



Environmental Forensics Report of Analysis

Project 20230147

Report #:

1655

Date Issued:

31-May-2023

Page 1 of 6

Client Project Reference: Menindee Fish Kill - 18 (5 May 2023

Customer: Department of Planning & Environment

Attention:

[Redacted]

EF Project Contact:

[Redacted]

Report Date: 31 May 2023

Project Received: 08 May 2023

[Redacted]

[Redacted]

[Redacted]

The following samples were analysed:

Sample ID	Client ID	Sample Type	Client Sampled Date/Time	Aliquot
232962	E11-1	Liquid	05/05/2023 3:30PM	
232972	E11-1	Liquid	05/05/2023 3:30PM	Laboratory Aliquot
232963	E11-2	Liquid	05/05/2023 3:30PM	
232964	E12-1	Liquid	05/05/2023 10:30AM	Laboratory Aliquot
232973	E12-1	Liquid	05/05/2023 10:30AM	
232965	E12-2	Liquid	05/05/2023 10:30AM	
232966	E13-1	Liquid	05/05/2023 2:15PM	Laboratory Aliquot
232974	E13-1	Liquid	05/05/2023 2:15PM	
232967	E13-2	Liquid	05/05/2023 2:15PM	
232968	E14-1	Liquid	05/05/2023 1:00PM	Laboratory Aliquot
232975	E14-1	Liquid	05/05/2023 1:00PM	
232969	E14-2	Liquid	05/05/2023 1:00PM	Laboratory Aliquot
232970	E15-1	Liquid	05/05/2023 11:30AM	
232976	E15-1	Liquid	05/05/2023 11:30AM	Laboratory Aliquot
232971	E15-2	Liquid	05/05/2023 11:30AM	
233022	E11	Liquid	05/05/2023 1:00PM	Laboratory Aliquot
233023	E12	Liquid	05/05/2023 1:00PM	
233024	E13	Liquid	05/05/2023 1:00PM	
233025	E14	Liquid	05/05/2023 1:00PM	
233026	E15	Liquid	05/05/2023 1:00PM	
233494	E11 Filtered 1	Liquid	05/05/2023	
233495	E11 Filtered 2	Liquid	05/05/2023	
233496	E11 Unfiltered	Liquid	05/05/2023	
233497	E12 Filtered 1	Liquid	05/05/2023	
233498	E12 Filtered 2	Liquid	05/05/2023	
233499	E12 Unfiltered	Liquid	05/05/2023	
233500	E13 Filtered 1	Liquid	05/05/2023	
233501	E13 Filtered 2	Liquid	05/05/2023	
233502	E13 Unfiltered	Liquid	05/05/2023	

Tests not covered by NATA accreditation 3040 are denoted with *

Codes: SN = Sample Note
RN = Result Note

RC = Project Comment

233503	E14 Filtered 1	Liquid	05/05/2023
233504	E14 Filtered 2	Liquid	05/05/2023
233505	E14 Unfiltered	Liquid	05/05/2023
233506	E15 Filtered 1	Liquid	05/05/2023
233507	E15 Filtered 2	Liquid	05/05/2023
233508	E15 Unfiltered	Liquid	05/05/2023

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 232962, 232964, 232966, 232968, 232970 were sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EP202A: Phenoxycetic Acid Herbicides by LCMS, EP202S: Phenoxycetic Acid Herbicide Surrogate, EP204: Glyphosate and AMPA. This report summarises data from the attached external report: ES2315346, dated 16-May-2023.

·Samples 233494 to 233508 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, EK061G: Total Kjeldahl Nitrogen By Discrete Analyser, EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser, EK067 G: Total Phosphorus as P by Discrete Analyser, EK071G: Reactive Phosphorus as P by discrete analyser. This report summarises data from the attached external report: ES23162 53, dated 22-May-2023.

·Samples 232963, 232965, 232967, 232969, 232971 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. 285313 dated 29 May 2023.
 Samples 232972 to 232976 were sent to Sydney Water Laboratory Services (NATA Accreditation no: 63 and 610) for the analysis of Algal Toxins. Please the attached Analytical Report No: 285313 dated 29 May 2023, which gives Algal Toxins analysis results and the Blue-Green Algal ID and Enumeration summary results.

