Robert Carr & Associates Pty Ltd Trading as RCA Laboratories – Environmental
92 Hill Street PO Box 175, Carrington NSW 2294
ABN 53 063 515 711 Ph 02 4902 9200 – Fax 02 4902 9299
Email: administrator@rca.com.au Web www.rca.com.au

NATA Accredited Laboratory 9811
Corporate Site Number 18077
Accredited for compliance with ISO/IEC 17025-Testing

Ameropa Australia
107 Greenleaf Road
KOORAGANG ISLAND NSW 2304

Attention Mr Jeff Cameron

Project:	RCA ref 11923-1271/DDG/1		
Date:	19/03/2024		
Client reference:	Analysis of Depositional Dust		
Received date:	5/03/2024	**Number of samples:**	4
Client order number:	Not supplied	**Testing commenced:**	5/03/2024

CERTIFICATE OF ANALYSIS

1 ANALYTICAL TEST METHODS

ANALYSIS	METHOD	UNITS	ANALYSING LABORATORY	NATA ANALYSIS/ NON-NATA
Dust Depositional Gauge (DDG)	ENV-LAB004*****	g/m^2.month	RCA Laboratories - Environmental	NATA

***** The analytical procedures used by RCA Laboratories - Environmental are based on established internationally recognised procedures such as APHA and Australian Standards

2 RESULTS

ANALYSIS	UNITS	11923-D1	11923-D2	11923-D3	11923-D4
Depositional Dust Gauge (DDG)					
Sample Number		022411923001	022411923002	022411923003	022411923004
Date sample started	-	5/02/2024	5/02/2024	5/02/2024	5/02/2024
Date sample finished	-	4/03/2024	4/03/2024	4/03/2024	4/03/2024
Sampled By		TB	TB	TB	TB
Number of days	-	28	28	28	28
Notes	-	IT	IT	IT	IT
Insoluble solids	(g/m^2.month)	1.8	2.8	3.2	1.7
Ash	(g/m^2.month)	1.1	1.6	0.8	0.8
Combustible matter	(g/m^2.month)	0.7	1.2	2.4	0.9

Depositional Dust Gauge (DDG)

Depositional Dust Gauges at this facility do not conform to AS/NZS 3580.10.1:2016 and AS/NZS 3580.1.1:2016 due to Dust Gauge Position.

Note: Sampling and Analysis of Depositional Dust by RCA Laboratories - Environmental staff is covered under our NATA Scope of Accreditation.

Depositional Dust Gauge (DDG) Qualifier Codes

I = Insects (and spiders)
T = Tree Litter (eg. Twigs. Leaves, gumnuts)

3 QUALITY CONTROL RESULTS

Depositional Dust Gauge Quality Control

A blank crucible, containing no deposited matter, is analysed with every batch of 10 samples analysed. The acceptable mass difference between the first and second weighing of a blank crucible, at the indicated steps, in the analysis procedure is +/- 0.001g.

Blank Crucibles Analysis

METHOD STEP	PRE-DETERMINATION		DETERMINATION OF INSOLUBLE SOLIDS		DETERMINATION OF ASH AND COMBUSTIBLE MATTER	
	1st weighing	2nd weighing	1st weighing	2nd weighing	1st weighing	2nd weighing
Crucible No.	Mass of Crucible(g)	Mass of Crucible(g)	Mass of Crucible(g)	Mass of Crucible(g)	Mass of Crucible(g)	Mass of Crucible(g)
167	23.7158	23.7162	23.7162	23.7162	23.7162	23.7162

Please contact the undersigned if you have any queries.

Yours sincerely

Laura Schofield
Environmental Laboratory Manager
Robert Carr & Associates Pty Ltd Trading as
RCA Laboratories – Environmental
Approved Signatory

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RCA Internal Quality Review

General

1. Laboratory QC results for Method Blanks, Duplicates and Laboratory Control Samples are included in this QC report where applicable. Additional QC data available on request.
2. RCA QC Acceptance / Rejection Criteria are available on request.
3. Proficiency Trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
6. Samples were analysed on an 'as received' basis.
7. Sampled dates in this report are those listed on the COC or sample jars; if no sample dates are noted, the date the samples are received at the laboratory have been used.
8. All soil results are reported on a dry basis, unless otherwise stated. (ACID SULPHATE SOILS)
9. This report replaces any interim results previously issued.

Holding Times.

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample

Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these maybe outside the laboratory's control.

##NOTE: pH duplicates are reported as a range NOT as RPD

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.

2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.

3. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Glossary

UNITS

mg/kg: milligrams per Kilogram

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/L: milligrams per Litre

TERMS

Dry Where moisture has been determined on a solid sample the result is expressed on a dry basis.

LOR Limit of Reporting.

RPD Relative Percent Difference between two Duplicate pieces of analysis can be obtained upon request.

QCS Quality Control Sample - reported as value recovery

Method Blank In the case of solid samples these are performed on laboratory certified clean sands.

