



Environment and Heritage - Science, Economics and Insights

Environmental Forensics Report of Analysis

Project 20230150

1657

Report #:

Date Issued:

01-Jun-2023

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Client Project Reference: Menindee Fish Kill - 20 (7 May 2023

Customer: Department of Planning & Environment

Attention: [REDACTED]

Report Date: 01 June 2023

Project Received: 08 May 2023

EF Project Contact: [REDACTED]

[REDACTED]

[REDACTED]



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The following samples were analysed:

Sample ID	Client ID	Sample Type	Client Sampled Date/Time	Aliquot
233001	B4-1	Liquid	07/05/2023 12:45PM	Laboratory Aliquot
233015	B4-1	Liquid	07/05/2023 12:45PM	Laboratory Aliquot
233002	B4-2	Liquid	07/05/2023 12:45PM	Laboratory Aliquot
233003	E6-1	Liquid	07/05/2023 1:45PM	Laboratory Aliquot
233016	E6-1	Liquid	07/05/2023 1:45PM	Laboratory Aliquot
233004	E6-2	Liquid	07/05/2023 1:45PM	Laboratory Aliquot
233005	E6.5-1	Liquid	07/05/2023 3:00PM	Laboratory Aliquot
233017	E6.5-1	Liquid	07/05/2023 3:00PM	Laboratory Aliquot
233006	E6.5-2	Liquid	07/05/2023 3:00PM	Laboratory Aliquot
233007	E7-1	Liquid	07/05/2023 3:30PM	Laboratory Aliquot
233018	E7-1	Liquid	07/05/2023 3:30PM	Laboratory Aliquot
233008	E7-2	Liquid	07/05/2023 3:30PM	Laboratory Aliquot
233009	E8-1	Liquid	07/05/2023 9:45AM	Laboratory Aliquot
233019	E8-1	Liquid	07/05/2023 9:45AM	Laboratory Aliquot
233010	E8-2	Liquid	07/05/2023 9:45AM	Laboratory Aliquot
233011	E9-1	Liquid	07/05/2023 10:30AM	Laboratory Aliquot
233020	E9-1	Liquid	07/05/2023 10:30AM	Laboratory Aliquot
233012	E9-2	Liquid	07/05/2023 10:30AM	Laboratory Aliquot
233013	E10-1	Liquid	07/05/2023 11:00AM	Laboratory Aliquot
233021	E10-1	Liquid	07/05/2023 11:00AM	Laboratory Aliquot
233014	E10-2	Liquid	07/05/2023 11:00AM	Laboratory Aliquot
233035	B4	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233036	E6	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233037	E6.5	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233038	E7	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233039	E8	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233040	E9	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233041	E10	Liquid	07/05/2023 1:00PM	Laboratory Aliquot
233536	B4 Filtered 1	Liquid	07/05/2023	RC = Project Comment

Tests not covered by NATA accreditation 3040 are denoted with *
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233537	B4 Filtered 2	Liquid	07/05/2023
233538	B4 Unfiltered	Liquid	07/05/2023
233539	E6 Filtered 1	Liquid	07/05/2023
233540	E6 Filtered 2	Liquid	07/05/2023
233541	E6 Unfiltered	Liquid	07/05/2023
233542	E6.5 Filtered 1	Liquid	07/05/2023
233543	E6.5 Filtered 2	Liquid	07/05/2023
233544	E6.5 Unfiltered	Liquid	07/05/2023
233545	E7 Filtered 1	Liquid	07/05/2023
233546	E7 Filtered 2	Liquid	07/05/2023
233547	E7 Unfiltered	Liquid	07/05/2023
233548	E8 Filtered 1	Liquid	07/05/2023
233549	E8 Filtered 2	Liquid	07/05/2023
233550	E8 Unfiltered	Liquid	07/05/2023
233551	E9 Filtered 1	Liquid	07/05/2023
233552	E9 Filtered 2	Liquid	07/05/2023
233553	E9 Unfiltered	Liquid	07/05/2023
233554	E10 Filtered 1	Liquid	07/05/2023
233555	E10 Filtered 2	Liquid	07/05/2023
233556	E10 Unfiltered	Liquid	07/05/2023

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.



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Phenoxyacetic Acid Herbicides by LCMS, EP202S: Glyphosate and AMPA.

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Project Comments

Samples 233001, 233003, 233005, 233007, 233009, 233011, 233013 were sent to ALS Environmental Laboratory (NATA Accreditation no: 825) for the analysis of EP202A: Phenoxyacetic Acid Herbicides by LCMS, EP202S: Glyphosate and AMPA. This report summarises data from the attached external report: ES2315348, dated 16-May-2023.

Samples 233536 to 233556 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 Kieldahl 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. This report summarises data from the attached external report: ES2316250, dated 22-May-2023.

Samples 233002, 233004, 233006, 233008, 233010, 233012, 233014 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. 285315 dated 29 May 2023.

