



Environmental Forensics Report of Analysis
Project 20230344

Report #: 1892
Date Issued: 22-Sep-2023
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Client Project Reference: Darling-Barka River Health 4 - 23 Au

Customer: Department of Planning & Environment

Attention: [REDACTED]

Report Date: 22 September 2023

Project Received: 24 August 2023

EF Project Contact: [REDACTED]
[REDACTED]
[REDACTED]



The following samples were analysed:

Sample ID	Client ID	Sample Type	Client Sampled Date/Time	Aliquot
237812	B4	Liquid	23/08/2023	
237820	B4	Liquid	23/08/2023	Field Aliquot
237827	B4	Liquid	23/08/2023	Field Aliquot
237813	E6	Liquid	23/08/2023	
237821	E6	Liquid	23/08/2023	Field Aliquot
237828	E6	Liquid	23/08/2023	Field Aliquot
237814	E6.5	Liquid	23/08/2023	
237822	E6.5	Liquid	23/08/2023	Field Aliquot
237829	E6.5	Liquid	23/08/2023	Field Aliquot
237815	E7	Liquid	23/08/2023	
237823	E7	Liquid	23/08/2023	Field Aliquot
237830	E7	Liquid	23/08/2023	Field Aliquot
237816	E8	Liquid	23/08/2023	
237824	E8	Liquid	23/08/2023	Field Aliquot
237831	E8	Liquid	23/08/2023	Field Aliquot
237817	E9	Liquid	23/08/2023	
237825	E9	Liquid	23/08/2023	Field Aliquot
237832	E9	Liquid	23/08/2023	Field Aliquot
237818	E10	Liquid	23/08/2023	
237826	E10	Liquid	23/08/2023	Field Aliquot
237833	E10	Liquid	23/08/2023	Field Aliquot
237819	E7 Targeted sample	Liquid	23/08/2023	
237834	E7 Targeted sample	Liquid	23/08/2023	Field Aliquot
237835	MKF-Z-B4 F1	Liquid	23/08/2023	
237836	MKF-Z-E6 F1	Liquid	23/08/2023	
237837	MKF-Z-E6.5 F1	Liquid	23/08/2023	
237838	MKF-Z-E7 F1	Liquid	23/08/2023	
237839	MKF-Z-B4 F2	Liquid	23/08/2023	
237840	MKF-Z-E6 F2	Liquid	23/08/2023	

Tests not covered by NATA accreditation 3040 are denoted with *

Codes: SN = Sample Note

RN = Result Note

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237841	MKF-Z-E6.5 F2	Liquid	23/08/2023
237842	MKF-Z-E7 F2	Liquid	23/08/2023
237843	MKF-Z-B4 Unf	Liquid	23/08/2023
237844	MKF-Z-E6 Unf	Liquid	23/08/2023
237845	MKF-Z-E6.5 Unf	Liquid	23/08/2023
237846	MKF-Z-E7 Unf	Liquid	23/08/2023
238410	MKF-Z-E8 F1	Liquid	23/08/2023
238411	MKF-Z-E9 F1	Liquid	23/08/2023
238412	MKF-Z-E10 F1	Liquid	23/08/2023
238413	MKF-Z-E8 F2	Liquid	23/08/2023
238414	MKF-Z-E9 F2	Liquid	23/08/2023
238415	MKF-Z-E10 F2	Liquid	23/08/2023
238416	MKF-Z-E8 UNF	Liquid	23/08/2023
238417	MKF-Z-E9 UNF	Liquid	23/08/2023
238418	MKF-Z-E10 UNF	Liquid	23/08/2023

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.



Project Comments

·Samples 237812 to 237818 were sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EA025: Total Suspended Solids dried at $104 \pm 2^{\circ}\text{C}$, EA036: Fixed/Volatile Suspended Solids. This report summarises data from the attached external report: ES2329001, dated 01-Sep-2023.

Samples 237835 to 237846 were also sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EK055G: Ammonia as N by Discrete Analyser, EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser, EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN), EK061G: Total Kjeldahl Nitrogen By Discrete Analyser, EK062F: Filtered Total Nitrogen as N, EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser, EK067FG: Filtered Total Phosphorus as P by Discrete Analyser, EK067G: Total Phosphorus as P by Discrete Analyser, EK071G: Reactive Phosphorus as P by discrete analyser. This report summarises data from the attached external report: ES2329001, dated 01-Sep-2023.

·Samples 237827 to 237834 were sent to Sydney Water Laboratory Services (NATA accreditation no. 63 and 610) for the analysis of Blue-Green Algal ID and Enumeration. Please see detailed results in the attached Phytoplankton Analysis Report no. 290780 dated 05-Sept-2023.

Samples 237819 to 237826 were sent to Sydney Water Laboratory Services (NATA accreditation no. 63 and 610) for the analysis of Algal Toxins. Please see the attached Analytical Report no. 290780 dated 05-Sept-2023, which gives the Algal Toxins analysis results and also the Blue-Green Algal ID and Enumeration summary results.

