



## Environmental Forensics Report of Analysis Project 20230110

**Report #:** 1604  
**Date Issued:** 14-Apr-2023  
Page 1 of 10

**Client Project Reference: Pooncarie Water Quality**

Customer: Environmental Protection Agency

Attention: [Redacted]

Report Date: 14 April 2023

Project Received: 05 April 2023

EF Project Contact: [Redacted]  
[Redacted]  
[Redacted]

**The following samples were analysed:**

Sample ID	Client ID	Sample Type	Client Sampled Date/Time	Aliquot
232152	KR	Liquid	04/04/2023 11:00AM	
232154	KR	Liquid	04/04/2023 11:00AM	Field Aliquot
232155	KR	Liquid	04/04/2023 11:00AM	Field Aliquot
232156	KR	Liquid	04/04/2023 11:00AM	Field Aliquot
232157	KR	Liquid	04/04/2023 11:00AM	Field Aliquot
232153	PBK	Liquid	04/04/2023 12:20PM	
232158	PBK	Liquid	04/04/2023 12:20PM	Field Aliquot
232159	PBK	Liquid	04/04/2023 12:20PM	Field Aliquot
232160	PBK	Liquid	04/04/2023 12:20PM	Field Aliquot
232161	PBK	Liquid	04/04/2023 12:20PM	Field Aliquot

**Report Notes**

- This document has been authorised by the person whose name appears in this report.
- This report shall not be reproduced except in full. Samples analysed as received from the client.
- Results reported as 'less than' (<) indicates a result below the practical quantitation limit for the sample matrix and method used.
- Solid samples are reported on a dry weight basis and biota samples are reported on an as received basis unless specified otherwise.



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### Project Comments

·Samples 232155, 232159 were sent to Sydney Water Corporation (NATA Accreditation no: 63) for the analysis of MA70CENTI : Total Algal ID & Enumeration, Including ASU & Biovolumes; MA91 : Individual Species Total Count, Total BioVol, Total ASU; TC0049DWI : Algal Toxins; TC0061DWI : Paralytic Shellfish Toxins (PST) Analysis by UPLCMSMS.. This report summarises data from the attached external report: 282739, dated 13/04/2023.

·Samples 232155, 232159 were sent to Sydney Water Corporation (NATA Accreditation no: 610) for phytoplankton analysis. This report summarises data from the attached external report: 282739, dated 13/04/2023.

·Samples 232154,232156, 232158, 232160 were sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EK055G: Ammonia as N by Discrete Analyser, EK057G: Nitrite as N by Discrete Analyser, EK058G: Nitrate as N by Discrete Analyser, EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser, EK061G: Total Kjeldahl Nitrogen By Discrete Analyser, EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser, EK067G: Total Phosphorus as P by Discrete Analyser, EK071G: Reactive Phosphorus as P by discrete analyser, MW006: Faecal Coliforms & E.coli by MF, MW023: Enterococci by Membrane Filtration. This report summarises data from the attached external report: ES2311342, dated 12-Apr-2023.

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<b>Analysis Results - External Methods*</b>		<i>Sample ID</i>	232155	232159
<b>Area - EXTERNAL</b>		<i>Start Date</i>	13/04/2023	13/04/2023
		<i>Client ID</i>	KR	PBK
<i>Analyte</i>				
Algal Cell Count	-	RC	RC	
Algal Enumeration	-	RC	RC	
Algal Identification	-	RC	RC	

<b>Analysis Results - External Methods*</b>		<i>Sample ID</i>	232154	232158
<b>Area - EXTERNAL</b>		<i>Start Date</i>	5/04/2023	5/04/2023
		<i>Client ID</i>	KR	PBK
<i>Analyte</i>				
Enterococci	cfu/100mL	~5	~3	
Escherichia coli	cfu/100mL	27	18	
Faecal Coliforms	cfu/100mL	41	21	