Analysis Results - External Methods*

Area - EXTERNAL

Analyte	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID
Algal Enumeration	-			232972	12/05/2023	E11-1	232963	26/05/2023	E11-2	232973	12/05/2023	E12-1	232965	26/05/2023	E12-2
Algal Identification	-						RC								
Algal Toxins	-						RC								

Analysis Results - External Methods*

Area - EXTERNAL

Analyte	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID
Ammonia as N				233494	17/05/2023	E11 Filtered	233495	17/05/2023	E11 Filtered	233496	17/05/2023	E11	233497	17/05/2023	E12 Filtered	233498	17/05/2023	E12 Filtered
Nitrite+Nitrate as N				0.02			0.10			0.07			0.05			0.12		
Reactive Phosphorus as P				0.06			0.09			0.08			0.12			0.12		
Total Kjeldahl Nitrogen as N				0.09			0.9			1.6			0.08			1.0		
Total Nitrogen as N							1.0			1.7			0.09			1.1		
Total Phosphorus as P							0.10			0.28			0.10			0.11		

Analysis Results - External Methods*

Area - EXTERNAL

Analyte	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID	Sample ID	Start Date	Client ID
Ammonia as N				233506	17/05/2023	E15 Filtered	233507	17/05/2023	E15 Filtered	233508	17/05/2023	E15			
Nitrite+Nitrate as N				<0.01			0.28			0.25					
Reactive Phosphorus as P				0.25			0.08			0.9					
Total Kjeldahl Nitrogen as N				0.08			0.9			1.6					
Total Nitrogen as N							1.2			1.8					
Total Phosphorus as P							0.11			0.28					

Tests not covered by NATA accreditation 3040 are denoted with *
 Codes: SN = Sample Note
 RN = Result Note
 RC = Project Comment

Analysis Results - External Methods*
Area - EXTERNAL

Analyte	Sample ID Start Date Client ID	232962 11/05/2023 E11-1	232964 11/05/2023 E12-1	232966 11/05/2023 E13-1	232968 11/05/2023 E14-1	232970 11/05/2023 E15-1
2,4,5-T	µg/L	<10	<10	<10	<10	<10
2,4,6-T	µg/L	<10	<10	<10	<10	<10
2,4-D	µg/L	<10	<10	<10	<10	<10
2,4-DB	µg/L	<10	<10	<10	<10	<10
2,4-DP	µg/L	<10	<10	<10	<10	<10
2,6-D	µg/L	<10	<10	<10	<10	<10
4-Chlorophenoxy acetic acid	µg/L	<10	<10	<10	<10	<10
AMPA	µg/L	<10	<10	<10	<10	<10
Clopyralid	µg/L	<10	<10	<10	<10	<10
Dicamba	µg/L	<10	<10	<10	<10	<10
Fluroxypyr	µg/L	<10	<10	<10	<10	<10
Glyphosate	µg/L	<10	<10	<10	<10	<10
MCPA	µg/L	<10	<10	<10	<10	<10
MCPB	µg/L	<10	<10	<10	<10	<10
Mecoprop	µg/L	<10	<10	<10	<10	<10
Picloram	µg/L	<10	<10	<10	<10	<10
Silvex (2,4,5-TP/Fenoprop)	µg/L	<10	<10	<10	<10	<10
Tridopyr	µg/L	<10	<10	<10	<10	<10

Tests not covered by NATA accreditation 3040 are denoted with *
Codes: SN = Sample Note
 RN = Result Note
 RC = Project Comment



Analysis Results - IGR TSS
Area - INORGANIC

Analyte	Sample ID	Start Date	Client ID	233022	233023	233024	233025	233026
				11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
				E11	E12	E13	E14	E15
Fixed Suspended Solids	mg/L			60	65	68	69	82
Total Suspended Solids	mg/L			75	79	84	82	99
Volatile Suspended Solids	mg/L			15	15	15	13	17

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
IGRTSS	Total Suspended Solids (TSS) (includes Volatile and Fixed Suspended Solids)	INORGANIC

The results in this report were authorised by:

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

Tests not covered by NATA accreditation 3040 are denoted with *
 Codes: SN = Sample Note
 RN = Result Note