
SCSG Banned Pesticides | Water	1-2	04/09/2023	07/09/2023	08/09/2023	Yes
SCSG Organic Compounds:Industrial Hydrocarbons | Water	1-2	04/09/2023	06/09/2023	07/09/2023	Yes
	1-2	04/09/2023	07/09/2023	08/09/2023	Yes
Amitrole | Water	1-2	04/09/2023	07/09/2023	07/09/2023	Yes
SCSG Pesticides | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
	1-2	04/09/2023	07/09/2023	08/09/2023	Yes
Acrylamide | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
SCSG Treatment Organics | Water	1-2	04/09/2023	06/09/2023	07/09/2023	Yes
Total Phosphorus | Water	1-2	04/09/2023	04/09/2023	06/09/2023	Yes
Total Metals (LL) | Water	1-2	04/09/2023	05/09/2023	07/09/2023	Yes
Dissolved Metals | Water	1-2	04/09/2023	05/09/2023	06/09/2023	Yes
Dissolved Metals (LL) | Water	1-2	04/09/2023	05/09/2023	07/09/2023	Yes
Dissolved Metals (LL)-Hg | Water	1-2	04/09/2023	05/09/2023	06/09/2023	Yes
SAR | Water	1-2	04/09/2023	05/09/2023	08/09/2023	Yes
Colour-True | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Dissolved O2 | Water	1-2	04/09/2023	05/09/2023	05/09/2023	Yes
pH | Water	1-2	04/09/2023	06/09/2023	06/09/2023	No
TDS | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
TSS | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Turbidity | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Alkalinity Suite | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Chloride | Water	1	04/09/2023	05/09/2023	06/09/2023	Yes
	2	04/09/2023	05/09/2023	07/09/2023	Yes
Dissolved Cations | Water	1-2	04/09/2023	05/09/2023	06/09/2023	Yes
Ion Balance | Water	1-2	04/09/2023	05/09/2023	08/09/2023	Yes
Langelier Saturation Index (LSI) | Water	1-2	04/09/2023	05/09/2023	08/09/2023	Yes
Sulfate | Water	1	04/09/2023	05/09/2023	06/09/2023	Yes
	2	04/09/2023	05/09/2023	07/09/2023	Yes
Bromide | Water	1	04/09/2023	05/09/2023	06/09/2023	Yes
	2	04/09/2023	05/09/2023	07/09/2023	Yes
Fluoride | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Iodide | Water	1	04/09/2023	05/09/2023	06/09/2023	Yes
	2	04/09/2023	05/09/2023	07/09/2023	Yes
Sulfide | Water	1-2	04/09/2023	07/09/2023	08/09/2023	Yes

Data Quality Assessment Summary PEI0228

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
Dissolved Organic Carbon | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Total Organic Carbon | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Nitrogen - Ammonia | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Nitrogen - Nitrate | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Nitrogen - Nitrite | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Nitrogen - NOx | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Nitrogen - Total N | Water	1-2	04/09/2023	05/09/2023	06/09/2023	Yes
Phosphate as P | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Reactive Silica | Water	1-2	04/09/2023	08/09/2023	08/09/2023	Yes
TKN as N calc | Water	1-2	04/09/2023	05/09/2023	08/09/2023	Yes
BOD | Water	1-2	04/09/2023	06/09/2023	11/09/2023	Yes
COD | Water	1-2	04/09/2023	06/09/2023	06/09/2023	Yes
Cyanide - Total | Water	1-2	04/09/2023	05/09/2023	06/09/2023	Yes
E. coli & T.T.coli | Water	1-2	04/09/2023	05/09/2023	05/09/2023	Yes
Thermophilic Amoebae | Water	1-2	04/09/2023	05/09/2023	05/09/2023	Yes
Gross alpha & beta | Water	1-2	04/09/2023	19/09/2023	19/09/2023	Yes

Outliers: Duplicates

METALS-022|Dissolved Low Level Metals (Water)| Batch BEI0447

Sample ID	Duplicate ID	Analyte	% Limits	RPD
BEI0447-DUP1#	DUP1	Strontium	20.00	200[3]

Outliers: Matrix Spike

METALS-020|Dissolved Metals (Water)| Batch BEI0455

Sample ID	Analyte	% Limits	% Recovery
PEI0228-02	Sulfur	70 - 130	##[1]

METALS-020|Inorganics - Ionic Balance and Indexes (Water)| Batch BEI0455

Sample ID	Analyte	% Limits	% Recovery
PEI0228-02	Sodium	70 - 130	##[1]

Data Quality Assessment Summary PEI0228

Outliers: Surrogate / Extracted Internal Standards

ORG-022|Phthalates (Matrix)| Batch BEI0518

Sample ID	Analyte	% Limits	% Recovery
PEI0228-01	p-Terphenyl-D14	60 - 140	## [2]

Outliers: QC Frequency

INORG-014|Inorganics - Cyanide Species and Similar (Water)| Batch BEI0461

Analysis	QC Type	Expected	Reported
Cyanide - Total	Duplicate	2	1

INORG-051|Inorganics - Miscellaneous and Common Anions (Water)| Batch BEI0651

Analysis	QC Type	Expected	Reported
Sulfide	Duplicate	2	0

INORG-091|Inorganics - Common Wastewater Parameters (Water)| Batch BEI0714

Analysis	QC Type	Expected	Reported
BOD	Duplicate	1	0

INORG-112|Inorganics - Physical Parameters (Water)| Batch BEI0365

Analysis	QC Type	Expected	Reported
Dissolved O2	Duplicate	1	0

ORG-022|Phthalates (Water)| Batch BEI0518

Analysis	QC Type	Expected	Reported
Phthalates incl. DEHA	Matrix Spike	1	0

ORG-022|SCSG Pesticides (Water)| Batch BEI0697

Analysis	QC Type	Expected	Reported
SCSG Pesticides	Duplicate	1	0
	Matrix Spike	1	0

ORG-023|SCSG Organic Compounds: Industrial Hydrocarbons (Water)| Batch BEI0596

Analysis	QC Type	Expected	Reported
SCSG Organic Compounds:Industrial H	Duplicate	1	0
	Matrix Spike	1	0

ORG-023|SCSG Organic Compounds: Industrial Hydrocarbons (Water)| Batch BEI0598

Analysis	QC Type	Expected	Reported
	Duplicate	1	0
	Matrix Spike	1	0
SCSG Treatment Organics	Duplicate	1	0
	Matrix Spike	1	0

Data Quality Assessment Summary PEI0228

ORG-025|Organophosphorus Pesticides - Low Level (Water)| Batch BEI0553

Analysis	QC Type	Expected	Reported
OPP LL	Duplicate	1	0
	Matrix Spike	1	0

Quality Control PEI0228

ORG-025|Organochlorine Pesticides - Low Level (Water) | Batch BEI0698

Analyte	Units	PQL	Blank	DUP1 BEI0698-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0698-MS1#
alpha-BHC	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	78.6	97.8
Hexachlorobenzene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
beta-BHC	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	97.4	100
gamma-BHC	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	[NA]	[NA]
delta-BHC	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	[NA]	[NA]
Heptachlor	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	101	106
Aldrin	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	105	102
Heptachlor epoxide	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	94.8	105
trans-Chlordane	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
cis-Chlordane	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Endosulfan I	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	[NA]	[NA]
4,4'-DDE	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	97.3	110
Dieldrin	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	90.4	107
Endrin	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	95.0	112
4,4'-DDD	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	97.9	103
Endosulfan II	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	[NA]	[NA]
4,4'-DDT	µg/L	0.0060	<0.0060	<0.0060 | <0.0060 | [NA]	[NA]	[NA]
Endosulfan sulfate	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	96.1	106
Endrin ketone	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	[NA]	[NA]
Methoxychlor	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	[NA]	[NA]
Mirex	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	[NA]	[NA]
Surrogate 2-Chlorophenol-D4	*%*		*85.0*	*93.0 | 87.9*	*90.5*	*98.4*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-025|Organophosphorus Pesticides - Low Level (Water) | Batch BEI0553

