WATER MONITORING REPORT (APRIL TO JUNE 2025)

CONCRUSH FACILITY, TERALBA NSW 2284

Prepared for CONCRUSH PTY LTD

Prepared by RCA Australia

RCA ref 13589a-262/0

JULY 2025

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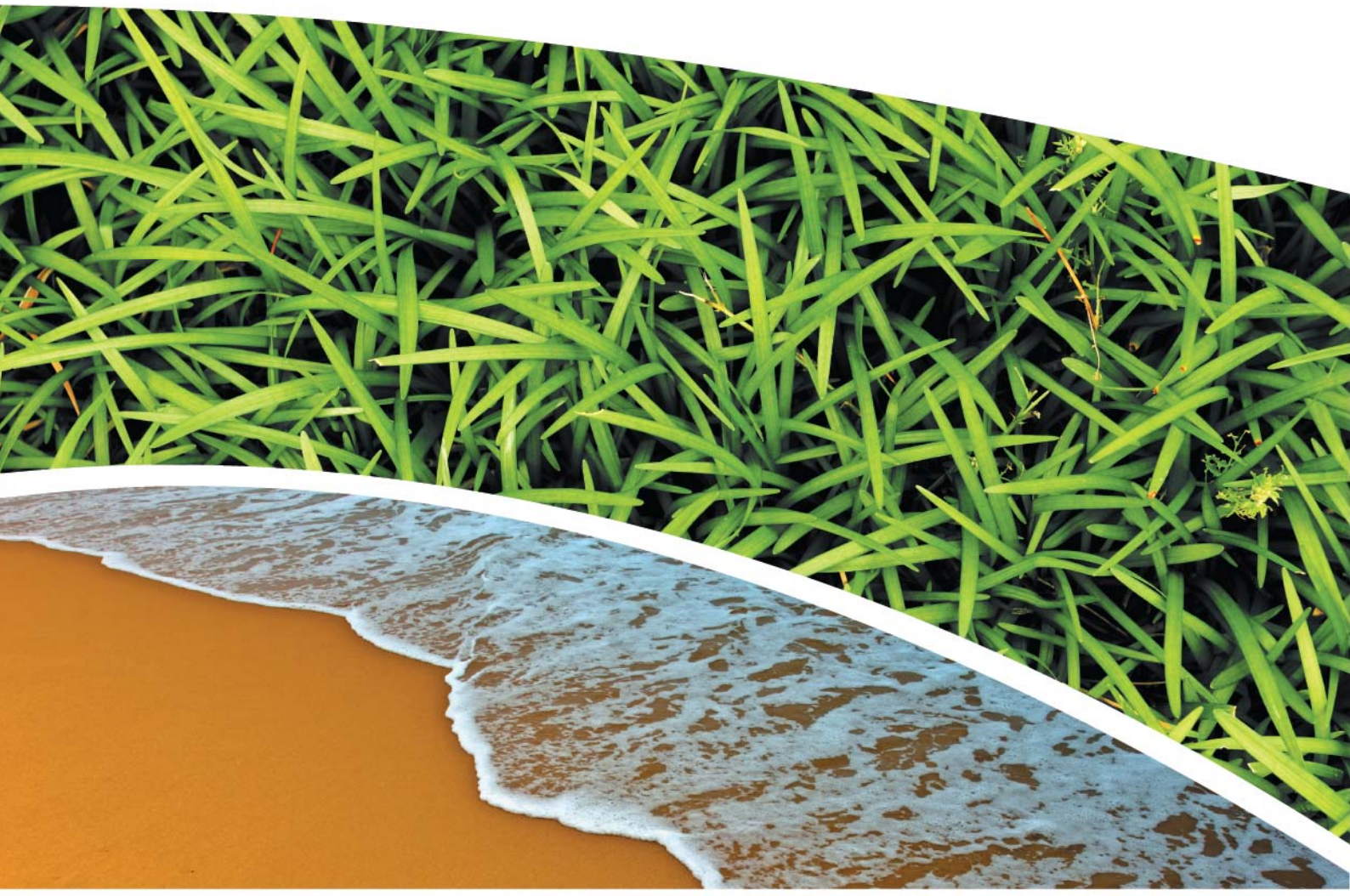

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16 July 2025

Concrush Pty Ltd
21 Racecourse Road
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WATER MONITORING REPORT (APRIL TO JUNE 2025)
CONCRUSH FACILITY, TERALBA

1. INTRODUCTION

This report presents the findings of water monitoring conducted at the Concrush Resource Recovery Facility in Teralba, NSW, during the April, May and June 2025.

The site was an operational facility over the entirety of the monitored area for the reporting period. Some construction is ongoing in the northern portion of the site for Sediment Basin 1 and the new weighbridge.

The site's environmental protection licence, EPL13351, specifies water monitoring be undertaken at the two (2) surface water discharge locations (refer to **Figure 2** in Section 3) weekly during discharge. The remainder of monitoring was initially outlined in plans submitted as part of the State Significant Development application for an increase to the facility's capacity (as referenced on the Concrush website[1]). There has been updates to the documentation following the completion of twelve (12) months of operation, in March 2024, and at the time of writing the guidance document is considered to be the:

- Groundwater Management Plan (GMP, Ref [1]).
    - It is noted that the ongoing monitoring requirements for groundwater will be incorporated into the Operational Environmental Management Plan for the site following the finalisation of modification arrangements currently in progress.
- Discharge Verification and Management Report (DVMP, Ref [2]).

This report was undertaken at the request of Ross Lo Monaco of Concrush Pty Ltd.

[1] Concrush.com.au

2. SITE IDENTIFICATION AND DESCRIPTION

The site is described as 21 Racecourse Road, Teralba and part Lot 2, DP 220347. Additional site details are shown in **Table 1** and the site extent is shown in **Figure 1** below.

Table 1 *Site Details*

Current zoning[2]	E5 – Heavy Industrial.
Current use	Concrush resource recovery facility.
Size of site	Approximately 4.8ha.
Surrounding land use to the: **North**	Lot 1 DP220347. Industrial – storage yard for pre-cast concrete panels operated by others.
South	Part of Lot 2 DP220347. Industrial – scrap metal recycling yard operated by others.
East	Racecourse Road and then Cockle Creek.
West	Main Northern Rail line and then wetlands.
Nearest sensitive receptor (human health)	Residential housing, located approximately 360m southeast across Cockle Creek.
Nearest sensitive receptor (environmental)	Cockle Creek, located approximately 35m east and wetland approximately 30m west.

Figure 1 *Project Site Location and Layout (aerial as of 25 May 2025)*

[2] https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address

3. MONITORING DETAILS

The site's water management scheme comprises:

- Collection of runoff and seepage from the Green Waste catchment, anticipated to potentially contain nutrients, in the Leachate Pond (LP) which was lined with a flexible membrane liner with a permeability of less than 10^{-14} m/s to prevent potential contamination of groundwater.
- Treatment of nutrients via a constructed Wetland (WL) which has also been lined and populated with appropriate plants to maximise the removal of nutrients. Water is pumped into the WL from the LP.
- Collection of runoff from the remainder of the site into Sediment Dam 1 (SED1) and Sediment Dam 2 (SED2). Water from the Wetland discharges into SED2.

Concrush aims to re-use all surface water on site such that none is discharged however in high rainfall events or periods, some discharge may occur from one or both of the Sediment Dams into the un-named waterway along the western border of the site. This waterway runs to the north and Cockle Creek at the northern end of the site and to the south, wetlands and eventually Cockle Creek at the southern end of the site; the location at which the flow direction changes has not been identified and may vary with seasonal conditions.

