

02/06/2025

02 9521 6567

Unit 1A, 29-33 Waratah St
Kirrawee NSW 2232

Reditus Consulting Pty Ltd
ABN: 34 631 168 502

reditus.com.au

Ingenia Holiday Parks

Julian Bacigalupo
Project Manager

by email

Reference: 24369L01_Merry Beach Monthly Results Apr 2025v1.0

Dear Julian,

Merry Beach Caravan Park, Monthly Review of Laboratory Results – Sewage Treatment and Reuse System – April 2025

EPL 5888 Monitoring Requirements

1 Introduction

Reditus Consulting Pty Ltd (Reditus) was commissioned by Ingenia Holiday Parks Pty Ltd (Ingenia) to complete to provide a factual report of the monthly sampling results collected in April 2025 as part of the Environmental Protection Licence (EPL 5888) monitoring requirements for the Merry Beach Caravan Park (the Site).

2 EPL5888 Requirements

Sampling frequency, as directed in EPL5888, is presented in **Table 1** below. Samples were collected on 30 April 2025, which include:

- Effluent sample (EFF1)
- Groundwater samples GW1, GW2, GW3, GW4, GW5 and GW6
- Surface water samples (SW1 / EPA07, SW2 / EPA08, SW3 / EPA09)
- Soil sample EPA16

Sample locations are presented in **Appendix A**. Analytical results against EPL5888 concentration limits are presented below, and analytical tables are presented in **Appendix B**. Additionally, daily monitoring results



from the sewage treatment plant and re-use scheme are presented in **Appendix C**. Laboratory certificates are presented in **Appendix D**.

Table 1 Sampling Frequency and Compliance

SAMPLING POINT	2	7, 8, 9	10, 11, 12, 13, 14, 15,	16
Type	Waste Treatment	Surface Water	Groundwater	Soil
January	X	X	X	
February	X	X		
March	X			
April	X	X	X	X
May	X			
June	X	X		
July	X			
August	X			
September	X			
October	X		X	
November	X			
December	X			



3 Results

3.1.1 POINT 2

Monitoring point 2 water sample (treated effluent discharge sample) was collected on 30 April 2025, with analytical results presented against EPL5888 concentration limits in **Table 2** below. All reported concentrations were below the concentration limits presented in the EPL.

Table 2 Analytical results from point 2 against EPL5888 concentration limits

		BOD	FAECAL COILFORMS	TOTAL NITROGEN	OIL AND GREASE	PH	TOTAL PHOSPHORUS	TOTAL SUSPENDED SOLIDS
Unit		mg/L	CFU/100ml	mg/L	mg/L	pH units	mg/L	mg/L
50%ile			25		1.5		5.5	
90%ile		20		10				10
100%ile		30	150	15	5	6.5-8.5	10	20
Sample ID	Date							
EFF1	30-Apr-25	<2	<1	4.0	<1	8.21	0.84	<5

3.1.2 SURFACE WATER

Surface water samples were collected on 30 April 2025 from three locations (SW1, SW2 and SW3, otherwise known as EPA07, EPA08 and EPA09 respectively), and analytical results are presented in **Table B1** in **Appendix B**. A review of the monitored parameters found all results consistent with the previous month. It is noted that Thermotolerant coliforms were slightly elevated, which may be a result of the pollution incident that was identified on 28 January 2025, or as a result of the large wildlife populations found within and surrounding the creek.

3.1.3 GROUNDWATER

Groundwater samples were collected on 30 April 2025 from six locations (GW1, GW2, GW3, GW4, GW5 and GW6), and analytical results are presented in **Table B2** in **Appendix B**. A review of the monitored



parameters found all results consistent with the previous month. It is noted that Thermotolerant coliforms were slightly elevated, which may be a result of the pollution incident that was identified on 28 January 2025, or as a result of the large wildlife populations found within and surrounding the creek.

3.1.4 POINT 16 (SOIL)

A single soil sample was on 30 April 2025 from EPA16, with analytical results are presented in **Table B3** in **Appendix B**. These soil results are the first collated by Reditus. Elevated levels of Total Kjeldahl Nitrogen and Total Phosphorus were noted during this reporting period.



4 Limitations

Reditus performed its services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties expressed or implied are made.

Subject to the scope of work, Reditus' assessment was limited strictly to reporting on the monthly sampling associated with the subject property and does not include evaluation of any other issues. The absence of any identified hazardous or toxic materials should not be interpreted as a guarantee that such materials do not exist on the subject property.

This report does not comment on any regulatory obligations based on the findings.

All conclusions and recommendations regarding the property are the professional opinions of Reditus personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, Reditus assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements or sources outside of Reditus, or developments resulting from situations outside the scope of this project.

Reditus is not engaged in environmental assessment and reporting for the purpose of advertising sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity purposes. The client acknowledges that this report is for the exclusive use of the client.