Analyte	Units	PQL	Blank	LCS %
Dichlorvos	µg/L	0.050	<0.050	[NA]
Dimethoate	µg/L	0.10	<0.10	[NA]
Diazinon	µg/L	0.010	<0.010	[NA]
Chlorpyrifos-methyl	µg/L	0.050	<0.050	98.5
Parathion-methyl	µg/L	0.050	<0.050	[NA]
Ronnel	µg/L	0.050	<0.050	[NA]
Fenitrothion	µg/L	0.050	<0.050	97.9
Malathion	µg/L	0.050	<0.050	[NA]
Chlorpyrifos	µg/L	0.0090	<0.0090	105
Parathion	µg/L	0.0040	<0.0040	[NA]
Bromophos-ethyl	µg/L	0.050	<0.050	[NA]
Ethion	µg/L	0.050	<0.050	105
Coumaphos	µg/L	0.050	<0.050	[NA]
Disulfoton	µg/L	0.050	<0.050	[NA]
Fenamiphos	µg/L	0.050	<0.050	[NA]
Fenthion	µg/L	0.050	<0.050	[NA]
Methidathion	µg/L	0.050	<0.050	[NA]
Mevinphos	µg/L	0.050	<0.050	[NA]
Phorate	µg/L	0.050	<0.050	[NA]
Phosalone	µg/L	0.050	<0.050	[NA]
Azinphos-methyl	µg/L	0.020	<0.020	[NA]
Surrogate 2-Chlorophenol-D4	*%*		*102*	*97.4*

Quality Control PEI0228

ORG-022|Phthalates (Water) | Batch BEI0518

Analyte	Units	PQL	Blank	DUP1 BEI0518-DUP1# Samp | QC | RPD %	LCS %
Dimethyl phthalate	µg/L	10	<10	<10 | <10 | [NA]	[NA]
Diethyl phthalate	µg/L	10	<10	<10 | <10 | [NA]	108
Di-n-butyl phthalate	µg/L	50	<50	<50 | <50 | [NA]	103
Butyl benzyl phthalate	µg/L	10	<10	<10 | <10 | [NA]	[NA]
Di-n-octyl phthalate	µg/L	10	<10	<10 | <10 | [NA]	[NA]
Di(2-ethylhexyl) adipate (DEHA)	µg/L	50	<50	<50 | <50 | [NA]	[NA]
Bis(2-ethylhexyl) phthalate (DEHP)	µg/L	50	<50	<50 | <50 | [NA]	[NA]
Surrogate p-Terphenyl-D14	*%*		*93.4*	*83.7 | 102*	*101*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-022|SCSG Banned Pesticides (Water) | Batch BEI0698

Analyte	Units	PQL	Blank	DUP1 BEI0698-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0698-MS1#
Hexachlorobenzene	mg/L	0.00050	<0.00050	<0.00050 | <0.00050 | [NA]	[NA]	[NA]
gamma-BHC	mg/L	0.000050	<0.000050	<0.000050 | <0.000050 | [NA]	[NA]	[NA]
Aldrin	mg/L	0.00001		<0.000010 | <0.000010 | [NA]	105	102
Chlordane	mg/L	0.000010	<0.000010	<0.000010 | <0.000010 | [NA]	[NA]	[NA]
Dieldrin	mg/L	0.00001		<0.000010 | <0.000010 | [NA]	90.4	107
Aldrin+Dieldrin	mg/L	0.000020	<0.000020	<0.000020 | <0.000020 | [NA]	[NA]	[NA]
DDT	mg/L	0.000060	<0.000060	<0.000060 | <0.000060 | [NA]	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023|SCSG Organic Compounds: Industrial Hydrocarbons (Water) | Batch BEI0596

Analyte	Units	PQL	Blank	LCS %
Epichlorohydrin	mg/L	0.00025	<0.00025	83.7

Quality Control PEI0228

ORG-023|SCSG Organic Compounds: Industrial Hydrocarbons (Water) | Batch BEI0598

Analyte	Units	PQL	Blank	LCS %
Vinyl chloride	mg/L	0.00010	<0.00010	[NA]
1,1-Dichloroethene	mg/L	0.0010	<0.0010	[NA]
Methylene chloride	mg/L	0.0040	<0.0040	[NA]
1,2-dichloroethene	mg/L	0.0020	<0.0020	[NA]
1,1-Dichloroethane	mg/L	0.00050	<0.00050	99.9
Benzene	mg/L	0.00020	<0.00020	101
1,2-Dichloroethane	mg/L	0.00050	<0.00050	89.9
Trichloroethene	mg/L	0.0010	<0.0010	97.1
Toluene	mg/L	0.0010	<0.0010	101
Tetrachloroethene	mg/L	0.0010	<0.0010	105
Chlorobenzene	mg/L	0.0010	<0.0010	[NA]
Ethylbenzene	mg/L	0.0010	<0.0010	106
Total Xylene	mg/L	0.0030	<0.0030	[NA]
Styrene	mg/L	0.0010	<0.0010	[NA]
1,3-Dichlorobenzene	mg/L	0.0010	<0.0010	[NA]
1,4-Dichlorobenzene	mg/L	0.00020	<0.00020	96.2
1,2-Dichlorobenzene	mg/L	0.00050	<0.00050	[NA]
Hexachlorobutadiene	mg/L	0.00030	<0.00030	[NA]
Trichlorobenzenes (Total)	mg/L	0.0010	<0.0010	[NA]

ORG-022_EDTA_NTA|SCSG Organic Compounds: Industrial Hydrocarbons (Water) | Batch BEI0684

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % PEI0228-02
EDTA	mg/L	0.10	<0.10	<0.10 | <0.10 | [NA]	83.1	119
NTA	mg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	101	109

ORG-025_W|SCSG Organic Compounds: Industrial Hydrocarbons (Water) | Batch BEI0698

Analyte	Units	PQL	Blank	DUP1 BEI0698-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0698-MS1#
Benzo(a)pyrene	mg/L	0.000005	<0.000005	<0.000005 | <0.000005 | [NA]	90.7	95.4

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-029_SVOC_VOC_LCMSMS|SCSG Pesticides (Water) | Batch BEI0575

Analyte	Units	PQL	Blank	DUP1 BEI0575-DUP1# Samp | QC | RPD %	LCS %	Spike % PEI0228-01
Diuron	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	110	107

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-029_MPC|SCSG Pesticides (Water) | Batch BEI0695