<b>Analysis Results - External Methods*</b>		<i>Sample ID</i>	232156	232160
<b>Area - EXTERNAL</b>		<i>Start Date</i>	5/04/2023	5/04/2023
		<i>Client ID</i>	KR	PBK
<i>Analyte</i>				
^ Total Nitrogen as N	mg/L	2.3	2.2	
Ammonia as N	mg/L	<0.01	0.04	
Nitrate as N	mg/L	0.52	0.13	
Nitrite as N	mg/L	<0.01	0.07	
Nitrite+Nitrate as N	mg/L	0.52	0.20	
Reactive Phosphorus as P	mg/L	0.14	0.12	
Total Kjeldahl Nitrogen as N	mg/L	1.8	2.0	
Total Phosphorus as P	mg/L	0.37	0.36	

<b>Analysis Results - External Methods*</b>		<i>Sample ID</i>	232155	232159
<b>Area - EXTERNAL</b>		<i>Start Date</i>	5/04/2023	5/04/2023
		<i>Client ID</i>	KR	PBK
<i>Analyte</i>				
Algal Toxins	-	RC	RC	
ASP DSP Lipophilic Shellfish Toxin	-	RC	RC	

Tests not covered by NATA accreditation 3040 are denoted with \*

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**Analysis Results - ICVAASW**  
**Area - INORGANIC**

<i>Sample ID</i>	232157	232161
<i>Start Date</i>	6/04/2023	6/04/2023
<i>Client ID</i>	KR	PBK

<i>Analyte</i>			
Mercury	µg/L	<0,05	<0,05

**Analysis Results - ICPAES**  
**Area - INORGANIC**

<i>Sample ID</i>	232157	232161
<i>Start Date</i>	5/04/2023	5/04/2023
<i>Client ID</i>	KR	PBK

<i>Analyte</i>			
Aluminium (Lab, filtered)	mg/L	<0.04	<0.04
Barium (Lab, filtered)	mg/L	0,11	0,10
Boron (Lab, filtered)	mg/L	<0.1	<0.1
Calcium (Lab, filtered)	mg/L	30	29
Iron (Lab, filtered)	mg/L	<0,1	<0,1
Magnesium (Lab, filtered)	mg/L	15	14
Potassium (Lab, filtered)	mg/L	11	11
Sodium (Lab, filtered)	mg/L	41	39
Strontium (Lab, filtered)	mg/L	0.35	0.32
Sulfur (Lab, filtered)	mg/L	3,2	3,2
Titanium (Lab, filtered)	mg/L	<0.01	<0.01

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**Analysis Results - ICPMS**  
**Area - INORGANIC**

Sample ID	232157	232161
Start Date	5/04/2023	5/04/2023
Client ID	KR	PBK

Analyte		232157	232161
Antimony (Lab. filtered)	mg/L	<0,0005	<0,0005
Arsenic (Lab. filtered)	mg/L	0,005	0,005
Beryllium (Lab. filtered)	mg/L	<0,0001	<0,0001
Cadmium (Lab. filtered)	mg/L	<0,0001	<0,0001
Chromium (Lab. filtered)	mg/L	<0,001	<0,001
Cobalt (Lab. filtered)	mg/L	0,0003	0,0002
Copper (Lab. filtered)	mg/L	0,0018	0,0018
Lead (Lab. filtered)	mg/L	<0,0001	<0,0001
Lithium (Lab. filtered)	mg/L	0,0019	0,0018
Manganese (Lab. filtered)	mg/L	<0,001	<0,001
Molybdenum (Lab. filtered)	mg/L	0,0007	0,0005
Nickel (Lab. filtered)	mg/L	0,0031	0,0030
Selenium (Lab. filtered)	mg/L	<0,005	<0,005
Silver (Lab. filtered)	mg/L	<0,0001	<0,0001
Thallium (Lab. filtered)	mg/L	<0,0001	<0,0001
Tin (Lab. filtered)	mg/L	<0,0002	<0,0002
Vanadium (Lab. filtered)	mg/L	0,014	0,015
Zinc (Lab. filtered)	mg/L	0,001	<0,001

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**Analysis Results - ICPAES**

**Area - INORGANIC**

<i>Sample ID</i>	232157	232161
<i>Start Date</i>	5/04/2023	5/04/2023
<i>Client ID</i>	KR	PBK