5 Closure

We trust that this document meets your immediate requirements. Should you have any queries please feel free to contact the undersigned.

Sincerely,

Thomas Lancaster

Hydrogeologist

APPENDICES

Appendix A – Figures

Appendix B – Analytical Tables

Appendix C – Laboratory Reports

A

Figures





Map 24369_LTR01_f01_samplelocs_v01		Legend Irrigation Fields Creek Sample Locations Groundwater Surface Water Soil Site Location
--	--	--

B

Analytical Tables



Table B1 - Surface Water Samples

Analyte			pH	Electrical Conductivity	Ammonia as N	Nitrate + Nitrite	Total Kjeldahl Nitrogen	Total Phosphorus	Biochemical Oxygen Demand	Thermotolerant Coliforms	Enterococci
Unit			pH Unit	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100ml	CFU/100ml
LOR			0.01	1	0.01	0.01	0.1	0.01	2	1	1
Sample Location	EPL5888 Location	Date									
SW1	EPA07	14-Oct-24	6.8	1410	0.03	<0.01	2.9	0.13	6	250	65
SW1	EPA07	28-Jan-25	7.73	1770	5.31	0.01	7.9	0.76	4	5900	320
SW1	EPA07	19-Feb-25	7.62	1390	0.1	<0.01	0.6	0.15	4	5400	580
SW1	EPA07	19-Mar-25	7.17	736	0.06	<0.01	1	0.07	7	6800	140
SW1	EPA07	30-Apr-25	6.41	728	0.03	<0.01	1	0.04	3	1500	280
SW2	EPA08	14-Oct-24	6.9	3300	0.12	0.01	1.6	0.05	4	~1300	2200
SW2	EPA08	28-Nov-24	6.9	2140	0.18	<0.01	0.8	0.11	5	3200	910
SW2	EPA08	28-Jan-25	6.76	1900	0.2	<0.01	0.7	<0.01	<2	~12000	900
SW2	EPA08	19-Feb-25	7.77	1280	0.36	0.02	1.2	0.32	5	360	200
SW2	EPA08	19-Mar-25	7.37	1590	0.15	0.96	1.3	0.19	7	~8700	210
SW2	EPA08	30-Apr-25	6.15	708	0.02	<0.01	0.8	0.02	2	2000	220
SW3	EPA09	14-Oct-24	7.1	5560	0.07	<0.01	1.2	0.18	4	1200	160
SW3	EPA09	28-Nov-24	7.5	4690	<0.01	<0.01	1.8	0.94	5	1400	580
SW3	EPA09	28-Jan-25	6.55	1840	0.02	<0.01	0.6	1.35	<2	480	11
SW3	EPA09	19-Feb-25	8.17	1360	0.13	0.02	0.9	0.46	4	1500	120
SW3	EPA09	19-Mar-25	7.88	1810	0.02	1.47	0.7	0.59	6	~250	~7
SW3	EPA09	30-Apr-25	6.11	736	0.02	<0.01	0.7	0.03	4	2200	330

Table B2 - Groundwater Analytical Results

Analyte			pH	Electrical Conductivity	Ammonia as N	Nitrate +Nitrite	Total Kjeldahl Nitrogen	Total Phosphorus	Biochemical Oxygen Demand	Thermotolerant Coliforms	Enterococci
Unit			pH Unit	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	CFU/100ml	CFU/100ml
LOR			0.01	1	0.01	0.01	0.1	0.01	2	1	1
Sample Location	EPL5888 Location	Date									
GW01	EPA10	28-Jan-25	5.08	2000	0.18	0.06	0.7	0.03	<2	500	21
GW01	EPA10	30-Apr-25	4.96	1530	0.03	0.16	1.8	0.3	<2	4300	420
GW02	EPA11	28-Jan-25	6.58	809	0.23	0.02	1.5	<0.01	<2	~1	<1
GW02	EPA11	30-Apr-25	6.61	798	0.46	0.05	1.5	0.02	3	31	~2
GW03	EPA12	28-Jan-25	6.44	3430	0.84	0.03	2.1	0.27	8	<1	<1
GW03	EPA12	30-Apr-25	6.33	2410	1.73	0.46	2.4	0.5	7	490	~6
GW04	EPA13	26-Sep-24	7.09	848	0.53	0.31	3.1	0.88	7	98	180
GW04	EPA13	28-Jan-25	7.15	332	0.31	0.25	0.9	1.14	2	16000	1000
GW04	EPA13	30-Apr-25	6.89	97	0.08	0.14	4.8	1.28	8	110000	5000
GW05	EPA14	26-Sep-24	7.45	1110	13.2	<0.01	23.6	2.31	62	~22000	9000
GW05	EPA14	28-Jan-25	7.65	1170	6.05	0.04	9.4	1.19	18	580	10000
GW05	EPA14	30-Apr-25	7.26	1390	5.54	0.1	9	1.95	23	360	260
GW06	EPA15	26-Sep-24	7.03	954	0.45	0.09	45.7	4.55	3	130	670
GW06	EPA15	28-Jan-25	6.92	998	0.56	0.57	1.8	0.03	<2	44	36
GW06	EPA15	30-Apr-25	7.26	1010	0.02	1.13	0.9	0.1	5	310	14