Analyte	Units	PQL	Blank	DUP1 BEI0695-DUP1# Samp | QC | RPD %	LCS %	Spike % PEI0228-01
Amitrole	mg/L	0.00090	<0.00090	<0.00090 | <0.00090 | [NA]	109	114
Diquat	mg/L	0.00010	<0.00010		[NA]	[NA]
Paraquat	mg/L	0.00010	<0.00010		[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control PEI0228

ORG-022|SCSG Pesticides (Water) | Batch BEI0697

Analyte	Units	PQL	Blank	LCS %
Clopyralid	mg/L	0.0010	<0.0010	[NA]
MCPA	mg/L	0.00050	<0.00050	79.9
2,4-D	mg/L	0.00010	<0.00010	74.4
Triclopyr	mg/L	0.0010	<0.0010	[NA]
Picloram	mg/L	0.0010	<0.0010	[NA]

ORG-025_W|SCSG Pesticides (Water) | Batch BEI0698

Analyte	Units	PQL	Blank	DUP1 BEI0698-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0698-MS1#
Simazine	mg/L	0.00010	<0.00010	<0.00010 | <0.00010 | [NA]	[NA]	[NA]
Atrazine	mg/L	0.00050	<0.00050	<0.00050 | <0.00050 | [NA]	88.5	106
Heptachlor	mg/L	0.000050	<0.000050	<0.000050 | <0.000050 | [NA]	101	106
Chlorfenvinphos	mg/L	0.00050	<0.00050	<0.00050 | <0.00050 | [NA]	[NA]	[NA]
Endosulfan	mg/L	0.00050	<0.00050	<0.00050 | <0.00050 | [NA]	[NA]	[NA]
Propiconazole A	mg/L	0.00010	<0.00010	<0.00010 | <0.00010 | [NA]	[NA]	[NA]
Hexazinone	mg/L	0.0020	<0.0020	<0.0020 | <0.0020 | [NA]	[NA]	[NA]
Temephos	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-029_ACRYL|SCSG Treatment Organics (Water) | Batch BEI0576

Analyte	Units	PQL	Blank	DUP1 BEI0576-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0576-MS1#
Acrylamide	mg/L	0.00010	<0.00010	0.00853 | 0.00897 | 5.11	103	109

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023|SCSG Treatment Organics (Water) | Batch BEI0598

Analyte	Units	PQL	Blank	LCS %
Carbon Tetrachloride	mg/L	0.00050	<0.00050	104
Surrogate Dibromofluoromethane	*%*		*101*	*101*

METALS-020|Acid Extractable Metals (Water) | Batch BEI0258

Analyte	Units	PQL	Blank	DUP1 BEI0258-DUP1# Samp | QC | RPD %	DUP2 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % BEI0258-MS1#
Phosphorus	mg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	<0.050 | <0.050 | [NA]	99.8	98.0

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-022|Acid Extractable Low Level Metals (Water) | Batch BEI0451

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % PEI0228-02
Antimony	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	119	117
Arsenic	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	112	110
Beryllium	µg/L	0.50	<0.50	<0.50 | <0.50 | [NA]	93.6	90.0
Lithium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	97.2	94.6
Selenium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	119	107
Silver	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	108	103

Quality Control PEI0228

METALS-020|Dissolved Metals (Water) | Batch BEI0455

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	DUP2 BEI0455-DUP2# Samp | QC | RPD %	LCS %	Spike % PEI0228-02
Silicon	mg/L	0.1		1.89 | 1.93 | 2.43	0.341 | 0.349 | 2.27	105	123
Sulfur	mg/L	0.50	<0.50	5.78 | 5.86 | 1.39	96.8 | 98.7 | 1.94	99.1	##[1]
Silica	mg/L	0.20	<0.20	4.03 | 4.13 | 2.43	0.730 | 0.746 | 2.27	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-021|Dissolved Low Level Metals (Water) | Batch BEI0440

Analyte	Units	PQL	Blank	DUP1 BEI0440-DUP1# Samp | QC | RPD %	DUP2 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % BEI0440-MS1#
Mercury	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	<0.050 | <0.050 | [NA]	102	94.4

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-022|Dissolved Low Level Metals (Water) | Batch BEI0447

Analyte	Units	PQL	Blank	DUP1 BEI0447-DUP1# Samp | QC | RPD %	DUP2 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % BEI0447-MS1#
Aluminium	µg/L	10	<10	<10 | <10 | [NA]	<10 | <10 | [NA]	96.0	97.1
Barium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	15.6 | 15.6 | 0.0449	104	104
Boron	µg/L	20	<20	34.1 | 32.7 | 4.22	34.2 | 31.3 | 8.88	119	106
Cadmium	µg/L	0.10	<0.10	<0.10 | <0.10 | [NA]	<0.10 | <0.10 | [NA]	110	111
Chromium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	108	106
Cobalt	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	111	107
Copper	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	106	101
Gallium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	102	98.7
Iron	µg/L	10	<10	<10 | <10 | [NA]	24.2 | 23.8 | 1.83	111	108
Lead	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	101	101
Manganese	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	101	95.7
Molybdenum	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	106	105
Nickel	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	107	104
Strontium	µg/L	1.0	<1.0	1.10 | <1.0 | 200 [3]	52.9 | 52.1 | 1.61	99.1	94.8
Titanium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	98.8	98.8
Uranium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	97.7	97.5
Vanadium	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	110	106
Zinc	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	108	103

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-112|Inorganics - Physical Parameters (Water) | Batch BEI0365

Analyte	Units	PQL	Blank	LCS %
Dissolved Oxygen	mg/L	0.10	<0.10	[NA]

INORG-028|Inorganics - Physical Parameters (Water) | Batch BEI0467

Analyte	Units	PQL	Blank	DUP1 BEI0467-DUP1# Samp | QC | RPD %	DUP2 BEI0467-DUP2# Samp | QC | RPD %	LCS %
Colour (True)	PCU	5.0	<5.0	<5.0 | <5.0 | [NA]	65.1 | 64.2 | 1.41	97.4

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control PEI0228

INORG-001 | Inorganics - Physical Parameters (Water) | Batch BEI0476

Analyte	Units	PQL	Blank	DUP1 BEI0476-DUP1# Samp | QC | RPD %	DUP2 BEI0476-DUP2# Samp | QC | RPD %	LCS %
pH	pH units		9.4	7.4 | 7.5 | 0.134	3.2 | 3.1 | 1.60	105

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-018 | Inorganics - Physical Parameters (Water) | Batch BEI0507

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %
Total Dissolved Solids	mg/L	5.0	<5.0	246 | 259 | 5.15	95.9

INORG-019 | Inorganics - Physical Parameters (Water) | Batch BEI0508

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %
Total Suspended Solids	mg/L	5.0	<5.0	<5.0 | <5.0 | [NA]	94.0

INORG-022 | Inorganics - Physical Parameters (Water) | Batch BEI0601

Analyte	Units	PQL	Blank	DUP1 BEI0601-DUP1# Samp | QC | RPD %	DUP2 BEI0601-DUP2# Samp | QC | RPD %	LCS %
Turbidity	NTU	0.10	<0.10	0.180 | 0.190 | 5.41	0.220 | 0.200 | 9.52	97.0

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-081 | Inorganics - Ionic Balance and Indexes (Water) | Batch BEI0453