**Analyte**

Analyte	Unit	232157	232161
Aluminium (acid extractable)	mg/L	5,7	5,3
Barium (acid extractable)	mg/L	0.15	0.14
Boron (acid extractable)	mg/L	<0,1	<0,1
Calcium (acid extractable)	mg/L	33	31
Iron (acid extractable)	mg/L	5,2	4,9
Magnesium (acid extractable)	mg/L	17	16
Manganese (acid extractable)	mg/L	0.17	0.13
Potassium (acid extractable)	mg/L	13	13
Sodium (acid extractable)	mg/L	42	40
Strontium (acid extractable)	mg/L	0,38	0,35
Sulfur (acid extractable)	mg/L	3,2	3,2
Titanium (acid extractable)	mg/L	0,05	0,04

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**Analysis Results - ICPMS**  
**Area - INORGANIC**

Sample ID	232157	232161
Start Date	5/04/2023	5/04/2023
Client ID	KR	PBK

**Analyte**

Analyte	Unit	232157	232161
Antimony (acid extractable)	mg/L	<0,0005	<0,0005
Arsenic (acid extractable)	mg/L	0,006	0,006
Beryllium (acid extractable)	mg/L	0,0002	0,0002
Cadmium (acid extractable)	mg/L	<0,0001	<0,0001
Chromium (acid extractable)	mg/L	0,008	0,007
Cobalt (acid extractable)	mg/L	0,0031	0,0026
Copper (acid extractable)	mg/L	0,0063	0,0060
Lead (acid extractable)	mg/L	0,0024	0,0022
Lithium (acid extractable)	mg/L	0,0038	0,0039
Molybdenum (acid extractable)	mg/L	0,0013	0,0013
Nickel (acid extractable)	mg/L	0,0085	0,0079
Selenium (acid extractable)	mg/L	<0,005	<0,005
Silver (acid extractable)	mg/L	<0,0001	<0,0001
Thallium (acid extractable)	mg/L	<0,0001	<0,0001
Tin (acid extractable)	mg/L	<0,0002	<0,0002
Vanadium (acid extractable)	mg/L	0,027	0,028
Zinc (acid extractable)	mg/L	0,012	0,012

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**Analysis Results - QQQPEST**  
**Area - ORGANIC**

Analyte	Sample ID Start Date Client ID	232152	232153
		5/04/2023 KR	5/04/2023 PBK
Aldrin	µg/L	<0,3	<0,3
Allethrin	µg/L	<0,5	<0,5
Alpha-Chlordane	µg/L	<0,4	<0,4
alpha-HCH	µg/L	<0,4	<0,4
Ametryn	µg/L	<0,5	<0,5
Atraton	µg/L	<0,5	<0,5
Atrazine	µg/L	<0,5	<0,5
beta-HCH	µg/L	<0,5	<0,5
Bifenthrin	µg/L	<0,5	<0,5
Bioresmethrin	µg/L	<0,3	<0,3
Carbophenothion	µg/L	<0,5	<0,5
Chlorpyrifos	µg/L	<0,4	<0,4
Cis-permethrin	µg/L	<0,3	<0,3
Crotoxypfos	µg/L	<0,5	<0,5
Cyfluthrin	µg/L	<0,5	<0,5
Cypermethrin	µg/L	<0,5	<0,5
DDD-p,p'	µg/L	<0,5	<0,5
DDE-p,p'	µg/L	<0,4	<0,4
DDT-p,p'	µg/L	<0,4	<0,4
delta-HCH	µg/L	<0,5	<0,5
Deltamethrin	µg/L	<0,5	<0,5
Diazinon	µg/L	<0,5	<0,5
Dichlorvos	µg/L	<0,4	<0,4
Dieldrin	µg/L	<0,5	<0,5
Dimethoate	µg/L	<0,5	<0,5
Endosulfan II	µg/L	<1,0	<1,0
Endosulfan I	µg/L	<0,9	<0,9
Endosulfan Sulfate	µg/L	<1,0	<1,0
Endrin Aldehyde	µg/L	<0,5	<0,5
Endrin Ketone	µg/L	<0,5	<0,5
Endrin	µg/L	<0,5	<0,5
Ethion	µg/L	<0,5	<0,5

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**Analysis Results - QQQPEST**