Table B3 - Soil Analytical Results

Analyte			pH	Electrical Conductivity	Moisture Content	Ammonia as N	Nitrate + Nitrite	Total Kjeldahl Nitrogen	Total Nitrogen as N	Total Phosphorus
Unit			pH Unit	µS/cm	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR			0.1	1	1	20	0.1	20	20	2
Sample Location			EPL5888 Location		Date					
EPA16	EPA16	30-Apr-25	5.8	228	60.2	<20	<0.1	7080	7080	930

C

Analytical Results





CERTIFICATE OF ANALYSIS

Work Order : **EW2502199**

Client : **Ingenia Holidays Merry Beach**

Contact : Harry Brazil

Address : Merry Beach Road,
Kioloa 2539

Telephone : ----

Project : Combined EPA Sampling

Order number : ----

C-O-C number : ----

Sampler : Client - Jordan Haley

Site : ----

Quote number : EW24INGMER0001

No. of samples received : 11

No. of samples analysed : 11

Page : 1 of 6

Laboratory : Environmental Division NSW South Coast

Contact : Aneta Prosaroski

Address : 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia

Telephone : 02 42253125

Date Samples Received : 30-Apr-2025 16:00

Date Analysis Commenced : 01-May-2025

Issue Date : 08-May-2025 12:29



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
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Lauren Waters	Microbiology Laboratory Technician	Sydney Microbiology, Smithfield, NSW
Prasanna Ganta	Team Leader - Microbiology/Phycology	Sydney Microbiology, Smithfield, NSW



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.

- MF = membrane filtration
- CFU = colony forming unit
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- MW006 is ALS's internal code and is equivalent to AS4276.5.
- MW023 is ALS's internal code and is equivalent to AS4276.9.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	EPA 16	----	----	----	----
Sampling date / time					30-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EW2502199-011	-----	-----	-----	-----
				Result	----	----	----	----	----
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit		5.8	----	----	----	----
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm		228	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		60.2	----	----	----	----
EK055: Ammonia as N									
Ammonia as N	7664-41-7	20	mg/kg		<20	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg		<0.1	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg		<0.1	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		<0.1	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		7080	----	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)									
[^] Total Nitrogen as N	----	20	mg/kg		7080	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		930	----	----	----	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				GW1	GW2	GW3	GW4	GW5
Sampling date / time				30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	EW2502199-001	EW2502199-002	EW2502199-003	EW2502199-004	EW2502199-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	4.96	6.61	6.33	6.89	7.26
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	1530	798	2410	97	1390
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.46	1.73	0.08	5.54
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	0.16	0.05	0.46	0.14	0.10
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.8	1.5	2.4	4.8	9.0
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	0.30	0.02	0.50	1.28	1.95
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	<2	3	7	8	23
MW006: Thermotolerant Coliforms & E.coli by MF								
Thermotolerant Coliforms	----	1	CFU/100mL	4300	31	490	110000	360
MW023: Enterococci by Membrane Filtration								
Enterococci	----	1	CFU/100mL	420	~2	~6	5000	260



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	GW6	Effluent	SW1	SW2	SW3
Sampling date / time					30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00	30-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		EW2502199-006	EW2502199-007	EW2502199-008	EW2502199-009	EW2502199-010
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.26	8.21	6.41	6.15	6.11
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		1010	----	728	708	736
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		----	<5	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.02	----	0.03	0.02	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		1.13	2.97	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.9	1.0	1.0	0.8	0.7
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
[^] Total Nitrogen as N	----	0.1	mg/L		----	4.0	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.10	0.84	0.04	0.02	0.03
EP020: Oil and Grease (O&G)									
Oil & Grease	----	1.0	mg/L		----	<1.0	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		5	<2	3	2	4
MW006: Thermotolerant Coliforms & E.coli by MF									
Thermotolerant Coliforms	----	1	CFU/100mL		310	<1	1500	2000	2200
MW023: Enterococci by Membrane Filtration									
Enterococci	----	1	CFU/100mL		14	----	280	220	330



Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry / Biology).