Analyte	Units	PQL	Blank	DUP1 BEI0453-DUP1# Samp | QC | RPD %	DUP2 BEI0453-DUP2# Samp | QC | RPD %	LCS %	Spike % BEI0453-MS1#
Chloride	mg/L	1.0	<1.0	553 | 554 | 0.150	509 | 506 | 0.481	95.8	73.1
Sulfate	mg/L	1.0	<1.0	1460 | 1470 | 0.509	38.1 | 37.9 | 0.626	100	71.1

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-020 | Inorganics - Ionic Balance and Indexes (Water) | Batch BEI0455

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	DUP2 BEI0455-DUP2# Samp | QC | RPD %	LCS %	Spike % PEI0228-02
Calcium	mg/L	0.50	<0.50	7.38 | 7.54 | 2.09	38.7 | 39.1 | 1.04	101	89.6
Magnesium	mg/L	0.50	<0.50	11.5 | 11.6 | 1.09	130 | 132 | 0.909	104	102
Potassium	mg/L	0.50	<0.50	2.00 | 1.92 | 4.04	40.2 | 41.0 | 1.99	102	97.4
Sodium	mg/L	0.50	<0.50	60.4 | 62.9 | 4.04	1110 | 1140 | 2.88	101	##[1]
Hardness as CaCO3	mg/L	3.0	<3.0	65.6 | 66.6 | 1.37	633 | 639 | 0.928	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-006 | Inorganics - Ionic Balance and Indexes (Water) | Batch BEI0476

Analyte	Units	PQL	Blank	DUP1 BEI0476-DUP1# Samp | QC | RPD %	DUP2 BEI0476-DUP2# Samp | QC | RPD %	LCS %
Bicarbonate Alkalinity as CaCO3	mg/L as CaCO3	5.0	<5.0	374 | 386 | 3.15	<5.0 | <5.0 | [NA]	[NA]
Carbonate Alkalinity as CaCO3	mg/L as CaCO3	5.0	<5.0	<5.0 | <5.0 | [NA]	<5.0 | <5.0 | [NA]	[NA]
Hydroxide OH- as CaCO3	mg/L as CaCO3	5.0	<5.0	<5.0 | <5.0 | [NA]	<5.0 | <5.0 | [NA]	[NA]
Total Alkalinity as CaCO3	mg/L as CaCO3	5.0	<5.0	374 | 386 | 3.15	<5.0 | <5.0 | [NA]	113

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control PEI0228

INORG-081 | Inorganics - Miscellaneous and Common Anions (Water) | Batch BEI0453

Analyte	Units	PQL	Blank	DUP1 BEI0453-DUP1# Samp | QC | RPD %	DUP2 BEI0453-DUP2# Samp | QC | RPD %	LCS %	Spike % BEI0453-MS1#
Bromide	mg/L	0.50	<0.50	2.51 | 2.64 | 5.03	1.57 | 1.55 | 1.28	105	127
Iodide	mg/L	0.10	<0.10	<0.10 | <0.10 | [NA]	<0.10 | <0.10 | [NA]	101	96.0

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-026 | Inorganics - Miscellaneous and Common Anions (Water) | Batch BEI0471

Analyte	Units	PQL	Blank	DUP1 BEI0471-DUP1# Samp | QC | RPD %	DUP2 BEI0471-DUP2# Samp | QC | RPD %	LCS %	Spike % BEI0471-MS1#
Fluoride	mg/L	0.10	<0.10	<0.10 | <0.10 | [NA]	<0.10 | <0.10 | [NA]	96.8	101

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-051 | Inorganics - Miscellaneous and Common Anions (Water) | Batch BEI0651

Analyte	Units	PQL	Blank	LCS %
Sulfide	mg/L	0.50	<0.50	82.9

INORG-079 | Inorganics - Organic Carbons (Water) | Batch BEI0516

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % PEI0228-02
Dissolved Organic Carbon	mg/L	1.0	<1.0	3.95 | 3.78 | 4.30	97.2	104

INORG-079 | Inorganics - Organic Carbons (Water) | Batch BEI0517

Analyte	Units	PQL	Blank	DUP1 BEI0517-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0517-MS1#
Total Organic Carbon	mg/L	1.0	<1.0	11.7 | 11.5 | 1.86	98.5	108

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-127 | Inorganics - Nutrients (Water) | Batch BEI0459

Analyte	Units	PQL	Blank	DUP1 BEI0459-DUP1# Samp | QC | RPD %	DUP2 BEI0459-DUP2# Samp | QC | RPD %	LCS %	Spike % BEI0459-MS1#
Total Nitrogen	mg/L	0.10	<0.10	166 | 170 | 2.19	4.94 | 4.84 | 2.07	114	125

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-057 | Inorganics - Nutrients (Water) | Batch BEI0467

Analyte	Units	PQL	Blank	DUP1 BEI0467-DUP1# Samp | QC | RPD %	DUP2 BEI0467-DUP2# Samp | QC | RPD %	LCS %	Spike % BEI0467-MS1#
Ammonia as N	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	24.9 | 23.6 | 5.34	91.8	97.4
Nitrate as N	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	0.264 | 0.266 | 0.886	106	112
Nitrate as NO3 by calculation	mg/L	0.020	<0.020			[NA]	[NA]
Nitrite as N	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	0.138 | 0.136 | 1.79	94.5	92.0
Nitrite as NO2 by calculation	mg/L	0.020	<0.020			[NA]	[NA]
NOx as N	mg/L	0.0050	<0.0050	<0.0050 | <0.0050 | [NA]	0.402 | 0.402 | 0.0249	106	112
Phosphate as P	mg/L	0.0050	<0.0050	0.177 | 0.182 | 2.51	6.46 | 6.36 | 1.66	103	83.0

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-120 | Inorganics - Nutrients (Water) | Batch BEI0770

Analyte	Units	PQL	Blank	DUP1 PEI0228-01 Samp | QC | RPD %	LCS %	Spike % PEI0228-02
Reactive Silica	mg/L	0.10	<0.10	4.05 | 4.02 | 0.776	103	88.2

Quality Control PEI0228

INORG-067 | Inorganics - Common Wastewater Parameters (Water) | Batch BEI0523

Analyte	Units	PQL	Blank	DUP1 BEI0523-DUP1# Samp | QC | RPD %	DUP2 BEI0523-DUP2# Samp | QC | RPD %	LCS %
COD	mg O2/L	20	<20	68.0 | 68.0 | 0.00	463 | 462 | 0.216	107

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-091 | Inorganics - Common Wastewater Parameters (Water) | Batch BEI0714

Analyte	Units	PQL	Blank	LCS %
BOD	mg/L	5.0	<5.0	81.1

INORG-014 | Inorganics - Cyanide Species and Similar (Water) | Batch BEI0461

Analyte	Units	PQL	Blank	DUP1 BEI0461-DUP1# Samp | QC | RPD %	LCS %	Spike % BEI0461-MS1#
Total Cyanide	mg/L	0.0040	<0.0040	12.8 | 12.9 | 0.765	97.0	70.4

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

MICRO-001B | Microbiological Suite (Water) | Batch BEI0528

Analyte	Units	PQL	Blank	DUP1 BEI0528-DUP1# Samp | QC | RPD %	DUP2 BEI0528-DUP2# Samp | QC | RPD %	LCS %
Thermotolerant Coliforms	cfu/100mL	1	<1	<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]
E.coli	cfu/100mL	1	<1	<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]

