



CERTIFICATE OF ANALYSIS

Work Order	: ES2413011	Page	: 1 of 7
Client	: Department of Climate Change, Energy, the Environment and Water	Laboratory	: Environmental Division Sydney
Contact	: [REDACTED]	Contact	: Customer Services ES [REDACTED]
Address	: [REDACTED]	Address	: [REDACTED]
Telephone	: [REDACTED]	Telephone	: [REDACTED]
Project	: Darling Baaka River Health Program	Date Samples Received	: 16-Apr-2024 14:30
Order number	: [REDACTED]	Date Analysis Commenced	: 26-Apr-2024
C-O-C number	: [REDACTED]	Issue Date	: 30-Apr-2024 20:53
Sampler	: [REDACTED]		
Site	: [REDACTED]		
Quote number	: ES24DEPENWAT0001		
No. of samples received	: 40		
No. of samples analysed	: 23		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
[REDACTED]	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
[REDACTED]	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
[REDACTED]	Analyst	Sydney Inorganics, Smithfield, NSW

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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.



Analytical Results

Sub-Matrix: SLUDGE (Matrix: SOIL)				Sample ID	MFK-sed-2 20240325	MFK-sed-5 20240325	MFK-sed-6 20240325	MFK-sed-7 20240325	MFK-sed-9 20240325
Sampling date / time					25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413011-002	ES2413011-005	ES2413011-006	ES2413011-007	ES2413011-009	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	67.0	71.2	66.4	74.0	69.1	
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg	23900	32600	31400	33400	26400	
Cobalt	7440-48-4	2	mg/kg	10	12	12	13	10	
Manganese	7439-96-5	5	mg/kg	925	766	863	1120	791	
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5	
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2	
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	26	35	34	36	28	
Copper	7440-50-8	5	mg/kg	17	22	21	22	17	
Lead	7439-92-1	5	mg/kg	9	11	10	11	9	
Nickel	7440-02-0	2	mg/kg	19	25	24	26	20	
Zinc	7440-66-6	5	mg/kg	42	57	53	56	45	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	



Analytical Results

Sub-Matrix: SLUDGE (Matrix: SOIL)				Sample ID	MFK-sed-17C 20240325	MFK-sed-18A 20240325	MFK-sed-18B 20240325	MFK-sed-19 20240325	MFK-sed-21 20240325
				Sampling date / time	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2413011-019	ES2413011-020	ES2413011-021	ES2413011-022	ES2413011-024
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		26.5	26.7	16.0	71.6	67.9
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		5320	7680	2900	31200	24400
Cobalt	7440-48-4	2	mg/kg		5	6	4	12	11
Manganese	7439-96-5	5	mg/kg		148	186	158	827	773
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	<2
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		8	10	4	34	27
Copper	7440-50-8	5	mg/kg		<5	7	<5	22	18
Lead	7439-92-1	5	mg/kg		<5	<5	<5	11	10
Nickel	7440-02-0	2	mg/kg		5	8	4	24	19
Zinc	7440-66-6	5	mg/kg		12	14	6	56	48
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1



Analytical Results

Sub-Matrix: SLUDGE (Matrix: SOIL)				Sample ID	MFK-sed-22 20240325	MFK-sed-23 20240325	MFK-sed-24 20240325	MFK-sed-25 20240325	MFK-sed-26 20240325
Sampling date / time					25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2413011-025	ES2413011-026	ES2413011-027	ES2413011-028	ES2413011-029
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		73.3	37.8	29.8	43.8	66.7
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		32500	10900	7040	11800	26900
Cobalt	7440-48-4	2	mg/kg		12	6	4	5	9
Manganese	7439-96-5	5	mg/kg		993	268	174	471	541
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	<2
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		35	12	8	13	28
Copper	7440-50-8	5	mg/kg		23	8	5	9	19
Lead	7439-92-1	5	mg/kg		12	6	<5	<5	8
Nickel	7440-02-0	2	mg/kg		25	9	6	9	20
Zinc	7440-66-6	5	mg/kg		60	21	13	22	45
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1



Analytical Results

Sub-Matrix: SLUDGE (Matrix: SOIL)				Sample ID	MFK-sed-27 20240325	MFK-sed-28 20240325	MFK-sed-29 20240325	MFK-sed-30 20240325	MFK-sed-33 20240325
				Sampling date / time	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2413011-030	ES2413011-031	ES2413011-032	ES2413011-033	ES2413011-036
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		69.6	55.2	33.6	76.9	75.4
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		26500	15600	6980	41700	37500
Cobalt	7440-48-4	2	mg/kg		10	8	4	15	12
Manganese	7439-96-5	5	mg/kg		808	413	260	734	972
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg		<2	<2	<2	<2	<2
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	6	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		28	17	8	43	38
Copper	7440-50-8	5	mg/kg		19	13	9	23	21
Lead	7439-92-1	5	mg/kg		10	6	<5	18	10
Nickel	7440-02-0	2	mg/kg		20	13	6	34	26
Zinc	7440-66-6	5	mg/kg		46	28	13	74	59
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1



Analytical Results

Sub-Matrix: SLUDGE (Matrix: SOIL)				Sample ID	MFK-sed-34 20240325	MFK-sed-35 20240325	30 TRIP 24 GRAIN SIZE	----	----
Sampling date / time				25-Mar-2024 00:00	25-Mar-2024 00:00	25-Mar-2024 00:00	----	----	
Compound	CAS Number	LOR	Unit	ES2413011-037	ES2413011-038	ES2413011-039	-----	-----	
				Result	Result	Result	----	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	73.1	61.6	75.1	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg	32700	34400	32300	----	----	
Cobalt	7440-48-4	2	mg/kg	11	13	13	----	----	
Manganese	7439-96-5	5	mg/kg	1090	484	717	----	----	
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	----	----	
Silver	7440-22-4	2	mg/kg	<2	<2	<2	----	----	
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	33	38	33	----	----	
Copper	7440-50-8	5	mg/kg	20	28	21	----	----	
Lead	7439-92-1	5	mg/kg	9	11	11	----	----	
Nickel	7440-02-0	2	mg/kg	22	25	24	----	----	
Zinc	7440-66-6	5	mg/kg	52	58	56	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----	