**Area - ORGANIC**

Analyte	Sample ID Start Date Client ID	232152	232153
		5/04/2023 KR	5/04/2023 PBK
Fenamiphos	µg/L	<0,5	<0,5
Fenitrothion	µg/L	<0,5	<0,5
Fenthion	µg/L	<0,4	<0,4
Fenvalerate	µg/L	<0,5	<0,5
Gamma-Chlordane	µg/L	<0,4	<0,4
gamma-HCH	µg/L	<0,4	<0,4
Heptachlor Epoxide	µg/L	<0,5	<0,5
Heptachlor	µg/L	<0,4	<0,4
Hexachlorobenzene	µg/L	<0,3	<0,3
Hexazinone	µg/L	<0,5	<0,5
L-cyhalothrin	µg/L	<0,5	<0,5
Malathion	µg/L	<0,5	<0,5
Methidathion	µg/L	<0,5	<0,5
Methoxychlor, p,p'	µg/L	<0,5	<0,5
Methyl Azinphos	µg/L	<0,4	<0,4
Methyl Chlorpyrifos	µg/L	<0,4	<0,4
Methyl Parathion	µg/L	<0,5	<0,5
Mevinphos	µg/L	<0,4	<0,4
Oxyfluorfen	µg/L	<0,5	<0,5
Parathion	µg/L	<0,5	<0,5
Phorate	µg/L	<0,4	<0,4
Profenofos	µg/L	<0,5	<0,5
Prometon	µg/L	<0,5	<0,5
Prometryn	µg/L	<0,5	<0,5
Propargite	µg/L	<0,5	<0,5
Propazine	µg/L	<0,5	<0,5
Propetamphos	µg/L	<0,5	<0,5
Simazine	µg/L	<0,5	<0,5
Simetryn	µg/L	<0,5	<0,5
Sulprofos	µg/L	<0,4	<0,4
Tebuconazole	µg/L	<0,5	<0,5
Tebuthiuron	µg/L	<0,5	<0,5

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**Analysis Results - QQPEST**

**Area - ORGANIC**

Sample ID	232152	232153
Start Date	5/04/2023	5/04/2023
Client ID	KR	PBK

Analyte	Unit	232152	232153
Terbutylazine	µg/L	<0.5	<0.5
Terbutryn	µg/L	<0.5	<0.5
Tetrachlorvinphos	µg/L	<0.5	<0.5
Trans-permethrin	µg/L	<0.7	<0.7

Sample ID	Client ID	Method	Start Date	Result
232152	KR	OLSCAN* - LC/MS Scan	11/04/2023	LC/MS scan for approximately 600 pesticides was negative. A list of analysed compounds can be provided on request. Note the list doesn't include glyphosate and quaternary ammonium herbicides (e.g. Paraquat and Diquat).
232153	PBK	OLSCAN* - LC/MS Scan	11/04/2023	LC/MS scan for approximately 600 pesticides was negative. A list of analysed compounds can be provided on request. Note the list doesn't include glyphosate and quaternary ammonium herbicides (e.g. Paraquat and Diquat).

**The sample(s) referred to in this report were analysed by the following method(s):**

Method code	Method description	Area
External Methods*	External Methods - Analysis completed externally	EXTERNAL
External Methods*	External Methods - Analysis completed externally	EXTERNAL
External Methods*	External Methods - Analysis completed externally	EXTERNAL
External Methods*	External Methods - Analysis completed externally	EXTERNAL
ICVAASW	Mercury by Cold Vapour Atomic Absorption Spectroscopy	INORGANIC
ICPAES	Dissolved element analysis by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICPAES)	INORGANIC
ICPMS	Dissolved Metals by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	INORGANIC
ICPAES	Acid extractable element analysis by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICPAES)	INORGANIC
ICPMS	Acid extractable Metals by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	INORGANIC
QQPEST	Determination of Multiresidue Pesticides by GCMSMS	ORGANIC
OLSCAN*	Qualitative LC/MS scan	ORGANIC

**The results in this report were authorised by:**

Name	Title	Area
[Redacted]	Senior Scientist	EXTERNAL
	Scientist	INORGANIC
	Scientist	ORGANIC

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