A total of eight (8) monitoring locations are situated on-site comprising four (4) surface water locations (LP, WL, SED1 and SED2), two (2) discharge points (DIS-SED1 and DIS-SED2) and two (2) groundwater locations (GW1 and GW3). Additionally, two (2) off-site background surface water locations (SW1 and SW2) are included in the monitoring programme. These locations are shown in **Figure 2**. It is noted that, due to significant vegetation growth to the south of the site, that the sampling undertaken for SW2 has been moved to within approximately ten (10) metres of the location of DIS-SED2, estimated to be thirty (35) metres to the north of the initial sampling location.

Figure 2 *Water sampling locations (aerial as of 25 May 2025)*

Monitoring is undertaken on a monthly basis, typically the last working day of the month however adjusted for the compliance of dust monitoring undertaken at the site, and comprises the recording of depths of water, field readings using a calibrated water quality monitor and the collection of samples for chemical analyses as detailed in **Table 2** below.

Table 2 *Analytical Scope*

Location	Monitored Parameters
GW1	• Depth to groundwater. • Field readings. • Nutrients (ammonia, nitrate, nitrite, total phosphorous). • Hydrocarbons[4] once a quarter.
GW3	
LP	• Field observation of water depth at LP. • Field readings. • pH, electrical conductivity (EC), total suspended solids (TSS). • Nutrients (ammonia, nitrate, nitrite, total Kjeldahl nitrogen, total phosphorous).
WL	
SED1	• Field readings. • pH, EC, TSS. • Dissolved metals[3]. • Hydrocarbons[4]. • Nutrients (ammonia, nitrate, nitrite, total Kjeldahl nitrogen, total phosphorous).
SED2	
SW1	
SW2	

In the event of discharge from one or both of the Sediment Dams, sampling is undertaken at the discharge points and the associated background surface water locations. Analyses comprise field readings, general water quality, dissolved metals, hydrocarbons and nutrients.

Field sheets are presented in **Appendix A** and laboratory reports are included in **Appendix B**.

Results of the water monitoring are compared to criteria as specified in the GMP (Ref [1]) and / or the DVMP (Ref [2]) on a monthly basis and presented to Concrush in a table and graphs.

[3] Aluminium, arsenic, cadmium, chromium, hexavalent chromium, cobalt, copper, lead, nickel, selenium, zinc, boron. Samples are 0.45μm field filtered prior to preservation for metals analyses.

[4] Benzene, toluene, ethylbenzene, xylene, naphthalene (BTEXN), total recoverable hydrocarbons (TRH) and polycyclic aromatic hydrocarbons (PAH).

4. MONITORING RESULTS

4.1 GROUNDWATER

Results of the groundwater monitoring undertaken in the quarter compared to the ecological criteria for fresh and marine waters (Ref [3]) are presented in **Table 3** below. In summary:

- The depth to groundwater varied between April and June at both wells. It is noted that at GW1, the depth was measured from ground level, whereas at GW3, the measurements included the length of the standpipe protruding above ground. Historical assessments indicate that the groundwater flow direction is from the western boundary of the site toward the eastern boundary.
- The temperature of the groundwater measured by the portable meter at the field slightly varied over the monitoring period however not noticeably between the wells.
- At GW1, the pH ranged from slightly acidic to slightly alkaline, while at GW3, it was generally neutral to slightly acidic. It is noted that the May pH data for both wells were obtained from the portable field meter due to a paperwork issue with laboratory sample submission; April and June data came from laboratory analysis.
- The EC in both wells fell within the range indicative of fresh water. It is noted that the May data for both wells were obtained from the portable meter at the field due to the above paperwork issue.
- The turbidity of the groundwater obtained from the portable meter at the field was high at both wells. A non-return foot valve was used to collect the water samples, as alternative methods were not feasible due to kinks in the pipes. RCA personnel took care to avoid contact between the tip of the foot valve and the sediment at the base of the wells however it is considered that the sampling methodology may have increased the turbidity.
- The dissolved oxygen in both wells obtained from the portable meter at the field was low, indicative of anoxic conditions. It is noted that the sampling method can cause higher than representative dissolved oxygen levels.
- Ammonia (as N) and total phosphorus (as P) consistently exceeded the relevant ecological criteria however align with historical data. It is noted that the site is located in the Cockle Creek Estuary catchment that forms part of the broader Lake Macquarie catchment area, an ecosystem known for natural nutrient inflows that can contribute to higher concentrations of nitrogen and phosphorus.
- Nitrate (as N) and NO_x (as N) were either non-detected or at low concentrations below the relevant criteria, consistent with historical data. Low dissolved oxygen levels are considered likely to inhibit the activity of nitrifying bacteria responsible for converting ammonia to nitrite and subsequently to nitrate.
- BTEXN compounds were not detected, consistent with historical data, except at BH3 in May. RCA was concerned about the potential for cross-contamination from another project and therefore undertook re-sampling on 12 June 2025; BTEXN was not present, and it is considered that the May result is unlikely to be representative of groundwater quality.
- TRH was not detected in either well, consistent with historical data, except TRH >C_6-C_{10} (volatile compounds) during the May sampling round at GW3. There were no detected concentrations in the sample on 12 June 2025 and as such the May result is not considered to be representative of the groundwater quality.
- PAH were non-detected, consistent with historical data.

Table 3 *Groundwater Analysis Results.*

Analysis	Aquatic Ecosystem Guideline [A]		GW1			GW3		
Date Sampled	95% Fresh	95% Marine	28/04	30/05	30/06	28/04	30/05	30/06
Depth to Groundwater	--	--	0.71	1.54	2.16	3.00	3.00	3.44
Temperature (°C)	--	--	21.81*	20.61*	17.01*	21.84*	20.64*	17.95*
pH (pH units)	--	--	7.6	5.66*	7.1	6.8	7.0*	6.3
EC (mS/cm)	--	--	0.75	0.45*	1.10	1.30	1.43*	1.30
Turbidity (Nephelometric Turbidity unit)	--	--	278*	637*	>1000*	656*	105*	486*
Dissolved Oxygen	--	--	0.69*	1.31*	1.67*	1.07*	4.95*	5.38*
Ammonia	0.9	0.91	**2.1**	**1.1**	**2.4**	**1.3**	**1.0**	**2.9**
Nitrate	2.4		<0.005	<0.005	0.006	<0.005	<0.005	<0.01
NO_x	0.04		<0.005	<0.005	0.008	0.006	0.009	<0.01
Total Phosphorus	0.025		**0.3**	**0.4**	**0.6**	**0.1**	**0.2**	**0.1**
Benzene	0.95	0.5	--	<0.001	--	--	0.001/<0.001#	--
Toluene	0.18		--	<0.001	--	--	0.002/<0.001#	--
Ethylbenzene	0.08	0.005	--	<0.001	--	--	<0.001/<0.001#	--
Meta- and para-Xylene	0.275		--	<0.002	--	--	0.003/<0.002#	--
Ortho-Xylene	0.35		--	<0.001	--	--	<0.001/<0.001#	--
TRH C_6-C_{40}	0.007		--	<0.26	--	--	0.141/<0.26#	--
Naphthalene	0.016	0.07	--	<0.0001	--	--	0.0003/<0.0001#	--
Phenanthrene [B]	0.002	0.002	--	<0.0001	--	--	<0.0001	--
Anthracene [B]	0.0004	0.0004	--	<0.0001	--	--	<0.0001	--
Fluoranthene [B]	0.0014	0.0014	--	<0.0001	--	--	<0.0001	--
Benzo(a)pyrene [B]	0.0002	0.0002	--	<0.0001	--	--	<0.0001	--

All units in mg/L except where otherwise noted

-- indicates no guidelines applicable and / or analyses not required during the specific month

[A] Criteria from ANZG (Ref [3]) with the exception of NO_x and phosphorus for Lowland Rivers (coastal environment where available)

[B] Bio-accumulative Compounds. Results with '<' below the detection limit

Results shown in **bold** more than 95% freshwater guidelines/ the lowland (coastal) river guidelines

Results shown in underline in excess of 95% marine water guidelines

Data marked with an asterisk (*) were obtained using a portable multiparameter meter (Horiba).