Samples 233015 to 233021 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: 285315 dated 29 May 2023, which gives Algal Toxins analysis results and the Blue-Green Algal ID and Enumeration summary results.



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Analysis Results - External Methods*		
Area - EXTERNAL		
Analyte	Sample ID Start Date Client ID	
Algal Enumeration	233015 12/05/2023 B4-1	233002 25/05/2023 B4-2
Algal Identification	-	E6-1
Algal Toxins	-	E6-2

Analysis Results - External Methods*		
Area - EXTERNAL		
Analyte	Sample ID Start Date Client ID	
Algal Enumeration	233021 12/05/2023 E10-1	233014 26/05/2023 E10-2
Algal Identification	-	RC
Algal Toxins	-	RC

Analysis Results - External Methods*		
Area - EXTERNAL		
Analyte	Sample ID Start Date Client ID	
Ammonia as N	233536 17/05/2023 B4 Filtered 1	233537 17/05/2023 B4 Filtered 2
Nitrite+Nitrate as N	<0.01	B4 Unfiltered
Reactive Phosphorus as P	<0.01	17/05/2023 E6 Filtered 1
Total Kjeldahl Nitrogen as N	0.23	17/05/2023 E6 Filtered 2
Total Nitrogen as N	0.6	17/05/2023 E6 Unfiltered
Total Phosphorus as P	0.6	17/05/2023 E6.5 Filtered 1
Ammonia as N	0.6	17/05/2023 E6.5 Filtered 2
Nitrite+Nitrate as N	0.04	17/05/2023 E6.5 Unfiltered
Reactive Phosphorus as P	0.14	17/05/2023 E6.5 Filtered 1
Total Kjeldahl Nitrogen as N	0.8	17/05/2023 E6.5 Filtered 2
Total Nitrogen as N	0.8	17/05/2023 E6.5 Unfiltered
Total Phosphorus as P	0.27	17/05/2023 E7 Filtered 1
Ammonia as N	0.27	17/05/2023 E7 Filtered 2
Nitrite+Nitrate as N	0.31	17/05/2023 E7 Unfiltered
Reactive Phosphorus as P	0.18	17/05/2023 E7 Filtered 1
Total Kjeldahl Nitrogen as N	0.31	17/05/2023 E7 Filtered 2
Total Nitrogen as N	0.31	17/05/2023 E7 Unfiltered
Total Phosphorus as P	0.38	17/05/2023 E7 Filtered 1

Analysis Results - External Methods*		
Area - EXTERNAL		
Analyte	Sample ID Start Date Client ID	
Ammonia as N	233548 17/05/2023 E8 Filtered 1	233549 17/05/2023 E8 Filtered 2
Nitrite+Nitrate as N	0.06	E8 Unfiltered
Reactive Phosphorus as P	0.04	17/05/2023 E9 Filtered 1
Total Kjeldahl Nitrogen as N	0.10	17/05/2023 E9 Filtered 2
Total Nitrogen as N	0.8	17/05/2023 E9 Unfiltered
Total Phosphorus as P	0.9	17/05/2023 E10 Filtered 1
Ammonia as N	0.06	17/05/2023 E10 Filtered 2
Nitrite+Nitrate as N	0.04	17/05/2023 E10 Unfiltered
Reactive Phosphorus as P	0.10	17/05/2023 E10 Filtered 1
Total Kjeldahl Nitrogen as N	1.3	17/05/2023 E10 Filtered 2
Total Nitrogen as N	1.4	17/05/2023 E10 Unfiltered
Total Phosphorus as P	0.14	17/05/2023 E10 Filtered 1

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Analysis Results - External Methods*		Sample ID Start Date Client ID	233001 11/05/2023 B4-1	233003 11/05/2023 E6-1	233005 11/05/2023 E6-5-1	233007 11/05/2023 E7-1	233009 11/05/2023 E8-1	233011 11/05/2023 E9-1	233013 11/05/2023 E10-1
Analyte									
2,4,5-T	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-T	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
2,4-D	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
2,4-DB	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
2,4- DP	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
2,6-D	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenoxy acetic acid	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
AMPA	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Clopyralid	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Dicamba	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Fluroxypyr	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Glyphosate	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
MCPA	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
MCPB	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Mecoprop	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Pridoram	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Silvex (2,4,5-TP/Epenotrop)	µg/L	<10	<10	<10	<10	<10	<10	<10	<10
Tridopyr	µg/L	<10	<10	<10	<10	<10	<10	<10	<10

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Analysis Results - IGRTSS	
Area - INORGANIC	Sample ID Start Date Client ID
Analyte	233035 11/05/2023 B4
Fixed Suspended Solids	mg/L 7
Total Suspended Solids	mg/L 12
Volatile Suspended Solids	mg/L <5

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
[REDACTED]	Senior Scientist Scientist

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