



CERTIFICATE OF ANALYSIS

Work Order	: CA2303089	Page	: 1 of 4
Client	: Cootamundra Gundagai Shire Council	Laboratory	: ALS Water Resources Group
Contact	: Jason Turner	Contact	: Client Services
Address	: PO Box 420 Cootamundra NSW 2590	Address	: 2/33 Couranga Cr Hume ACT Australia 2620
Telephone	: ----	Telephone	: +61 2 6202 5404
Project	: Soil Samples	Date Samples Received	: 12-May-2023 15:00
Order number	: ----	Date Analysis Commenced	: 30-May-2023
C-O-C number	: ----	Issue Date	: 15-Jun-2023 15:14
Sampler	: Jason Turner		
Site	: ----		
Quote number	: ----		
No. of samples received	: 10		
No. of samples analysed	: 10		



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
Amanda Gonzalez	Laboratory Technician	Inorganics, Hume, ACT
Geetha Ramasundara	Chemistry Teamleader	Inorganics, Hume, ACT
Teresa Rand	Client Services	Administration, Hume, ACT
Teresa Rand	Client Services	ALS Environmental, Hume, ACT
Titus Vimalasiri	Metals Teamleader	Inorganics, Hume, ACT



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.

- **For samples collected by ALS WRG, sampling was carried out in accordance with Procedure EN67**
- EK058G Performed at ALS Sydney
- EK062G Performed at ALS Sydney
- EK067G Performed at ALS Sydney
- EP004 Performed at ALS Sydney



Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)				Sample ID	1	2	3	4	5
					Country Club Oval	Mitchell Park	Jubilee Park	Fisher Park	Nicholson Park
Sampling date / time					09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00
Compound	CAS Number	LOR	Unit		CA2303089-001	CA2303089-002	CA2303089-003	CA2303089-004	CA2303089-005
					Result	Result	Result	Result	Result
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg		9.7	13.4	<0.1	10.1	1.9
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		454	435	230	632	497
EA002CA: pH in Soil									
Ø pH Value	----	0.1	pH Unit		7.0	7.7	7.1	6.9	7.4
EA010CA: Conductivity									
Ø Electrical Conductivity @ 25°C	----	0.01	dS/m		0.20	0.28	0.13	0.13	0.08
EP004: Organic Matter									
Organic Matter	----	0.5	%		7.3	7.6	1.1	4.2	4.8
Total Organic Carbon	----	0.5	%		4.2	4.4	0.6	2.5	2.8
Fraction Organic Carbon (FOC)	----	0.005	-		<0.005	<0.005	<0.005	<0.005	<0.005
EK062CA: Total Nitrogen as N									
Total Nitrogen as N	----	20	mg/kg		2840	1940	1260	2610	2110
EK074CA: Fluoride Extractable Phosphorus (Bray)									
Ø Fluoride Extractable P (Bray)	----	0.1	mg/kg		36.3	35.0	7.5	74.1	17.7
ED007CA: Exchangeable Cations									
Ø Cation Exchange Capacity	----	1	cmol/kg		14	12	14	13	17
Ø Exchangeable Sodium Percent	----	1	%		3	6	2	4	5
Ø Exchangeable Sodium	----	0.1	cmol/kg		0.4	0.7	0.3	0.6	0.8
Ø Exchangeable Calcium	----	1	cmol/kg		8	7	8	8	10
Ø Exchangeable Magnesium	----	1	cmol/kg		4	4	5	4	6
Ø Exchangeable Potassium	----	1	cmol/kg		1	1	1	1	1
Ø Exchangeable Aluminium	----	0.1	cmol/kg		<0.1	<0.1	<0.1	0.2	<0.1



Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)				Sample ID	6 Bradman Oval	7 Cameron Square	8 Albert Park	9 O'Connor Park	10 Clark Oval
Sampling date / time				09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00	
Compound	CAS Number	LOR	Unit	CA2303089-006	CA2303089-007	CA2303089-008	CA2303089-009	CA2303089-010	
				Result	Result	Result	Result	Result	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	0.6	<0.1	12.6	0.7	12.6	
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg	331	261	381	351	472	
EA002CA: pH in Soil									
∅ pH Value	----	0.1	pH Unit	7.2	6.6	6.6	6.9	7.1	
EA010CA: Conductivity									
∅ Electrical Conductivity @ 25°C	----	0.01	dS/m	0.17	0.17	0.23	0.12	0.10	
EP004: Organic Matter									
Organic Matter	----	0.5	%	3.1	6.2	6.2	1.9	5.8	
Total Organic Carbon	----	0.5	%	1.8	3.6	3.6	1.1	3.3	
Fraction Organic Carbon (FOC)	----	0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	
EK062CA: Total Nitrogen as N									
Total Nitrogen as N	----	20	mg/kg	1920	1620	2870	1850	2040	
EK074CA: Fluoride Extractable Phosphorus (Bray)									
∅ Fluoride Extractable P (Bray)	----	0.1	mg/kg	9.1	6.9	9.2	23.5	41.0	
ED007CA: Exchangeable Cations									
∅ Cation Exchange Capacity	----	1	cmol/kg	11	10	12	6	17	
∅ Exchangeable Sodium Percent	----	1	%	7	5	2	5	3	
∅ Exchangeable Sodium	----	0.1	cmol/kg	0.8	0.5	0.2	0.3	0.6	
∅ Exchangeable Calcium	----	1	cmol/kg	6	6	6	3	9	
∅ Exchangeable Magnesium	----	1	cmol/kg	4	2	4	2	6	
∅ Exchangeable Potassium	----	1	cmol/kg	<1	2	2	<1	2	
∅ Exchangeable Aluminium	----	0.1	cmol/kg	<0.1	<0.1	<0.1	<0.1	<0.1	