The second value as marked with a hashtag (#) are the results of the re-sample and are considered representative

4.2 SURFACE WATERS

Results of the surface water monitoring undertaken in the quarter compared to the criteria (Ref [2]) are presented in **Table 5** and **Table 4** below. No active flow was observed at SW1 in June 2025; only stagnant water was present, and as a result, no samples were collected.

In summary:

- pH levels remained within the trigger range at LP and WL throughout the quarter, with the exception of a marginal exceedance at LP in June. In contrast, pH consistently exceeded the trigger range at both SED1 and SED2 – except for SED2 in May – indicating alkaline conditions. pH levels at background sites SW1 and SW2 were slightly above the upper trigger value during the April monitoring round but remained within trigger values in all subsequent rounds conducted throughout the quarter.
- No EC values exceeded the trigger value at any location throughout the monitoring period, except for LP and WL in June.
- TSS were considered low to moderate in all samples.
- Ammonia concentrations were above the trigger value at LP and WL throughout the quarter, except for one (1) monitoring event in June at WL. Elevated concentrations were recorded during two (2) events at SED2, and during one (1) event each at SED1 and in the background waters.
    - It is noted that plant matter was difficult to exclude from the WP samples, and any elevated ammonia concentrations observed may, at least in part, reflect this material rather than the actual concentrations in the water.
- Nitrate and NO_x were either undetected or detected at low concentrations below the trigger values at LP and WL during this quarter except for LP in April. Similarly, these parameters exceeded trigger values during this quarter at both SED1 and SED2, with the exception of SED2 in June, while they were detected above the trigger values in one (1) event each in the background waters.
- Total nitrogen and total phosphorus consistently exceeded the trigger values at all monitoring locations except for total phosphorus at SED1 in May and June, and at SW1 in May; the most significant nitrogen compound was total Kjeldahl nitrogen.
- Aluminium exceeded the trigger value in two (2) monitoring events at both SED1 and SED2, while it was either non detected or detected at low concentrations at background waters during the monitoring period except for SW2 in April. Chromium was below the trigger value at all locations throughout the monitoring period except for two (2) events in April and May at SED2. Hexavalent chromium exceeded the trigger value in the Sediment Dams during the monitoring rounds but was not detected in the background waters in any event. Zinc exceeded the trigger value only in SW2 during the May round. The remaining metals were either non-detected or detected at low concentrations well below the respective trigger values at all locations.
- There were no detected hydrocarbons, except for a low concentration (3.3% of the trigger value) at SED2 in June.

Table 4 *Surface Water Analysis Results – Green Waste Catchment*

Analyte	Trigger Values	LP			WL		
Date Sampled		28/04	30/05	30/06	28/04	30/05	30/06
pH (pH units)	6.5-8.0	7.5	7.2	**8.1**	7.2	6.9	7.2
EC (µS/cm)	125-2200	1300	1700	**2300**	790	1900	**2800**
TSS	NA	28	25	58	7	19	18
Ammonia	0.0264	**0.076**	**0.96**	**0.04**	**0.86**	**0.67**	0.008
Nitrate	0.44	**2.1**	<0.01	<0.02	0.18	<0.02	<0.01
NO_x	0.491	**2.4**	<0.01	<0.02	0.3	<0.02	<0.01
Total Nitrogen	0.645	**13**	**8.9**	**12**	**5.9**	**9.8**	**10**
Total Phosphorus	0.0168	**1.7**	**5.0**	**5.5**	**2.3**	**5.1**	**6.4**

All units in mg/L except where otherwise noted

NA - not applicable

Results shown in bold in excess of the trigger values (Ref [2])

Results with '<' are below the detection limit

Table 5 *Surface Water Analysis Results – Remainder of Site*

Analyte	Trigger Values	SED1			SW1			SED2			SW2		
Date Sampled		28/04	30/05	30/06	28/04	30/05	30/06	28/04	30/05	30/06	28/04	30/05	30/06
pH (pH units)	6.5-8.0	**10**	**9.8**	**9.2**	**8.2**	7.4	Stagnant Water – No sample	**10.3**	7.4	**9.3**	**8.3**	7.2	7.7
EC (µS/cm)	125-2200	300	280	350	570	950		500	550	560	590	890	1100
TSS	NA	90	53	29	57	<5		50	42	40	72	5	10
Ammonia	0.0264	0.019	**0.13**	<0.005	<0.005	**1.2**		**0.067**	**0.15**	0.007	<0.005	**0.6**	<0.005
Nitrate	0.44	**0.53**	**0.69**	**1.0**	0.16	**0.5**		**1.9**	**3.3**	<0.02	0.01	<0.005	**2.0**
NO_x	0.491	**0.82**	**1.0**	**1.0**	0.2	**0.54**		**2.8**	**3.3**	<0.02	0.02	0.008	**2.0**
Total Nitrogen	0.645	**1.6**	**1.3**	**1.3**	**1.6**	**0.9**		**5.6**	**3.8**	**3.8**	**1.7**	**1.3**	**4.8**
Total Phosphorus	0.0168	**0.09**	<0.05	<0.05	**0.2**	<0.05		**0.3**	**0.4**	**0.4**	**0.2**	**0.06**	**0.05**
Aluminium	0.08	**0.22**	**0.39**	0.05	0.08	<0.01		**0.22**	**0.13**	0.05	**0.09**	0.01	<0.01
Arsenic	0.094	0.002	0.003	0.004	0.004	0.002		0.01	0.008	0.009	0.003	0.003	0.002
Cadmium	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	0.02	0.018	0.019	0.012	0.002	<0.001		**0.028**	**0.032**	0.019	<0.001	<0.001	<0.001
Hexavalent Chromium	0.0033	**0.02**	**0.02**	**0.01**	<0.005	<0.005		**0.03**	**0.03**	**0.02**	<0.005	<0.005	<0.005
Cobalt	0.015	<0.001	<0.001	<0.001	<0.001	<0.001		0.001	0.002	0.001	<0.001	0.001	<0.001
Copper	0.02	0.005	0.005	0.005	0.005	0.003		0.008	0.011	0.009	0.006	0.002	0.002
Lead	0.0056	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	0.013	<0.001	<0.001	<0.001	0.001	0.002		0.002	0.003	0.002	<0.001	0.002	0.001
Selenium	0.018	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	0.015	<0.001	0.003	0.003	0.01	0.01		0.001	0.003	0.003	0.01	**0.029**	0.01
Boron	0.68	0.06	0.04	0.06	0.31	0.1		0.09	0.06	0.06	0.36	0.1	0.1
TRH C_6-C_{40}	10	<0.26	<0.26	<0.26	<0.26	<0.26		<0.26	<0.26	0.33	<0.26	<0.26	<0.26

All units in mg/L except where otherwise noted

Results shown in **bold** are in excess of the management triggers (Ref [2])

NA – Not applicable

Results with '<' are below the detection limit

4.3 DISCHARGE

The Bureau of Meteorology weather station at Cooranbong recorded a total rainfall of **685.0 mm** during the monitoring period. This was distributed as follows: 228 mm in April, 448.4 mm in May, and 8.6 mm in June. **Figure 3** below illustrates these monthly totals, along with the cumulative rainfall for each month.