·Samples 238410 to 238418 were sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EK055G: Ammonia as N by Discrete Analyser, EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser, EK061F: Filtered Total Kjeldahl Nitrogen as N (TKN), EK061G: Total Kjeldahl Nitrogen By Discrete Analyser, EK062F: Filtered Total Nitrogen as N, EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser, EK067FG: Filtered Total Phosphorus as P by Discrete Analyser, EK067G: Total Phosphorus as P by Discrete Analyser, EK071G: Reactive Phosphorus as P by discrete analyser. This report summarises data from the attached external report: ES2331036, dated 18-Sep-2023.



Analysis Results - External Methods*

Area - EXTERNAL

	Sample ID	237820	237827	237821	237828	237822	237829	237823	237830	237824	237831	237825	237832
	Start Date	28/08/2023	1/09/2023	28/08/2023	1/09/2023	28/08/2023	1/09/2023	28/08/2023	1/09/2023	28/08/2023	1/09/2023	28/08/2023	1/09/2023
	Client ID	B4	B4	E6	E6	E6.5	E6.5	E7	E7	E8	E8	E9	E9
Algal Enumeration	-		RC		RC		RC		RC		RC		RC
Algal Identification	-		RC		RC		RC		RC		RC		RC
Algal Toxins	-	RC		RC		RC		RC		RC		RC	
Saxitoxins and PST	-	RC		RC		RC		RC		RC		RC	

Analysis Results - External Methods*

Area - EXTERNAL

	Sample ID	237826	237833	237819	237834
	Start Date	28/08/2023	1/09/2023	28/08/2023	1/09/2023
	Client ID	E10	E10	E7 Targeted sample	E7 Targeted sample
Algal Enumeration	-		RC		RC
Algal Identification	-		RC		RC
Algal Toxins	-	RC		RC	
Saxitoxins and PST	-	RC		RC	

Analysis Results - External Methods*

Area - EXTERNAL

	Sample ID	237835	237836	237837	237838	237839	237840	237841	237842	237843	237844	237845	237846
	Start Date	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023
	Client ID	MKF-Z-B4 F1	MKF-Z-E6 F1	MKF-Z-E6.5 F1	MKF-Z-E7 F1	MKF-Z-B4 F2	MKF-Z-E6 F2	MKF-Z-E6.5 F2	MKF-Z-E7 F2	MKF-Z-B4 Unf	MKF-Z-E6 Unf	MKF-Z-E6.5 Unf	MKF-Z-E7 Unf
Ammonia as N	mg/L	0.01	<0.01	<0.01	<0.01								
Dissolved TKN as N	mg/L					0.6	2.1	0.7	0.9				
Filtered Total Nitrogen as N	mg/L					0.6	2.2	0.7	0.9				
Filtered Total Phosphorus as P	mg/L					0.22	0.06	0.15	0.18				
Nitrite+Nitrate as N	mg/L	<0.01	0.03	0.02	<0.01	0.02	0.05	0.02	<0.01	<0.01	0.04	<0.01	<0.01
Reactive Phosphorus as P	mg/L	0.22	<0.01	0.13	0.2								
Total Kjeldahl Nitrogen as N	mg/L									0.9	5.9	1.5	1.1
Total Nitrogen as N	mg/L									0.9	5.9	1.5	1.1
Total Phosphorus as P	mg/L									0.25	0.84	0.32	0.23

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Analysis Results - External Methods*

Area - EXTERNAL

		Sample ID	238410	238411	238412	238413	238414	238415	238416	238417	238418
		Start Date	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
		Client ID	MKF-Z-E8 F1	MKF-Z-E9 F1	MKF-Z-E10 F1	MKF-Z-E8 F2	MKF-Z-E9 F2	MKF-Z-E10 F2	MKF-Z-E8 UNF	MKF-Z-E9 UNF	MKF-Z-E10 UNF
Analyte											
Ammonia as N	mg/L		<0.01	<0.01	0.01						
Dissolved TKN as N	mg/L					0.8	0.8	0.7			
Filtered Total Nitrogen as N	mg/L					0.8	0.8	0.7			
Filtered Total Phosphorus as P	mg/L					0.08	0.06	0.09			
Nitrite+Nitrate as N	mg/L		0.01	0.01	0.01	0.01	0.01	<0.01	0.01	<0.01	0.01
Reactive Phosphorus as P	mg/L		0.05	0.03	0.08						
Total Kjeldahl Nitrogen as N	mg/L								1.3	1.3	1.7
Total Nitrogen as N	mg/L								1.3	1.3	1.7
Total Phosphorus as P	mg/L								0.18	0.18	0.33

Analysis Results - External Methods*

Area - EXTERNAL

		Sample ID	237812	237813	237814	237815	237816	237817	237818
		Start Date	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023
		Client ID	B4	E6	E6.5	E7	E8	E9	E10
Analyte									
Fixed Suspended Solids @ 550°C	mg/L		<5	159	61	<5	25	28	69
Suspended Solids (SS)	mg/L		24	234	97	43	44	54	90
Volatile Suspended Solids @ 550°C	mg/L		19	75	36	43	19	26	21

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

The results in this report were authorised by:

Name	Title	Area
[REDACTED]	Senior Scientist	EXTERNAL

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