



## ANALYSIS REPORT

<b>Client:</b>	Cawthron Institute (Nelson)	<b>Lab No:</b>	1825352	SPv2
<b>Contact:</b>	Maria Charry C/- Cawthron Institute (Nelson) Private Bag 2 Nelson Mail Centre Nelson 7042	<b>Date Received:</b>	15-Aug-2017	
		<b>Date Reported:</b>	15-Sep-2017	
		<b>Quote No:</b>	86159	
		<b>Order No:</b>		
		<b>Client Reference:</b>		
		<b>Submitted By:</b>	Maria Charry	

### Sample Type: Saline

Sample Name:	EHUM (8,14/8/17)	EWAI (8,11/8/17)	EOLD (8,11/8/17)	ELUHUM 08-Aug-2017 3:30 pm	ELUOLD 08-Aug-2017 4:00 pm
<b>Lab Number:</b>	1825352.4	1825352.5	1825352.6	1825352.7	1825352.8

#### Individual Tests

Test	Unit	EHUM (8,14/8/17)	EWAI (8,11/8/17)	EOLD (8,11/8/17)	ELUHUM 08-Aug-2017 3:30 pm	ELUOLD 08-Aug-2017 4:00 pm
Dissolved Arsenic*	g/m <sup>3</sup>	< 0.004	< 0.004	< 0.004	-	-
Dissolved Cadmium*	g/m <sup>3</sup>	< 0.0002	0.0005	< 0.0002	-	-
Dissolved Copper*	g/m <sup>3</sup>	< 0.0010	0.0083	< 0.0010	-	-
Dissolved Lead*	g/m <sup>3</sup>	0.0041	0.0040	0.0053	-	-
Dissolved Zinc*	g/m <sup>3</sup>	0.075	0.033	0.059	-	-
Total Ammoniacal-N	g/m <sup>3</sup>	-	-	-	1.17	0.96
Non-Purgeable Organic Carbon (NPOC)*	g/m <sup>3</sup>	3.5	2.5	3.8	-	-

#### Polycyclic Aromatic Hydrocarbons Trace in Water, By Liq/Liq

Test	Unit	EHUM (8,14/8/17)	EWAI (8,11/8/17)	EOLD (8,11/8/17)	ELUHUM 08-Aug-2017 3:30 pm	ELUOLD 08-Aug-2017 4:00 pm
Acenaphthene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Acenaphthylene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Anthracene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Benzo[a]anthracene*	g/m <sup>3</sup>	0.000008	< 0.00002	< 0.000014	-	-
Benzo[a]pyrene (BAP)*	g/m <sup>3</sup>	0.000008	< 0.00002	< 0.000014	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Benzo[g,h,i]perylene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Benzo[k]fluoranthene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Chrysene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Dibenzo[a,h]anthracene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Fluoranthene*	g/m <sup>3</sup>	0.000009	< 0.00002	< 0.000014	-	-
Fluorene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Indeno(1,2,3-c,d)pyrene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Naphthalene*	g/m <sup>3</sup>	< 0.00004	< 0.00010	< 0.00007	-	-
Phenanthrene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-
Pyrene*	g/m <sup>3</sup>	< 0.000008	< 0.00002	< 0.000014	-	-

<b>Sample Name:</b>	ELUWAI 08-Aug-2017 4:15 pm				
<b>Lab Number:</b>	1825352.9				

#### Individual Tests

Test	Unit	ELUWAI 08-Aug-2017 4:15 pm	EHUM (8,14/8/17)	EWAI (8,11/8/17)	EOLD (8,11/8/17)	ELUHUM 08-Aug-2017 3:30 pm	ELUOLD 08-Aug-2017 4:00 pm
Total Ammoniacal-N	g/m <sup>3</sup>	0.76	-	-	-	-	-