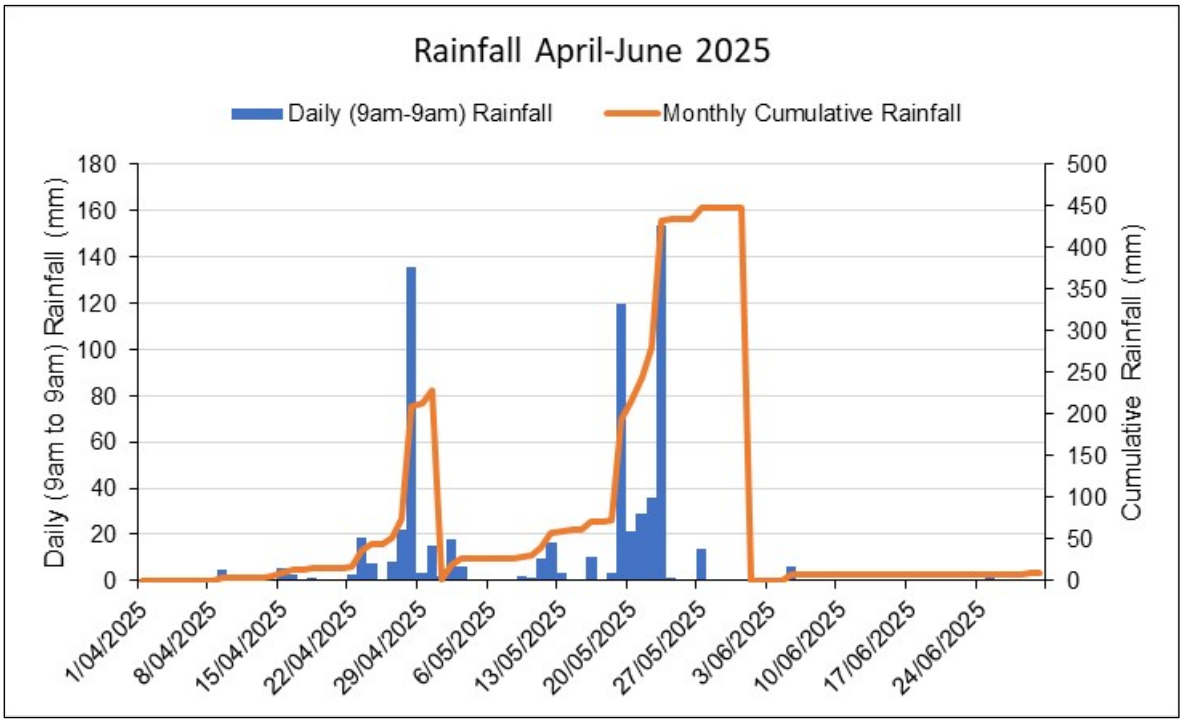


Figure 3 *Rainfall for the Monitoring Period (sourced from Bureau of Meteorology weather station at Cooranbong)*

Two (2) discharge events occurred in the monitoring period: 28th April and 20th May 2025 (157.2 mm and 141.2 mm as at 9 a.m. respectively) from both sediment dams. Samples were also collected at SW1 and SW2 during the discharge events. **Table 6** presents water quality data for the discharge at the spillways and background surface waters.

Table 6 *Discharge and Background Water Quality*

Parameters	Trigger values	DIS-SED1	SW1	DIS-SED2	SW2	DIS-SED1	SW1	DIS-SED2	SW2
Date Sampled		28th April 2025				20th May 2025			
pH (pH units)	6.5-8.0	**8.2**	**8.2**	**10.3**	**8.3**	7.8	7.9	**10**	7.6
EC (µS/cm)	125-2200	600	570	490	590	500	480	520	520
TSS	NA	48	57	46	72	84	85	180	100
Ammonia	0.0264	<0.005	<0.005	**0.18**	<0.005	0.008	0.006	<0.005	0.01
Nitrate as N	0.44	0.19	0.16	**2.1**	0.01	0.17	0.13	**1.7**	0.096
NO_x as N	0.491	0.3	0.2	**3.1**	0.02	0.18	0.17	**2.5**	0.11
Total N	0.645	**1.8**	**1.6**	**6.0**	**1.7**	**1.1**	**1.1**	**3.0**	**1.0**
Total Phosphorus as P	0.0168	**0.2**	**0.2**	**0.3**	**0.2**	**0.2**	**0.2**	**0.4**	**0.2**
Aluminium	0.08	0.07	0.08	**0.21**	**0.09**	**0.17**	**0.14**	**0.15**	**0.15**
Arsenic	0.094	0.003	0.004	0.009	0.003	0.003	0.004	0.008	0.003
Cadmium	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	0.02	0.002	0.002	**0.03**	<0.001	0.003	0.004	**0.023**	0.002
Hexavalent Chromium	0.0033	<0.005	<0.005	**0.03**	<0.005	<0.005	<0.005	**0.03**	<0.005
Cobalt	0.015	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	0.02	0.005	0.005	0.01	0.006	0.006	0.013	**0.025**	0.014
Lead	0.0056	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	0.001	<0.001
Nickel	0.013	0.001	0.001	0.002	<0.001	0.001	0.001	0.003	0.002
Selenium	0.018	<0.001	<0.001	<0.001	<0.001	0.002	0.002	<0.001	0.002
Zinc	0.015	0.007	0.01	<0.001	0.01	0.014	**0.023**	0.004	**0.036**
Boron	0.68	0.34	0.31	0.08	0.36	0.23	0.23	0.08	0.21
TRH C_6-C_{40}	10	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26

All unit in mg/L where otherwise noted. NA indicates no trigger values applied.

Results shown in **bold** are in excess of the management triggers (Ref [2]) and results with '<' are below the detection limits.

In summary:

- pH was more alkaline than the trigger range at all locations in the first discharge event but only at DIS-SED2 in the second.
- Nitrate and NO_x exceeded their respective trigger values only at DIS-SED2 during both discharge events, while ammonia exceeded its trigger value at this location only during the first discharge event.
- Total nitrogen and total phosphorus were in excess of their respective trigger values at all locations in both discharge events.
- Aluminium was in excess of the trigger value at only DIS-SED2 and SW2 in the first event and at all locations during the second event.
- Chromium and hexavalent chromium exceeded their respective trigger values only at DIS-SED2 in both events.
- Copper was in excess of the trigger value at only DIS-SED2 in the second discharge event.
- Zinc exceeded the trigger value only at background waters SW1 and SW2 in the second discharge event.

5. CONCLUSIONS AND RECOMMENDATIONS

Water monitoring was undertaken at the Concrush Resource Recovery Facility through the April-June 2025 quarter in general compliance with the requirements of the EPL and relevant management plans (Ref [1] and Ref [2]). The absence of samples in June at SW1 due to stagnant water is not considered to represent non-compliance.

The following conclusions have been made with respect to this quarter's monitoring events:

- Elevated concentrations of ammonia and phosphorous were identified in groundwater exceeding their respective ecological guidelines (Ref [2]) at both GW1 and GW3. The guidelines are not directly relevant to groundwater and rather are relevant to the receiving water, considered to be Cockle Creek. The quarter's results are consistent with the historical results, including those prior to the commencement of operations in the southern portion of the site, and the results are not considered to indicate any potential impact from the LP or SED2, and are rather considered to be representative of the groundwater characteristics within former wetlands.
- There are no indications of hydrocarbon contamination in the groundwater. The volatile hydrocarbons detected at GW3 on 30th May 2025is considered likely to be an error during sampling; resampling on 12th June 2025 confirmed the volatile hydrocarbons were not present.
- The pH results at LP and WL were generally neutral, except during the June monitoring round at LP, where the pH was marginally above the upper trigger value.
- Nutrient concentrations at LP and WL exceeded the trigger values in all the sampling rounds; the dominant form of nitrogen was organic nitrogen. It is noted that some vegetation in the WL samples may be impacting the nitrogen results.
- The pH results for both Sediment Dams were more alkaline than the trigger range in all sampling rounds, except for SED2 during the May round. Within the background waters, pH values remained within the trigger range at both locations, except during the April monitoring round, which coincided with the first discharge event.