In the case of water samples these are performed on de-ionised water.

Duplicate A second piece of analysis from the same sample and reported in the same units as the result to show comparison.

Batch Duplicate A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.

USEPA United States Environment Protection Authority

APHA American Public Health Association

COC Chain of Custody

CP Client Parent - QC was performed on samples pertaining to this report

NCP Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

< indicates less than

> Indicates greater than

ND Not Detected

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NATA Accredited Laboratory 9811
Corporate Site Number 22072
Accredited for compliance with ISO/IEC 17025-Testing

Johnson Property Group
81 Trinity Point Drive- Marina Office
Morisset Park NSW 2264
Phone: 0 458 047 888

Analytical Report

Project: RCA ref 14302-759/Micro/0
Sample Received: 20/02/2024

Contact Name: Sean Hooper
Report Date: 21/02/2024

Results

Client ID		**Trinity Point Drive- Marina Office Water Samples**	
Date Sampled		**20/02/2024**	**20/02/2024**
Time Sampled		**9:40AM**	**9:47 AM**
Client ID		**Point A**	**Point C**
Laboratory ID	**Units**	**022414302001**	**022414302002**
Method: Thermotolerant Coliforms (AS 4276.5 – 2019)	**cfu/100 mL**	**77**	**52**

Tests Commenced on the Day of Receipt of Samples
The results stated in this report relate only to the sample(s) as Collected by RCA Laboratory Personnel– Sampling is covered by NATA Scope of Accreditation ENV-LAB063.Analysis is on as sampled basis.
Symbols Used:
< Less Than
> More Than
cfu Colony Forming Units
** Presumptive results
ND Not Detected

Neena Tewari
Microbiologist
B.Sc; M.Sc; Ph.D Microbiology

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Accredited for compliance with ISO/IEC 17025 - Testing

Johnson Property Group
81 Trinity Point Drive- Marina Office
Morisset Park NSW 2264

Attention: Sean Hooper

Project:	RCA ref 14302-759/Water/0		
Date:	18/03/2024		
Client reference:	Trinity Point		
Received date:	20/02/2024	**Number of samples:**	2
Client order number:	Not Supplied	**Testing commenced:**	20/02/2024

CERTIFICATE OF ANALYSIS

1 ANALYTICAL TEST METHODS

ANALYSIS	METHOD	UNITS	ANALYSING LABORATORY	NATA ANALYSIS / NON NATA	Measurement of Uncertainty Coverage Factor 2
Conductivity	ENV-LAB010	µS/cm	RCA Laboratories - Environmental	NATA	±1.32
pH	ENV-LAB006	pH	RCA Laboratories - Environmental	NATA	±0.54
Temperature**	ENV-LAB018	°C	RCA Laboratories – Environmental	NON-NATA	-
Total Suspended Solids	ENV-LAB009	mg/L	RCA Laboratories - Environmental	NATA	±6.41
Turbidity	ENV-LAB037	NTU	RCA Laboratories - Environmental	NATA	±4.88
Dissolved Oxygen**	ENV-PC040	%	RCA Laboratories - Environmental	NON-NATA	-
Dissolved Oxygen**	ENV-PC040	mg/L	RCA Laboratories - Environmental	NON-NATA	-
Oil & Grease**	ENV-LAB115	mg/L	RCA Laboratories – Environmental	NON-NATA	-

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****** Indicates NATA accreditation does not cover the performance of this service

2 RESULTS

ANALYSIS	UNITS	Point A	Point C
Water			
Sample Number	-	022414302001	022414302002
Date Sampled	-	20/02/2024	20/02/2024
Sampled By		SK	SK
Conductivity	µS/cm	53800	53200
pH	pH	8.10	8.13
Temperature**	°C	27.6	27.2
Turbidity	NTU	17.4	18.9
Dissolved Oxygen**	%	90.9	91.9
Dissolved Oxygen**	mg/L	5.9	5.9

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Water

NATA Scope of Accreditation covers the sampling of surface waters by RCA.

Please contact the undersigned if you have any queries.

Yours sincerely

Laura Schofield
Environmental Laboratory Manager
Robert Carr & Associates Pty Ltd Trading as
RCA Laboratories – Environmental
Approved Signatory

RCA Internal Quality Review

General

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< indicates less than

> Indicates greater than

ND Not Detected

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 344529

Client Details

Client	RCA Australia
Attention	Laura Schofield
Address	PO Box 175, Carrington, NSW, 2294

Sample Details

Your Reference	**14302 Trinity Point**
Number of Samples	2 Water
Date samples received	21/02/2024
Date completed instructions received	21/02/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	28/02/2024
Date of Issue	28/02/2024