Analyte	Units	PQL	Blank	DUP3 BEI0528-DUP3# Samp | QC | RPD %	DUP4 BEI0528-DUP4# Samp | QC | RPD %	LCS %
Thermotolerant Coliforms	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]
E.coli	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]

Analyte	Units	PQL	Blank	DUP5 BEI0528-DUP5# Samp | QC | RPD %	DUP6 BEI0528-DUP6# Samp | QC | RPD %	LCS %
Thermotolerant Coliforms	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]
E.coli	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]

Analyte	Units	PQL	Blank	DUP7 BEI0528-DUP7# Samp | QC | RPD %	DUP8 BEI0528-DUP8# Samp | QC | RPD %	LCS %
Thermotolerant Coliforms	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]
E.coli	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]

Analyte	Units	PQL	Blank	DUP9 BEI0528-DUP9# Samp | QC | RPD %	DUPA BEI0528-DUPA# Samp | QC | RPD %	LCS %
Thermotolerant Coliforms	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]
E.coli	cfu/100mL	1		<1 | <1 | [NA]	<1 | <1 | [NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

MICRO-003 | Amoebae (Water) | Batch BEI0527

Analyte	Units	PQL	Blank	LCS %
Thermophilic Amoebae	per 250mL	1.0	Not Detected	[NA]
Thermophilic Naegleria	per 250mL	1.0	Not Detected	[NA]

Quality Control PEI0228

QC Comments

Identifier	Description
[1]	Spike recovery is not applicable due to the relatively high analyte background in the sample (>3* spike level). However, the LCS recovery is within acceptance criteria.
[3]	Duplicate %RPD may be flagged as an outlier to routine laboratory acceptance, however, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.

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Certificate of Analysis PFD0586

Client Details

Client	Harvey Water
Contact	Cameron Norris
Address	PO Box 468, HARVEY, WA, 6220

Sample Details

Your Reference	Harvey Fresh HF
Number of Samples	3 Water
Date Samples Received	09/04/2024
Date Instructions Received	09/04/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	23/04/2024
Date of Issue	22/04/2024

Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with *.

Authorisation Details

Results Approved By	Hien Luong, Organics Technician Nick Salarmis, Assistant Operations Manager Sean McAlary, Chemist Travis Carey, Organics Supervisor
Laboratory Manager	Michael Kubiak

Certificate of Analysis PFD0586

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
PFD0586-01	Outlet	Water	08/04/2024	09/04/2024
PFD0586-02	Point 2	Water	08/04/2024	09/04/2024
PFD0586-03	B Ramp	Water	08/04/2024	09/04/2024

Polycyclic Aromatic Hydrocarbons - Trace Level (Water)

Envirolab ID	Units	PQL	PFD0586-01	PFD0586-02	PFD0586-03
Your Reference			Outlet	Point 2	B Ramp
Date Sampled			08/04/2024	08/04/2024	08/04/2024
Naphthalene	µg/L	0.020	<0.020	<0.020	<0.020
Acenaphthylene	µg/L	0.010	<0.010	<0.010	<0.010
Acenaphthene	µg/L	0.010	<0.010	<0.010	<0.010
Fluorene	µg/L	0.010	<0.010	<0.010	<0.010
Phenanthrene	µg/L	0.010	<0.010	<0.010	<0.010
Anthracene	µg/L	0.010	<0.010	<0.010	<0.010
Fluoranthene	µg/L	0.010	<0.010	<0.010	<0.010
Pyrene	µg/L	0.010	<0.010	<0.010	<0.010
Benzo(a)anthracene	µg/L	0.010	<0.010	<0.010	<0.010
Chrysene	µg/L	0.010	<0.010	<0.010	<0.010
Benzo(b,j,k)fluoranthene	µg/L	0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene	µg/L	0.010	<0.010	<0.010	<0.010
Dibenzo(a,h)anthracene	µg/L	0.010	<0.010	<0.010	<0.010
Benzo(g,h,i)perylene	µg/L	0.010	<0.010	<0.010	<0.010
Total +ve PAH	µg/L	0.010	<0.010	<0.010	<0.010
Surrogate p-Terphenyl-D14	%		*80.5*	*92.1*	*94.9*

Certificate of Analysis PFD0586

Polychlorinated Biphenyls - Trace Level (Water)

Envirolab ID	Units	PQL	PFD0586-01	PFD0586-02	PFD0586-03
Your Reference			Outlet	Point 2	B Ramp
Date Sampled			08/04/2024	08/04/2024	08/04/2024
PCB C28	µg/L	0.0010	<0.0010	<0.0010	<0.0010
PCB C52	µg/L	0.0010	<0.0010	<0.0010	<0.0010
PCB C101	µg/L	0.00050	<0.00050	<0.00050	<0.00050
PCB C118	µg/L	0.00050	<0.00050	<0.00050	<0.00050
PCB C138	µg/L	0.00050	<0.00050	<0.00050	<0.00050
PCB C153	µg/L	0.00050	<0.00050	<0.00050	<0.00050
PCB C180	µg/L	0.00050	<0.00050	<0.00050	<0.00050
Surrogate 2-Fluorobiphenyl	%		*122*	*115*	*114*

Certificate of Analysis PFD0586

Inorganics - Nutrients (Water) - Analysed By Envirolab Services Sydney

Envirolab ID	Units	PQL	PFD0586-01	PFD0586-02	PFD0586-03
Your Reference			Outlet	Point 2	B Ramp
Date Sampled			08/04/2024	08/04/2024	08/04/2024
Chlorophyll a	mg/m3	1.0	2.1	34	6.4

Certificate of Analysis PFD0586

PFAS Short List (Water) - Analysed By Envirolab Services Sydney

Envirolab ID	Units	PQL	PFD0586-01	PFD0586-02	PFD0586-03
Your Reference			Outlet	Point 2	B Ramp
Date Sampled			08/04/2024	08/04/2024	08/04/2024
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.010	<0.010	<0.010	<0.010
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.010	<0.010	<0.010	<0.010
Perfluorooctanoic acid (PFOA)	µg/L	0.010	<0.010	<0.010	<0.010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.010	<0.010	<0.010	<0.010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.020	<0.020	<0.020	<0.020
Surrogate 13C8 PFOS	%		*97.6*	*103*	*104*
Surrogate 13C2 PFOA	%		*91.8*	*100*	*106*
Total +ve PFOA+PFOS	µg/L	0.010	<0.010	<0.010	<0.010
Total +ve PFAS	µg/L	0.010	<0.010	<0.010	<0.010
Total +ve PFHxS+PFOS	µg/L	0.010	<0.010	<0.010	<0.010
Extraction Internal Standard 18O2 PFHxS	%		*92.7*	*94.6*	*97.0*
Extraction Internal Standard 13C4 PFOS	%		*100*	*95.3*	*95.4*
Extraction Internal Standard 13C4 PFOA	%		*101*	*97.4*	*97.9*
Extraction Internal Standard 13C2 6:2FTS	%		*82.6*	*87.7*	*83.3*
Extraction Internal Standard 13C2 8:2FTS	%		*93.5*	*105*	*108*

Dioxins/Furans (Water)