### Sample Type: Sediment



Sample Type: Sediment					
<b>Sample Name:</b>	SHUM	SWAI	SOLD		
	14-Aug-2017 1:00 pm	14-Aug-2017 1:15 pm	14-Aug-2017 1:10 pm		
<b>Lab Number:</b>	1825352.1	1825352.2	1825352.3		
Individual Tests					
Dry Matter	g/100g as rcvd	79	56	76	-
Ammonium-N*	mg/kg dry wt	2.9	5.7	22	-
Total Organic Carbon*	g/100g dry wt	0.42	1.45	0.43	-

## SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Saline			
Test	Method Description	Default Detection Limit	Sample No
Polycyclic Aromatic Hydrocarbons Trace in Water, By Liq/Liq*	Liquid / liquid extraction, SPE (if required), GC-MS SIM analysis [KBIs:4736,2695] Analysis performed at 1 Clyde Street, Hamilton	0.000005 g/m <sup>3</sup>	4-6
Dissolved Arsenic*	Filtered sample, ICP-MS with dynamic reaction cell, ultratrace. Analysed at 1 Clyde Street, Hamilton. APHA 3125 B 22 <sup>nd</sup> ed. 2012.	0.004 g/m <sup>3</sup>	4-6
Dissolved Cadmium*	Filtered sample, ICP-MS, ultratrace level. Analysed at 1 Clyde Street, Hamilton. APHA 3125 B 22 <sup>nd</sup> ed. 2012.	0.0002 g/m <sup>3</sup>	4-6
Dissolved Copper*	Filtered sample, ICP-MS, ultratrace. Analysed at 1 Clyde Street, Hamilton. APHA 3125 B 22 <sup>nd</sup> ed. 2012.	0.0010 g/m <sup>3</sup>	4-6
Dissolved Lead*	Filtered sample, ICP-MS, ultratrace level. Analysed at 1 Clyde Street, Hamilton. APHA 3125 B 22 <sup>nd</sup> ed. 2012.	0.0010 g/m <sup>3</sup>	4-6
Dissolved Zinc*	Filtered sample, ICP-MS with dynamic reaction cell, ultratrace. Analysed at 1 Clyde Street, Hamilton. APHA 3125 B 22 <sup>nd</sup> ed. 2012.	0.004 g/m <sup>3</sup>	4-6
Total Ammoniacal-N	Saline sample. Phenol/hypochlorite colorimetry. Flow injection analyser. (NH <sub>4</sub> -N = NH <sub>4</sub> <sup>+</sup> -N + NH <sub>3</sub> -N). Analysis performed at 1 Clyde Street, Hamilton. APHA 4500-NH <sub>3</sub> H 22 <sup>nd</sup> ed. 2012.	0.005 g/m <sup>3</sup>	7-9
Non-Purgeable Organic Carbon (NPOC)*	Acidification, purging to remove inorganic C, super-critical persulphate oxidation at 375°C, IR detection. Analysis performed at 1 Clyde Street, Hamilton. APHA 5310 C (modified) 22 <sup>nd</sup> ed. 2012.	0.3 g/m <sup>3</sup>	4-6

Sample Type: Sediment			
Test	Method Description	Default Detection Limit	Sample No
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%. Analysis performed at 1 Clyde Street, Hamilton.	-	1-3
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). Analysis performed at 1 Clyde Street, Hamilton. US EPA 3550.	0.10 g/100g as rcvd	1-3
2M KCl Extraction*	2M potassium chloride extraction of as received fraction for analysis of NH <sub>4</sub> N, NO <sub>2</sub> N and NO <sub>3</sub> N. Analyst, 109, 549, (1984).	-	1-3
Ammonium-N*	2M potassium chloride extraction on as received fraction. Phenol/hypochlorite colorimetry. Discrete Analyser. APHA 4500-NH <sub>3</sub> F (modified) 22 <sup>nd</sup> ed. 2012.	1.0 mg/kg dry wt	1-3
Total Organic Carbon*	Acid pretreatment to remove carbonates present followed by Catalytic Combustion (900°C, O <sub>2</sub> ), separation, Thermal Conductivity Detector [Elementar Analyser]. Analysed at 1 Clyde Street, Hamilton.	0.05 g/100g dry wt	1-3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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