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Hannah Nguyen, Metals Supervisor
Steven Luong, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date extracted	-	22/02/2024	22/02/2024
Date analysed	-	23/02/2024	23/02/2024
TRH C_6 - C_9	µg/L	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Naphthalene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	100	100
Surrogate Toluene-d8	%	97	99
Surrogate 4-Bromofluorobenzene	%	99	95

svTRH (C10-C40) in Water			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date extracted	-	22/02/2024	22/02/2024
Date analysed	-	23/02/2024	23/02/2024
TRH C_{10} - C_{14}	µg/L	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50
Surrogate o-Terphenyl	%	88	85

PAHs in Water			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date extracted	-	22/02/2024	22/02/2024
Date analysed	-	22/02/2024	22/02/2024
Naphthalene	µg/L	0.1	0.2
Acenaphthylene	µg/L	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5
Total +ve PAH's	µg/L	0.12	0.19
Surrogate p-Terphenyl-d14	%	104	99

HM in water - dissolved			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date prepared	-	23/02/2024	23/02/2024
Date analysed	-	23/02/2024	23/02/2024
Cadmium-Dissolved	µg/L	0.1	0.1
Chromium-Dissolved	µg/L	<1	<1
Copper-Dissolved	µg/L	2	2
Zinc-Dissolved	µg/L	14	24
Tin-Dissolved	µg/L	<1	<1

Miscellaneous Inorganics			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date prepared	-	21/02/2024	21/02/2024
Date analysed	-	21/02/2024	21/02/2024
Ammonia as N in water	mg/L	<0.005	<0.005
Total Nitrogen in water	mg/L	0.2	0.2

Metals in Waters - Acid extractable			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date prepared	-	22/02/2024	22/02/2024
Date analysed	-	22/02/2024	22/02/2024
Phosphorus - Total	mg/L	0.05	<0.1

Tributyl Tin in Water			
Our Reference		344529-1	344529-2
Your Reference	UNITS	Point A	Point C
Sample ID		022414302001	022414302002
Date Sampled		20/02/2024	20/02/2024
Type of sample		Water	Water
Date extracted	-	27/02/2024	27/02/2024
Date analysed	-	28/02/2024	28/02/2024
Tributyltin as Sn	µg/L	<0.002	<0.002
Surrogate Tripropyltin	%	128	136

Method ID	Methodology Summary
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Metals-020	Determination of various metals by ICP-AES.
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. Salt forms (e.g. FeO, PbO, ZnO) are determinined stoichiometrically from the base metal concentration.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
ORG-25	Determination of Organometallic Compounds by derivatisation and analysis by GC-MSMS.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/02/2024	1	22/02/2024	23/02/2024		22/02/2024	[NT]
Date analysed	-			23/02/2024	1	23/02/2024	26/02/2024		23/02/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	111	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	111	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	108	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	115	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	120	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	105	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	115	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	97	1	100	99	1	93	[NT]
Surrogate Toluene-d8	%		Org-023	100	1	97	98	1	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	99	1	99	98	1	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/02/2024	[NT]	[NT]	[NT]	[NT]	22/02/2024	[NT]
Date analysed	-			22/02/2024	[NT]	[NT]	[NT]	[NT]	22/02/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	83	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	80	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/02/2024	[NT]	[NT]	[NT]	[NT]	22/02/2024	[NT]
Date analysed	-			22/02/2024	[NT]	[NT]	[NT]	[NT]	22/02/2024	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	97	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date prepared	-			23/02/2024	[NT]	[NT]	[NT]	[NT]	23/02/2024	[NT]
Date analysed	-			23/02/2024	[NT]	[NT]	[NT]	[NT]	23/02/2024	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Tin-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			21/02/2024	[NT]	[NT]	[NT]	[NT]	21/02/2024	[NT]
Date analysed	-			21/02/2024	[NT]	[NT]	[NT]	[NT]	21/02/2024	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	[NT]	[NT]	[NT]	[NT]	103	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/02/2024	[NT]	[NT]	[NT]	[NT]	23/02/2024	[NT]
Date analysed	-			23/02/2024	[NT]	[NT]	[NT]	[NT]	23/02/2024	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: Tributyl Tin in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			27/02/2024	[NT]	[NT]	[NT]	[NT]	27/02/2024	[NT]
Date analysed	-			28/02/2024	[NT]	[NT]	[NT]	[NT]	28/02/2024	[NT]
Tributyltin as Sn	µg/L	0.002	ORG-25	<0.002	[NT]	[NT]	[NT]	[NT]	118	[NT]
Surrogate Tripropyltin	%		ORG-25	101	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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.
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.
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.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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.

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 QA/QC tables for details; <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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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 insufficient in order to satisfy laboratory QA/QC protocols.

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.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

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 and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Total metals: no unfiltered, preserved sample was received, therefore analysis was conducted from the unpreserved sample bottle. Note: there is a possibility some elements may be underestimated.

Phosphorus in Waters - total - The PQL has been raised 2 times for #2 due to suppression of the internal standard, which required the samples to be diluted. This is likely due to the high level of salts in the sample.

TBT in Water - No amber bottles were submitted for the analysis of samples 344529-1,2. Sampled from plastic bottles provided.