Envirolab ID: PFD0586-01 **Date Sampled:** 08/04/2024

Client ID: Outlet

Analyte	PQL	Units	Result						
2,3,7,8-TCDD	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*2.5*	*5.0*	*1*	*0.0*	*2.5*	*5.0*	*107%*
1,2,3,7,8-PeCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*10*	*20*	*0.5*	*0.0*	*5.0*	*10*	*117%*
1,2,3,4,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*118%*
1,2,3,6,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*113%*
1,2,3,7,8,9-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	-
1,2,3,4,6,7,8-HpCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*103%*
OCDD	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	*108%*
2,3,7,8-TCDF	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*0.25*	*0.50*	*0.1*	*0.0*	*0.25*	*0.50*	*105%*
1,2,3,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.03	*0.0*	*0.30*	*0.60*	*0.05*	*0.0*	*0.50*	*1.0*	*112%*
2,3,4,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.3	*0.0*	*3.0*	*6.0*	*0.5*	*0.0*	*5.0*	*10*	*113%*
1,2,3,4,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*111%*
1,2,3,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*117%*
1,2,3,7,8,9-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*104%*
2,3,4,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*121%*
1,2,3,4,6,7,8-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*107%*
1,2,3,4,7,8,9-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*110%*
OCDF	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	-

Certificate of Analysis PFD0586

Envirolab ID:	PFD0586-02	**Date Sampled:**	08/04/2024
Client ID:	Point 2		

Analyte	PQL	Units	Result						
2,3,7,8-TCDD	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*2.5*	*5.0*	*1*	*0.0*	*2.5*	*5.0*	*106%*
1,2,3,7,8-PeCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*10*	*20*	*0.5*	*0.0*	*5.0*	*10*	*119%*
1,2,3,4,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*135%*
1,2,3,6,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*109%*
1,2,3,7,8,9-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	-
1,2,3,4,6,7,8-HpCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*115%*
OCDD	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	*123%*
2,3,7,8-TCDF	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*0.25*	*0.50*	*0.1*	*0.0*	*0.25*	*0.50*	*102%*
1,2,3,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.03	*0.0*	*0.30*	*0.60*	*0.05*	*0.0*	*0.50*	*1.0*	*115%*
2,3,4,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.3	*0.0*	*3.0*	*6.0*	*0.5*	*0.0*	*5.0*	*10*	*116%*
1,2,3,4,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*139%*
1,2,3,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*128%*
1,2,3,7,8,9-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*116%*
2,3,4,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*134%*
1,2,3,4,6,7,8-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*122%*
1,2,3,4,7,8,9-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*125%*
OCDF	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	-

Certificate of Analysis PFD0586

Envirolab ID:	PFD0586-03	**Date Sampled:**	08/04/2024
Client ID:	B Ramp		

Analyte	PQL	Units	Result						
2,3,7,8-TCDD	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*2.5*	*5.0*	*1*	*0.0*	*2.5*	*5.0*	*109%*
1,2,3,7,8-PeCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	1	*0.0*	*10*	*20*	*0.5*	*0.0*	*5.0*	*10*	*107%*
1,2,3,4,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*125%*
1,2,3,6,7,8-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*116%*
1,2,3,7,8,9-HxCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	-
1,2,3,4,6,7,8-HpCDD	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*108%*
OCDD	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	*114%*
2,3,7,8-TCDF	5.00	pg/L	<5.0						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*0.25*	*0.50*	*0.1*	*0.0*	*0.25*	*0.50*	*105%*
1,2,3,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.03	*0.0*	*0.30*	*0.60*	*0.05*	*0.0*	*0.50*	*1.0*	*113%*
2,3,4,7,8-PeCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.3	*0.0*	*3.0*	*6.0*	*0.5*	*0.0*	*5.0*	*10*	*115%*
1,2,3,4,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*118%*
1,2,3,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*119%*
1,2,3,7,8,9-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*108%*
2,3,4,6,7,8-HxCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.1	*0.0*	*1.0*	*2.0*	*0.1*	*0.0*	*1.0*	*2.0*	*115%*
1,2,3,4,6,7,8-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*112%*
1,2,3,4,7,8,9-HpCDF	20.00	pg/L	<20						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.01	*0.0*	*0.10*	*0.20*	*0.01*	*0.0*	*0.10*	*0.20*	*116%*
OCDF	50.00	pg/L	<50						
	WHO-TEF	*WHO-TEQ1*	*WHO-TEQ2*	*WHO-TEQ3*	*I-TEF*	*I-TEQ1*	*I-TEQ2*	*I-TEQ3*	*Recovery*
	0.0003	*0.0*	*0.0075*	*0.015*	*0.001*	*0.0*	*0.025*	*0.050*	-

Method Summary

Method ID	Methodology Summary
INORG-119	Chlorophyll A based on APHA 10200 H latest edition.
ORG-025	Determination of semi-volatile organic compounds (SVOCs) by GC-MS-MS. Water samples are extracted by LLE and soils/solids using DCM/Acetone/Methanol.
ORG-025_DIOXIN	Water samples are extracted with DCM and concentrated. The extract is analysed by GC-MSMS for Dioxin and Furans. Soils and Sorbents are solvent extracted, followed by clean-up and GC-MSMS analysis. 1. I -TEQ(zero) and WHO-TEQ(zero) calculated where analyte components that are <PQL are considered to be zero in the TEQ calculation. Where all sample analyte results are <PQL, the calculated sample TEQ = 0, this is due to the calculation being an arithmetic formula and therefore does not reflect the associated PQLs. 2. I -TEQ(0.5) and WHO-TEQ(0.5) calculated where analyte components that are <PQL are considered to be 0.5 * the component PQL in the TEQ calculation. 3. I-TEQ(PQL) and WHO-TEQ(PQL) calculated where analyte components that are <PQL are considered to be equal to the component PQL in the TEQ calculation. 13C12 Rec is the recovery of Isotopically labelled compound added by the Laboratory for quantification and to measure extraction efficiency. I-TEF - International toxic equivalency factor I-TEQ - International toxic equivalence WHO-TEF - World Health Organisation toxic equivalency factor WHO-TEQ - World Health Organisation toxic equivalence TEQ values are rounded to the same number of significant figures as the raw results for consistency and therefore may not calculate out exactly as PQL * TEF, given rounded up or down as appropriate.
ORG-025_PAH	Determination of semi-volatile organic compounds (SVOCs) by GC-MS-MS. Water samples are extracted by LLE and solids using DCM/Acetone/Methanol. For PAHs:- Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, for Total +ve calculations, the PQL is reflective of the lowest individual PQL and therefore, for example, "Total +ve PAHs" is simply a sum of the positive individual PAHs.
ORG-029	Soil/solid and sorbent samples are extracted with basified Methanol. Waters and soil/sorbent extracts are directly injected and/or concentrated/extracted using SPE. TCLP/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MSMS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

Surrogate Spike

Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

LCS (Laboratory Control Sample)

This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Matrix Spike

A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary PFD0586

Client Details

Client	Harvey Water
Your Reference	Harvey Fresh HF
Date Issued	22/04/2024

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	Yes	No Outliers
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	No	QC Frequency Outliers Exist - See detailed list below