- Nutrient concentrations at both Sediment Dams exceeded their respective trigger values throughout the quarter except for total phosphorus at SED1 in the May and June monitoring rounds. The available data for the background waters indicated lesser concentrations (except for total phosphorus at SW1 in all monitoring rounds) however the majority were in excess of the trigger values.
- Exceedances of hexavalent chromium trigger value were observed in the Sediment Dams throughout this quarter while chromium was in excess of the trigger value only at SED2 in the April and May rounds; however, these exceedances were not identified in the available background water data. Aluminium exceeded the trigger value in the April and May monitoring rounds at both sediment dams, and one exceedance was identified at SW1 in the April round, which coincided with the first discharge event. In the background waters, zinc exceeded the trigger value only during the May monitoring round. All other metals were either not detected or detected at low concentrations below their respective trigger values.
- Two (2) discharge events occurred during the quarter. Surface water management at the site successfully prevented discharge during other rainfall events. During the two (2) events, pH, nutrients, aluminium, chromium, and hexavalent chromium exceeded their respective trigger values at the spillways. While pH and nutrient levels in the background waters increased slightly during the discharge events, the discharge is not considered to have had a significant impact on the receiving environment due to the limited volume released off-site.

Water monitoring will continue during the next quarter in accordance with the GMP (Ref [1]) and the DVMP (Ref [2]). The next quarterly report will be prepared after the completion of the September 2025 sampling.

Yours faithfully

RCA AUSTRALIA

Dr. Anh Hoang
Environmental Scientist
B.S. & M.S.(Env Sci); PhD(Enviro. Remediation)

LIMITATIONS

This report has been prepared for Concrush Pty Ltd in accordance with an agreement with RCA Australia (RCA). The services performed by RCA have been conducted in a manner consistent with that generally exercised by members of its profession and consulting practice.

This report has been prepared for the sole use of Concrush Pty Ltd. The report may not contain sufficient information for purposes of other uses or for parties other than Concrush Pty Ltd. This report shall only be presented in full and may not be used to support objectives other than those stated in the report without written permission from RCA Australia.

The information in this report is considered accurate at the date of issue with regard to the current conditions of the site. Conditions can vary across any site that cannot be explicitly defined by investigation. Please contact the undersigned if you have any queries.

Environmental conditions including contaminant concentrations can change in a limited period of time. This should be considered if the report is used following a significant period of time after the date of issue.

REFERENCES

[1] RCA Australia, *Groundwater Management Plan, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA ref 13589-805/1, September 2020.

[2] ENGENY, *Concrush Pty Ltd, Discharge Verification and Mitigation Report,* February 2024.

[3] ANZG, Australian and New Zealand Guidelines for Fresh and Marine Water Quality Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia., August 2018. Available at www.waterquality.gov.au/anz-guidelines.

Appendix A

Field Sheets

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

ENGINEERING FIELD SHEET
WATER SAMPLING RECORD

CLIENT: Concrush Pty Ltd
PROJECT: Water Quality Monitoring
LOCATION: 21 Racecourse Road, Teralba
PERSONNEL: AM / SM

DATE: 28.4.25
PROJECT No: 13589a
CLIENT REF:

WATER METER USED: Horiba
DATE & TYPE OF LAST CALIBRATION (1PT OR FULL): Full – refer to Environment Drive for Calibration Certified
METHOD OF SAMPLING: Foot valve for Groundwater, direct for Ponds, Wetland, Basins and Surface Water
PRESERVATION & STORAGE (TICK): **Chilled (<4°C)** ☐

TESTS REQUIRED:
Groundwater: Nutrients each month, TRH, PAH and BTEX every 3 months.
Leachate Pond and Wetland: , EC, TSS and Nutrients every month.
Sediment Basins: pH, EC, TSS, metals (dissolved) and TRH every month.
Spillways: , EC, TSS, metals (dissolved) and TRH when discharging.
Background Surface water: pH, EC, TSS, metals (dissolved) and TRH every month.

Get Key for side gate from weighbridge to get to SW2

OTHER DETAILS: **Refer to Duplicate Register – name duplicate QAMonthYear.**

BORE OR LOCATION ID: BH3 (Eastern end – adjacent Racecourse Road) Label bottles 'GW3'
TIME: 9:50 **TO** 10:10
BORE DEPTH: 5.10 m **HEIGHT ABOVE GROUND LEVEL:** 0.90 m
DEPTH TO AQUIFER: 3.00 m **VOLUME PURGED:** 8L
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/ +4L	6.74	1.46	551	9.08	21.58	0.073
2/ +2L	6.71	1.41	900	9.54	21.99	0.070
3/ +2L	6.73	1.41	656	9.07	21.84	0.070
4/						
5/						
6/						

Sample Appearance: Grey, turbid, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Leachate Pond (Eastern end – adjacent Racecourse Road). Sample at outlet to Wetland Pond. Label bottles 'LP'
TIME: 10:00 **TO** 10:40
If discharge not running, remove the cord from time and put directly into power.
At the completion of sampling, return the time to the system.
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.3	1.46	85	0.86	19.00	0.073
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale yellow, clear, no odour
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Wetland (Eastern end – adjacent Racecourse Road). Label bottles 'WL'
TIME: 9:35 **TO** 9:41

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.33	0.784	15.5	5.68	18.37	0.038
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale yellow, clear, floating green algae, sulphide odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 2 (South west corner – adjacent railway). Label bottles 'Sed2'
TIME: 10:35 **TO** 10:45

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	9.94	0.509 ms/cm	154	4.38	20.00	0.024
2/						
3/						
4/						
5/						
6/						

Sample Appearance: pale brown, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Discharge of Sediment 2. Label bottles 'DIS-Sed2'
TIME: **TO** **WATCH for SNAKES**
May have to get sample from outside fence

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	10.17	0.525	185	4.52	20.59	0.025
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale yellow, clear, no odour
Duplicate Identification and Other Remarks:
1 bottle for BTEX was cracking

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: SW2 (Western end, south of site boundary, down ladder). Label bottles 'SW2'
TIME: 11:43 **TO** 11:55
WATCH for SNAKES
Be careful – poor footing

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	8.49	0.635	140	3.31	22.19	0.031
2/						
3/						
4/						
5/						
6/						

Sample Appearance: light brown, slightly turbid, no odour
Duplicate Identification and Other Remarks: Duplicate here. (QA 0425)

BORE OR LOCATION ID: BH1 (Western end – adjacent Railway) Label bottles 'GW1'
TIME: 10:22 **TO** 10:33
BORE DEPTH: 4.76 **HEIGHT ABOVE GROUND LEVEL:** @ GL
DEPTH TO AQUIFER: 0.71 **VOLUME PURGED:** 8 L
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.67	0.810 ms/cm	136	2.33	21.44	0.040
2/ +8	7.60	0.784	265	1.39	21.55	0.038
3/ +8	7.58	0.777	278	0.69	21.81	0.038
4/						
5/						
6/						

Sample Appearance: Turbid grey - slight odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 1 (North west corner – adjacent railway). Label bottles 'Sed1'
TIME: 12:19 **TO** 12:40

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	9.85	0.299	427	4.40	21.00	0.014
2/						
3/						
4/						
5/						
6/						

Sample Appearance: pale brown, turbid, no odour.
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Discharge of Sediment 1. Label bottles 'DIS-Sed1'
TIME: 12:20 **TO** 12:30
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	8.33	0.621	112	4.58	21.43	0.030
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Grey, slightly turbid, no odour
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: SW1 (Western side of Racecourse Road, north of rail access drive). Label bottles 'SW'
TIME: 12:56 **TO** 13:09
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	9.31	0.609	116	5.10	20.72	0.029
2/						
3/						
4/						
5/						
6/						

Sample Appearance: pale brown, turbid, no odour
Duplicate Identification and Other Remarks: _____

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

ENGINEERING FIELD SHEET
WATER SAMPLING RECORD

CLIENT: Concrush Pty Ltd
PROJECT: Water Quality Monitoring
LOCATION: 21 Racecourse Road, Teralba
PERSONNEL: AM / DB

DATE: 20.5.21
PROJECT No: 13589a
CLIENT REF: _____

WATER METER USED: Horiba
DATE & TYPE OF LAST CALIBRATION (1PT OR FULL): Full – refer to Environment Drive for Calibration Certified
METHOD OF SAMPLING: Foot valve for Groundwater, direct for Ponds, Wetland, Basins and Surface Water
PRESERVATION & STORAGE (TICK): **Chilled (<4°C)** ☐

TESTS REQUIRED:
Groundwater: Nutrients each month, TRH, PAH and BTEX every 3 months.
Leachate Pond and Wetland: , EC, TSS and Nutrients every month.
Sediment Basins: pH, EC, TSS, metals (dissolved) and TRH every month.
Spillways: , EC, TSS, metals (dissolved) and TRH when discharging.
Background Surface water: pH, EC, TSS, metals (dissolved) and TRH every month.