(WATER) EP030: Biochemical Oxygen Demand (BOD)

(WATER) MW023: Enterococci by Membrane Filtration

(WATER) EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser

(WATER) EK055G: Ammonia as N by Discrete Analyser

(WATER) MW006: Thermotolerant Coliforms & E.coli by MF

(WATER) EK067G: Total Phosphorus as P by Discrete Analyser

(WATER) EK061G: Total Kjeldahl Nitrogen By Discrete Analyser

(WATER) EA010P: Conductivity by PC Titrator

(WATER) EA005P: pH by PC Titrator

(WATER) EK062G: Total Nitrogen as N (TKN + NO_x) by Discrete Analyser

(WATER) EA025: Total Suspended Solids dried at 104 ± 2°C

(WATER) EP020: Oil and Grease (O&G)

(SOIL) EK055: Ammonia as N

(SOIL) EK057G: Nitrite as N by Discrete Analyser

(SOIL) EK058G: Nitrate as N by Discrete Analyser

(SOIL) EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser

(SOIL) EK061G: Total Kjeldahl Nitrogen By Discrete Analyser

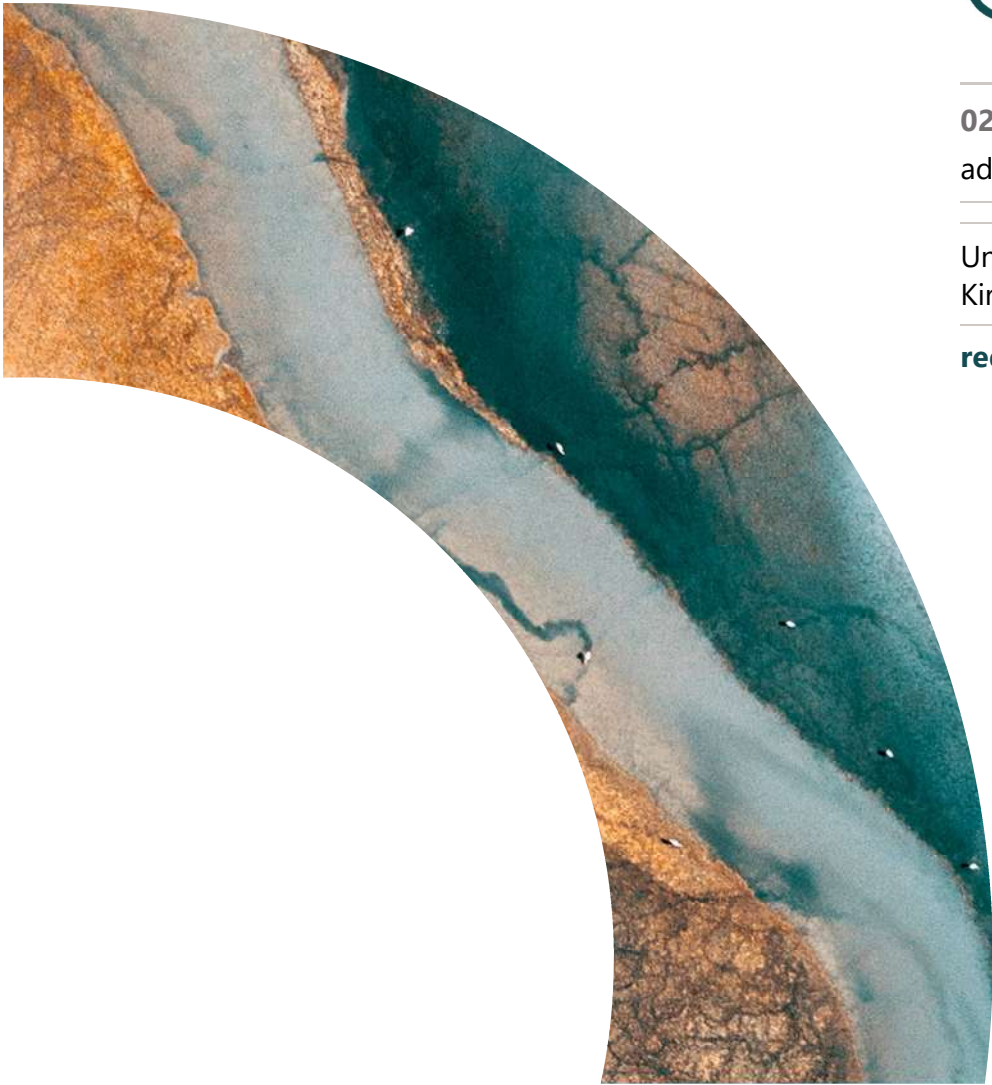
(SOIL) EK067G: Total Phosphorus as P by Discrete Analyser

(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

(SOIL) EK062: Total Nitrogen as N (TKN + NO_x)

(SOIL) EA010: Conductivity (1:5)

(SOIL) EA002: pH 1:5 (Soils)



02 9521 6567

admin@reditusconsulting.com

Unit 1A, 29-33 Waratah Street,
Kirrawee NSW 2232

reditus.com.au