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary PFD0586

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
PAH TR | Water	1-3	08/04/2024	11/04/2024	12/04/2024	Yes
PCB Congeners | Water	1, 3	08/04/2024	12/04/2024	15/04/2024	Yes
	2	08/04/2024	12/04/2024	16/04/2024	Yes
1,2,3,4,6,7,8-HpCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,4,6,7,8-HpCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,4,7,8,9-HpCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,4,7,8-HxCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,4,7,8-HxCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,6,7,8-HxCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,6,7,8-HXCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,7,8,9-HxCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,7,8,9-HxCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,7,8-PeCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
1,2,3,7,8-PeCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
2,3,4,6,7,8-HxCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
2,3,4,7,8-PeCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
2,3,7,8-TCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
2,3,7,8-TCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
OCDD | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
OCDF | Water	1, 3	08/04/2024	15/04/2024	19/04/2024	Yes
	2	08/04/2024	15/04/2024	20/04/2024	Yes
Chlorophyll a | Water	1-3	08/04/2024	09/04/2024	16/04/2024	Yes
PFAS - ISTD (Short) | Water	1-3	08/04/2024	12/04/2024	12/04/2024	Yes
PFAS-Short | Water	1-3	08/04/2024	12/04/2024	12/04/2024	Yes

Data Quality Assessment Summary PFD0586

Outliers: QC Frequency

INORG-119|Inorganics - Nutrients (Water)| Batch BFD1540

Analysis	QC Type	Expected	Reported
Chlorophyll a	Duplicate	1	0

ORG-025|Polychlorinated Biphenyls - Trace Level (Water)| Batch BFD1417

Analysis	QC Type	Expected	Reported
PCB Congeners	Duplicate	1	0
	Matrix Spike	1	0

ORG-029|PFAS Short List (Water)| Batch BFD1701

Analysis	QC Type	Expected	Reported
PFAS - ISTD (Short)	Matrix Spike	1	0
PFAS-Short	Matrix Spike	1	0

Quality Control PFD0586

ORG-025_PAH|Polycyclic Aromatic Hydrocarbons - Trace Level (Water) | Batch BFD1238

Analyte	Units	PQL	Blank	DUP1 PFD0586-01 Samp | QC | RPD %	LCS %	Spike % PFD0586-02
Naphthalene	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	100	83.4
Acenaphthylene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Acenaphthene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Fluorene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	106	93.2
Phenanthrene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	93.5	87.9
Anthracene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Fluoranthene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	101	90.5
Pyrene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	101	91.3
Benzo(a)anthracene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Chrysene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	98.4	85.8
Benzo(b,j,k)fluoranthene	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	[NA]	[NA]
Benzo(a)pyrene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	95.5	90.8
Indeno(1,2,3-c,d)pyrene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Dibenzo(a,h)anthracene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Benzo(g,h,i)perylene	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	[NA]	[NA]
Surrogate p-Terphenyl-D14	*%*		*80.6*	*80.5 | 106*	*102*	*86.6*

ORG-025|Polychlorinated Biphenyls - Trace Level (Water) | Batch BFD1417

Analyte	Units	PQL	Blank	LCS %
PCB C28	µg/L	0.0010	<0.0010	[NA]
PCB C52	µg/L	0.0010	<0.0010	[NA]
PCB C101	µg/L	0.00050	<0.00050	[NA]
PCB C103	µg/L			118
PCB C118	µg/L	0.00050	<0.00050	[NA]
PCB C138	µg/L	0.00050	<0.00050	[NA]
PCB C153	µg/L	0.00050	<0.00050	[NA]
PCB C180	µg/L	0.00050	<0.00050	[NA]
Surrogate 2-Fluorobiphenyl	*%*		*102*	*104*

Quality Control PFD0586

ORG-025_DIOXIN|Dioxins/Furans (Water) | Batch BFD1589

Quality Control PFD0586

ORG-025_DIOXIN|Dioxins/Furans (Water) | Batch BFD1589

Analyte	Units	PQL	Blank	DUP1 BFD1589-DUP1# Samp | QC | RPD %	LCS %	Spike % BFD1589-MS1#
2,3,7,8-TCDD	pg/L	5.0	<5.0	<5.0 | <5.0 | [NA]	92.4	95.9
Surrogate 13C-2,3,7,8-TCDD	*%*		*109*	*102 / 112*	*86.1*	*107*
2,3,7,8-TCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,7,8-TCDD WHO-TEQ2	pg/L		2.50	2.50 | 2.50 | 0.00	[NA]	[NA]
2,3,7,8-TCDD WHO-TEQ3	pg/L		5.00	5.00 | 5.00 | 0.00	[NA]	[NA]
2,3,7,8-TCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,7,8-TCDD I-TEQ2	pg/L		2.50	2.50 | 2.50 | 0.00	[NA]	[NA]
2,3,7,8-TCDD I-TEQ3	pg/L		5.00	5.00 | 5.00 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDD	pg/L	20	<20	<20 | <20 | [NA]	105	81.8
Surrogate 13C-1,2,3,7,8-PeCDD	*%*		*107*	*94.8 / 109*	*83.5*	*102*
1,2,3,7,8-PeCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8-PeCDD WHO-TEQ2	pg/L		10.0	10.0 | 10.0 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDD WHO-TEQ3	pg/L		20.0	20.0 | 20.0 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8-PeCDD I-TEQ2	pg/L		5.00	5.00 | 5.00 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDD I-TEQ3	pg/L		10.0	10.0 | 10.0 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDD	pg/L	20	<20	<20 | <20 | [NA]	106	71.2
Surrogate 13C-1,2,3,4,7,8-HxCDD	*%*		*112*	*99.5 / 115*	*90.9*	*112*
1,2,3,4,7,8-HxCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8-HxCDD WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDD WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8-HxCDD I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDD I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDD	pg/L	20	<20	<20 | <20 | [NA]	107	88.4
Surrogate 13C-1,2,3,6,7,8-HxCDD	*%*		*107*	*88.9 / 110*	*81.1*	*92.8*
1,2,3,6,7,8-HxCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,6,7,8-HxCDD WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDD WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,6,7,8-HxCDD I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDD I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDD	pg/L	20	<20	<20 | <20 | [NA]	112	84.5
1,2,3,7,8,9-HxCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8,9-HxCDD WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDD WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8,9-HxCDD I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDD I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD	pg/L	20	<20	<20 | <20 | [NA]	112	80.1
Surrogate 13C-1,2,3,4,6,7,8-HpCDD	*%*		*105*	*104 / 120*	*83.6*	*103*
1,2,3,4,6,7,8-HpCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD WHO-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD WHO-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD I-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDD I-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
OCDD	pg/L	50	<50	<50 | <50 | [NA]	116	79.8
Surrogate 13C-OCDD	*%*		*105*	*84.0 / 105*	*81.6*	*105*
OCDD WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
OCDD WHO-TEQ2	pg/L		0.00750	0.00750 | 0.00750 | 0.00	[NA]	[NA]
OCDD WHO-TEQ3	pg/L		0.0150	0.0150 | 0.0150 | 0.00	[NA]	[NA]
OCDD I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
OCDD I-TEQ2	pg/L		0.0250	0.0250 | 0.0250 | 0.00	[NA]	[NA]
OCDD I-TEQ3	pg/L		0.0500	0.0500 | 0.0500 | 0.00	[NA]	[NA]
2,3,7,8-TCDF	pg/L	5.0	<5.0	<5.0 | <5.0 | [NA]	103	89.1
Surrogate 13C-2,3,7,8-TCDF	*%*		*108*	*101 / 119*	*83.1*	*104*