Get Key for side gate from weighbridge to get to SW2

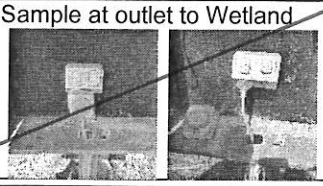
OTHER DETAILS: **Refer to Duplicate Register – name duplicate QAMonthYear.**

BORE OR LOCATION ID: BH3 (Eastern end – adjacent Racecourse Road) Label bottles 'GW3'
TIME: _____ **TO** _____
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: Leachate Pond (Eastern end – adjacent Racecourse Road). Sample at outlet to Wetland Pond. Label bottles 'LP'
TIME: _____ **TO** _____
If discharge not running, remove the cord from time and put directly into power.
At the completion of sampling, return the time to the system.
RESULTS OF WATER QUALITY CHECK: _____



Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Wetland (Eastern end – adjacent Racecourse Road). Label bottles 'WL'
TIME: _____ **TO** _____

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 2 (South west corner – adjacent railway). Label bottles 'Sed2'
TIME: _____ **TO** _____

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Discharge of Sediment 2. Label bottles 'DIS-Sed2'
TIME: 11:50 **TO** 12:10 **WATCH for SNAKES**
May have to get sample from outside fence

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	9.91	0.502	496	4.79	16.75	0.024
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Grey, turbid, no odour
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: SW2 (Western end, south of site boundary, down ladder). Label bottles 'SW2'
TIME: 12:40 **TO** 12:30
WATCH for SNAKES
Be careful – poor footing

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.77	0.570	186	3.39	16.7	0.02
2/						
3/						
4/						
5/						
6/						

Sample Appearance: light brown, turbid, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: BH1 (Western end – adjacent Railway) Label bottles 'GW1'
TIME: **TO**
BORE DEPTH: **HEIGHT ABOVE GROUND LEVEL:**
DEPTH TO AQUIFER: **VOLUME PURGED:**
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 1 (North west corner – adjacent railway). Label bottles 'Sed1'
TIME: **TO**

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Discharge of Sediment 1. Label bottles 'DIS-Sed1'
TIME: 11:00 **TO** 11:20
BORE DEPTH: – **HEIGHT ABOVE GROUND LEVEL:** –
DEPTH TO AQUIFER: – **VOLUME PURGED:** –
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.38	0.498	189	4.76	16.96	0.024
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale yellow, slightly turbid, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: SW1 (Western side of Racecourse Road, north of rail access drive). Label bottles 'SW'
TIME: 12:45 **TO** 13:00
BORE DEPTH: **HEIGHT ABOVE GROUND LEVEL:**
DEPTH TO AQUIFER: **VOLUME PURGED:**
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.89	0.493	201	3.68	16.59	0.024
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale yellow, slightly turbid, no odour
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

ENGINEERING FIELD SHEET
WATER SAMPLING RECORD

CLIENT: Concrush Pty Ltd
DATE: 30.5.25
PROJECT: Water Quality Monitoring
PROJECT No: 13589a
LOCATION: 21 Racecourse Road, Teralba
CLIENT REF:
PERSONNEL: MH

WATER METER USED: Horiba
DATE & TYPE OF LAST CALIBRATION (1PT OR FULL): Full – refer to Environment Drive for Calibration Certified
METHOD OF SAMPLING: Foot valve for Groundwater, direct for Ponds, Wetland, Basins and Surface Water
PRESERVATION & STORAGE (TICK): **Chilled (<4°C)** ☐

TESTS REQUIRED:
Groundwater: Nutrients each month, TRH, PAH and BTEX every 3 months.
Leachate Pond and Wetland: , EC, TSS and Nutrients every month.
Sediment Basins: pH, EC, TSS, metals (dissolved) and TRH every month.
Spillways: , EC, TSS, metals (dissolved) and TRH when discharging.
Background Surface water: pH, EC, TSS, metals (dissolved) and TRH every month.

Get Key for side gate from weighbridge to get to SW2

OTHER DETAILS: **Refer to Duplicate Register – name duplicate QAMonthYear.**

BORE OR LOCATION ID: BH3 (Eastern end – adjacent Racecourse Road) Label bottles 'GW3'
TIME: 10.30AM **TO** 11.03AM
BORE DEPTH: 5.6M **HEIGHT ABOVE GROUND LEVEL:**
DEPTH TO AQUIFER: 3.0M **VOLUME PURGED:** 4L
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.37	1.34	80.3	1.89	20.06	0.067
2/	7.21	1.45	95.0	4.40	20.54	0.073
3/	7.06	1.43	103	5.04	20.72	0.072
4/	7.01	1.43	105	4.95	20.64	0.072
5/						
6/						

Sample Appearance: clear & Turbid, pale brown, no odor.
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Leachate Pond (Eastern end – adjacent Racecourse Road). Sample at outlet to Wetland Pond. Label bottles 'LP'
TIME: 11.09AM **TO** 11:17
If discharge not running, remove the cord from time and put directly into power.
At the completion of sampling, return the time to the system.
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.83	1.76	55.1	1.96	19.20	0.089
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Turbid, dark brown, no odor.
Duplicate Identification and Other Remarks:

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Wetland (Eastern end – adjacent Racecourse Road). Label bottles 'WL'
TIME: 11:31 Am **TO** _____

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.71	1.94	580	0.35	17.62	0.099
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Turbid, brown, no odour.
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: Sediment Dam 2 (South west corner – adjacent railway). Label bottles 'Sed2'
TIME: 12:48 **TO** _____

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	5.75	0.540	96.8	3.03	17.99	0.026
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: Discharge of Sediment 2. Label bottles 'DIS-Sed2'
TIME: _____ **TO** _____

WATCH for SNAKES

May have to get sample from outside fence

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: SW2 (Western end, south of site boundary, down ladder). Label bottles 'SW2'
TIME: 1:49 pm **TO** _____

WATCH for SNAKES
Be careful – poor footing

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	5.93	0.426	11.2	2.02	20.43	0.026
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Turbid, pale brown, no odour
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: BH1 (Western end – adjacent Railway) Label bottles 'GW1'
TIME: 12:08 **TO** _____
BORE DEPTH: 4.75m **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: 1.54m **VOLUME PURGED:** 5L
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	5.15	0.444	328	3.24	20.8	0.021
2/	5.60	0.447	682	1.72	20.65	0.021
3/	5.66	0.446	637	1.31	20.61	0.021
4/						
5/						
6/						

Sample Appearance: Turbid, pale brown, no odour
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: Sediment Dam 1 (North west corner – adjacent railway). Label bottles 'Sed1'
TIME: 1:10 pm **TO** _____

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	5.61	0.293	121	4.37	18.46	0.014
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Turbid, pale brown no odour.
Duplicate Identification and Other Remarks: _____

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

BORE OR LOCATION ID: Discharge of Sediment 1. Label bottles 'DIS-Sed1'
TIME: _____ **TO** _____
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: SW1 (Western side of Racecourse Road, north of rail access drive). Label bottles 'SW'
TIME: 2.09 pm **TO** 2.26 pm
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.62	0.988	22	2.51	18.17	0.049
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Slightly Turbid, pale brown, no odour
Duplicate Identification and Other Remarks: _____

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

ENGINEERING FIELD SHEET
WATER SAMPLING RECORD

CLIENT: Concrush Pty Ltd
PROJECT: Water Quality Monitoring
LOCATION: 21 Racecourse Road, Teralba
PERSONNEL:

DATE: 30/6/25
PROJECT No: 13589a
CLIENT REF:

WATER METER USED: Horiba
DATE & TYPE OF LAST CALIBRATION (1PT OR FULL): Full – refer to Environment Drive for Calibration Certified
METHOD OF SAMPLING: Foot valve for Groundwater, direct for Ponds, Wetland, Basins and Surface Water
PRESERVATION & STORAGE (TICK): **Chilled (<4°C)** ☐

TESTS REQUIRED:
Groundwater: Nutrients each month, TRH, PAH and BTEX every 3 months.
Leachate Pond and Wetland: , EC, TSS and Nutrients every month.
Sediment Basins: pH, EC, TSS, metals (dissolved) and TRH every month.
Spillways: , EC, TSS, metals (dissolved) and TRH when discharging.
Background Surface water: pH, EC, TSS, metals (dissolved) and TRH every month.

Get Key for side gate from weighbridge to get to SW2

OTHER DETAILS: **Refer to Duplicate Register – name duplicate QAMonthYear.**

BORE OR LOCATION ID: BH3 (Eastern end – adjacent Racecourse Road) Label bottles 'GW3'
TIME: 10:00 **TO** 10.20 am
BORE DEPTH: 5.09 **HEIGHT ABOVE GROUND LEVEL:** 0.82
DEPTH TO AQUIFER: 3.44 **VOLUME PURGED:** 4L
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/ +2L	5.23	1.70	461	1.77	17.44	0.085
2/ +1L	5.36	1.70	651	12.3	18.61	0.086
3/ +1L	5.50	1.68	486	5.38	17.95	0.085
4/						
5/						
6/						

Sample Appearance: Grey ; turbid ; no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Leachate Pond (Eastern end – adjacent Racecourse Road). Sample at outlet to Wetland Pond. Label bottles 'LP'
TIME: 9.50 **TO** 10.00
If discharge not running, remove the cord from time and put directly into power.
At the completion of sampling, return the time to the system.
RESULTS OF WATER QUALITY CHECK:


Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.86	241	103	2.88	12.03	0.122
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Brown colour, slightly turbid with floats & algae
Duplicate Identification and Other Remarks:

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BORE OR LOCATION ID: Wetland (Eastern end – adjacent Racecourse Road). Label bottles 'WL'
TIME: 9:35 **TO** 9:45

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.97	2.68	13.5	2.09	16.76	0.137
2/						
3/						
4/						
5/						
6/		Yellow				

Sample Appearance: ~~Clear~~, with floating algae, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 2 (South west corner – adjacent railway). Label bottles 'Sed2'
TIME: 10:55 **TO** 11:20

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.58	0.548	74.1	7.8	13.85	0.026
2/						
3/						
4/						
5/						
6/						

Sample Appearance: Pale grey, slightly turbid, no odour
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Discharge of Sediment 2. Label bottles 'DIS-Sed2'
TIME: **TO** No discharge **WATCH for SNAKES**
May have to get sample from outside fence

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance:
Duplicate Identification and Other Remarks:

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BORE OR LOCATION ID: SW2 (Western end, south of site boundary, down ladder). Label bottles 'SW2'
TIME: 11.30am **TO** 11.45am
WATCH for SNAKES
Be careful – poor footing

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	6.08	1.14	29	3.17	14.16	0.056
2/						
3/						
4/						
5/						
6/						

Sample Appearance: clear water
Duplicate Identification and Other Remarks: QA 0625 collected

BORE OR LOCATION ID: BH1 (Western end – adjacent Railway) Label bottles 'GW1'
TIME: 10.55 **TO** 11.25
BORE DEPTH: 4.76 **HEIGHT ABOVE GROUND LEVEL:** NA
DEPTH TO AQUIFER: 2.16m **VOLUME PURGED:**
RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	5.80	1.12	>1000	1.39	16.35	0.055
2/	5.88	1.12	>1000	2.07	16.87	0.056
3/	5.76	1.13		1.67	17.01	0.056
4/						
5/						
6/						

Sample Appearance: Dark brown water
Duplicate Identification and Other Remarks:

BORE OR LOCATION ID: Sediment Dam 1 (North west corner – adjacent railway). Label bottles 'Sed1'
TIME: 12.00 **TO** 12:20

RESULTS OF WATER QUALITY CHECK:

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/	7.44	0.353	71.3	6.29	13.77	0.017
2/						
3/						
4/						
5/						
6/						

Sample Appearance: grey turbid, no odour
Duplicate Identification and Other Remarks:

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BORE OR LOCATION ID: Discharge of Sediment 1. Label bottles 'DIS-Sed1'
TIME: _____ **TO** _____ No discharge
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

BORE OR LOCATION ID: SW1 (Western side of Racecourse Road, north of rail access drive). Label bottles 'SW'
TIME: _____ **TO** _____ Stagnant water - no sample
BORE DEPTH: _____ **HEIGHT ABOVE GROUND LEVEL:** _____
DEPTH TO AQUIFER: _____ **VOLUME PURGED:** _____
RESULTS OF WATER QUALITY CHECK: _____

Check No.	pH	Conductivity (mS/cm)	Turbidity	Dissolved O_2 (mg/L)	Temperature (°C)	Salinity (%)
1/						
2/						
3/						
4/						
5/						
6/						

Sample Appearance: _____
Duplicate Identification and Other Remarks: _____

Appendix B

Laboratory Report Sheets

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 379078

Client Details

Client	RCA Australia
Attention	RCA Administrator
Address	PO Box 175, Carrington, NSW, 2294

Sample Details

Your Reference	**13589a**
Number of Samples	11 Water
Date samples received	28/04/2025
Date completed instructions received	29/04/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/05/2025
Date of Issue	06/05/2025

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Giovanni Agosti, Group Technical Manager
Laura Schofield, Lab Manager
Nick Sarlamis, Assistant Operation Manager
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		379078-5	379078-6	379078-7	379078-8	379078-9
Your Reference	UNITS	Sed-2	SW2	Sed-1	SW1	QA0425
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	29/04/2025	29/04/2025	29/04/2025	29/04/2025	29/04/2025
Date analysed	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	106	106	107	107	105
Surrogate Toluene-d8	%	98	98	98	98	97
Surrogate 4-Bromofluorobenzene	%	95	92	94	95	92

vTRH(C6-C10)/BTEXN in Water			
Our Reference		379078-10	379078-11
Your Reference	UNITS	Dis-Sed1	Dis-Sed2
Date Sampled		28/04/2025	28/04/2025
Type of sample		Water	Water
Date extracted	-	29/04/2025	29/04/2025
Date analysed	-	30/04/2025	30/04/2025
TRH C_6 - C_9	µg/L	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Naphthalene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	107	107
Surrogate Toluene-d8	%	97	98
Surrogate 4-Bromofluorobenzene	%	96	94

svTRH (C10-C40) in Water						
Our Reference		379078-5	379078-6	379078-7	379078-8	379078-9
Your Reference	UNITS	Sed-2	SW2	Sed-1	SW1	QA0425
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
Date analysed	-	30/04/2025	30/04/2025	30/04/2025	01/05/2025	01/05/2025
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	100	99	97	90	93

svTRH (C10-C40) in Water			
Our Reference		379078-10	379078-11
Your Reference	UNITS	Dis-Sed1	Dis-Sed2
Date Sampled		28/04/2025	28/04/2025
Type of sample		Water	Water
Date extracted	-	30/04/2025	30/04/2025
Date analysed	-	01/05/2025	01/05/2025
TRH C_{10} - C_{14}	µg/L	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50
Surrogate o-Terphenyl	%	87	95