Quality Control PFD0586

ORG-025_DIOXIN|Dioxins/Furans (Water) | Batch BFD1589

Analyte	Units	PQL	Blank	DUP1 BFD1589-DUP1# Samp | QC | RPD %	LCS %	Spike % BFD1589-MS1#
2,3,7,8-TCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,7,8-TCDF WHO-TEQ2	pg/L		0.250	0.250 | 0.250 | 0.00	[NA]	[NA]
2,3,7,8-TCDF WHO-TEQ3	pg/L		0.500	0.500 | 0.500 | 0.00	[NA]	[NA]
2,3,7,8-TCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,7,8-TCDF I-TEQ2	pg/L		0.250	0.250 | 0.250 | 0.00	[NA]	[NA]
2,3,7,8-TCDF I-TEQ3	pg/L		0.500	0.500 | 0.500 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDF	pg/L	20	<20	<20 | <20 | [NA]	105	80.8
Surrogate 13C-1,2,3,7,8-PeCDF	%		*107*	*93.8 | 113*	*84.8*	*105*
1,2,3,7,8-PeCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8-PeCDF WHO-TEQ2	pg/L		0.300	0.300 | 0.300 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDF WHO-TEQ3	pg/L		0.600	0.600 | 0.600 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8-PeCDF I-TEQ2	pg/L		0.500	0.500 | 0.500 | 0.00	[NA]	[NA]
1,2,3,7,8-PeCDF I-TEQ3	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
2,3,4,7,8-PeCDF	pg/L	20	<20	<20 | <20 | [NA]	107	83.0
Surrogate 13C-2,3,4,7,8-PeCDF	%		*108*	*95.0 | 112*	*82.1*	*103*
2,3,4,7,8-PeCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,4,7,8-PeCDF WHO-TEQ2	pg/L		3.00	3.00 | 3.00 | 0.00	[NA]	[NA]
2,3,4,7,8-PeCDF WHO-TEQ3	pg/L		6.00	6.00 | 6.00 | 0.00	[NA]	[NA]
2,3,4,7,8-PeCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,4,7,8-PeCDF I-TEQ2	pg/L		5.00	5.00 | 5.00 | 0.00	[NA]	[NA]
2,3,4,7,8-PeCDF I-TEQ3	pg/L		10.0	10.0 | 10.0 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDF	pg/L	20	<20	<20 | <20 | [NA]	110	77.6
Surrogate 13C-1,2,3,4,7,8-HxCDF	%		*111*	*94.5 | 109*	*84.3*	*103*
1,2,3,4,7,8-HxCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8-HxCDF WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDF WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8-HxCDF I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,4,7,8-HxCDF I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDF	pg/L	20	<20	<20 | <20 | [NA]	108	84.8
Surrogate 13C-1,2,3,6,7,8-HxCDF	%		*109*	*89.7 | 112*	*84.8*	*97.9*
1,2,3,6,7,8-HxCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,6,7,8-HxCDF WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDF WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,6,7,8-HxCDF I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,6,7,8-HxCDF I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDF	pg/L	20	<20	<20 | <20 | [NA]	109	80.3
Surrogate 13C-1,2,3,7,8,9-HxCDF	%		*102*	*94.0 | 115*	*80.5*	*92.9*
1,2,3,7,8,9-HxCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8,9-HxCDF WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDF WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,7,8,9-HxCDF I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
1,2,3,7,8,9-HxCDF I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
2,3,4,6,7,8-HxCDF	pg/L	20	<20	<20 | <20 | [NA]	103	78.0
Surrogate 13C-2,3,4,6,7,8-HxCDF	%		*109*	*91.2 | 110*	*88.2*	*103*
2,3,4,6,7,8-HxCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,4,6,7,8-HxCDF WHO-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
2,3,4,6,7,8-HxCDF WHO-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
2,3,4,6,7,8-HxCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
2,3,4,6,7,8-HxCDF I-TEQ2	pg/L		1.00	1.00 | 1.00 | 0.00	[NA]	[NA]
2,3,4,6,7,8-HxCDF I-TEQ3	pg/L		2.00	2.00 | 2.00 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDF	pg/L	20	<20	<20 | <20 | [NA]	112	78.4
Surrogate 13C-1,2,3,4,6,7,8-HpCDF	%		*106*	*90.3 | 116*	*82.6*	*101*
1,2,3,4,6,7,8-HpCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]

Quality Control PFD0586

ORG-025_DIOXIN | Dioxins/Furans (Water) | Batch BFD1589

Analyte	Units	PQL	Blank	DUP1 BFD1589-DUP1# Samp | QC | RPD %	LCS %	Spike % BFD1589-MS1#
1,2,3,4,6,7,8-HpCDF WHO-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDF WHO-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,6,7,8-HpCDF I-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,6,7,8-HpCDF I-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF	pg/L	20	<20	<20 | <20 | [NA]	112	79.5
Surrogate 13C-1,2,3,4,7,8,9-HpCDF	*%*		*107*	*89.6 | 115*	*84.8*	*104*
1,2,3,4,7,8,9-HpCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF WHO-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF WHO-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF I-TEQ2	pg/L		0.100	0.100 | 0.100 | 0.00	[NA]	[NA]
1,2,3,4,7,8,9-HpCDF I-TEQ3	pg/L		0.200	0.200 | 0.200 | 0.00	[NA]	[NA]
OCDF	pg/L	50	<50	<50 | <50 | [NA]	116	80.6
OCDF WHO-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
OCDF WHO-TEQ2	pg/L		0.00750	0.00750 | 0.00750 | 0.00	[NA]	[NA]
OCDF WHO-TEQ3	pg/L		0.0150	0.0150 | 0.0150 | 0.00	[NA]	[NA]
OCDF I-TEQ1	pg/L		0.00	0.00 | 0.00 | [NA]	[NA]	[NA]
OCDF I-TEQ2	pg/L		0.0250	0.0250 | 0.0250 | 0.00	[NA]	[NA]
OCDF I-TEQ3	pg/L		0.0500	0.0500 | 0.0500 | 0.00	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-119 | Inorganics - Nutrients (Water) | Batch BFD1540

Analyte	Units	PQL	Blank	LCS %
Chlorophyll a	mg/m3	1.0	<1.0	96.1

ORG-029 | PFAS Short List (Water) | Batch BFD1701

Analyte	Units	PQL	Blank	DUP1 PFD0586-01 Samp | QC | RPD %	LCS %
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	109
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	111
Perfluorooctanoic acid (PFOA)	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	110
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.010	<0.010	<0.010 | <0.010 | [NA]	107
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.020	<0.020	<0.020 | <0.020 | [NA]	105
Surrogate 13C8 PFOS	*%*		*105*	*97.6 | 99.6*	*104*
Surrogate 13C2 PFOA	*%*		*104*	*91.8 | 93.7*	*92.8*
Extraction Internal Standard 18O2 PFHxS	*%*		*96.4*	*92.7 | 94.7 | 2.12*	*[NA]*
Extraction Internal Standard 13C4 PFOS	*%*		*96.7*	*100 | 99.5 | 0.671*	*[NA]*
Extraction Internal Standard 13C4 PFOA	*%*		*94.1*	*101 | 97.2 | 3.99*	*[NA]*
Extraction Internal Standard 13C2 6:2FTS	*%*		*89.4*	*82.6 | 85.0 | 2.82*	*[NA]*
Extraction Internal Standard 13C2 8:2FTS	*%*		*116*	*93.5 | 115 | 20.6*	*[NA]*