HM in water - dissolved						
Our Reference		379078-5	379078-6	379078-7	379078-8	379078-9
Your Reference	UNITS	Sed-2	SW2	Sed-1	SW1	QA0425
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	01/05/2025	01/05/2025	01/05/2025	01/05/2025	01/05/2025
Date analysed	-	01/05/2025	01/05/2025	01/05/2025	01/05/2025	01/05/2025
Aluminium-Dissolved	µg/L	220	90	220	80	70
Arsenic-Dissolved	µg/L	10	3	2	4	3
Boron-Dissolved	µg/L	90	360	60	310	370
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	28	<1	18	2	<1
Cobalt-Dissolved	µg/L	1	<1	<1	<1	<1
Copper-Dissolved	µg/L	8	6	5	5	6
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Nickel-Dissolved	µg/L	2	<1	<1	1	<1
Selenium-Dissolved	µg/L	<1	<1	<1	<1	<1
Zinc-Dissolved	µg/L	1	10	<1	10	10

HM in water - dissolved			
Our Reference		379078-10	379078-11
Your Reference	UNITS	Dis-Sed1	Dis-Sed2
Date Sampled		28/04/2025	28/04/2025
Type of sample		Water	Water
Date prepared	-	01/05/2025	01/05/2025
Date analysed	-	01/05/2025	01/05/2025
Aluminium-Dissolved	µg/L	70	210
Arsenic-Dissolved	µg/L	3	9
Boron-Dissolved	µg/L	340	80
Cadmium-Dissolved	µg/L	<0.1	<0.1
Chromium-Dissolved	µg/L	2	30
Cobalt-Dissolved	µg/L	<1	1
Copper-Dissolved	µg/L	5	10
Lead-Dissolved	µg/L	<1	<1
Nickel-Dissolved	µg/L	1	2
Selenium-Dissolved	µg/L	<1	<1
Zinc-Dissolved	µg/L	7	<1

Metals in Waters - Acid extractable						
Our Reference		379078-1	379078-2	379078-3	379078-4	379078-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
Date analysed	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
Phosphorus - Total	mg/L	0.3	0.1	1.7	2.3	0.3

Metals in Waters - Acid extractable						
Our Reference		379078-6	379078-7	379078-8	379078-9	379078-10
Your Reference	UNITS	SW2	Sed-1	SW1	QA0425	Dis-Sed1
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
Date analysed	-	30/04/2025	30/04/2025	30/04/2025	30/04/2025	30/04/2025
Phosphorus - Total	mg/L	0.2	0.09	0.2	0.2	0.2

Metals in Waters - Acid extractable		
Our Reference		379078-11
Your Reference	UNITS	Dis-Sed2
Date Sampled		28/04/2025
Type of sample		Water
Date prepared	-	30/04/2025
Date analysed	-	30/04/2025
Phosphorus - Total	mg/L	0.3

Miscellaneous Inorganics						
Our Reference		379078-1	379078-2	379078-3	379078-4	379078-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	29/04/2025	29/04/2025	29/04/2025	29/04/2025	29/04/2025
Date analysed	-	29/04/2025	29/04/2025	29/04/2025	29/04/2025	29/04/2025
Ammonia as N in water	mg/L	2.1	1.3	0.076	0.86	0.067
Nitrite as N in water	mg/L	<0.005	<0.005	0.31	0.10	0.94
Nitrate as N in water	mg/L	<0.005	<0.005	2.1	0.18	1.9
NOx as N in water	mg/L	<0.005	0.006	2.4	0.3	2.8
TKN in water	mg/L	[NA]	[NA]	11	5.6	2.8
Total Nitrogen in water	mg/L	[NA]	[NA]	13	5.9	5.6
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	[NA]	[NA]	[NA]	[NA]	0.03

Miscellaneous Inorganics						
Our Reference		379078-6	379078-7	379078-8	379078-9	379078-10
Your Reference	UNITS	SW2	Sed-1	SW1	QA0425	Dis-Sed1
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	29/04/2025	29/04/2025	29/04/2025	29/04/2025	29/04/2025
Date analysed	-	29/04/2025	29/04/2025	29/04/2025	29/04/2025	29/04/2025
Ammonia as N in water	mg/L	<0.005	0.019	<0.005	<0.005	<0.005
Nitrite as N in water	mg/L	0.005	0.29	0.065	<0.005	0.076
Nitrate as N in water	mg/L	0.01	0.53	0.16	0.01	0.19
NOx as N in water	mg/L	0.02	0.82	0.2	0.01	0.3
TKN in water	mg/L	1.7	0.8	1.3	1.5	1.5
Total Nitrogen in water	mg/L	1.7	1.6	1.6	1.6	1.8
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	<0.005	0.02	<0.005	<0.005	<0.005

Miscellaneous Inorganics		
Our Reference		379078-11
Your Reference	UNITS	Dis-Sed2
Date Sampled		28/04/2025
Type of sample		Water
Date prepared	-	29/04/2025
Date analysed	-	29/04/2025
Ammonia as N in water	mg/L	0.18
Nitrite as N in water	mg/L	1.0
Nitrate as N in water	mg/L	2.1
NOx as N in water	mg/L	3.1
TKN in water	mg/L	2.9
Total Nitrogen in water	mg/L	6.0
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.03

Miscellaneous Inorganics						
Our Reference		379078-1	379078-2	379078-3	379078-4	379078-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Date analysed	-	28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Total Suspended Solids	mg/L	[NA]	[NA]	28	7	50
pH	pH Units	7.6	6.8	7.5	7.2	10.3
Electrical Conductivity	µS/cm	750	1,300	1,300	790	500

Miscellaneous Inorganics						
Our Reference		379078-6	379078-7	379078-8	379078-9	379078-10
Your Reference	UNITS	SW2	Sed-1	SW1	QA0425	Dis-Sed1
Date Sampled		28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Date analysed	-	28/04/2025	28/04/2025	28/04/2025	28/04/2025	28/04/2025
Total Suspended Solids	mg/L	72	90	57	76	48
pH	pH Units	8.3	10.0	8.2	8.2	8.2
Electrical Conductivity	µS/cm	590	300	570	590	600

Miscellaneous Inorganics		
Our Reference		379078-11
Your Reference	UNITS	Dis-Sed2
Date Sampled		28/04/2025
Type of sample		Water
Date prepared	-	28/04/2025
Date analysed	-	28/04/2025
Total Suspended Solids	mg/L	46
pH	pH Units	10.3
Electrical Conductivity	µS/cm	490

Method ID	Methodology Summary
Ext-073_F	Analysis of pH in Water by AS 4500 H+ B and in-house method ENV-LAB006, Analysed by Envirolab Newcastle
Ext-073_G	Analysis of Conductivity in Water by AS 2510 B and in-house method ENV-LAB010, Analysed by Envirolab Newcastle
Ext-073_J	Analysis of Total Suspended Solids in Water by AS 2540 D and in-house method ENV-LAB009, Analysed by Envirolab Newcastle
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-118	Hexavalent Chromium (Cr6+) - determined firstly by separation using ion chromatography followed by the colourimetric analytical finish. Water samples are ideally field filtered into alkali preserved containers prior to receipt for dissolved Cr6+ analysis. Unfiltered water samples into alkali preserved containers (or pH adjusted to pH 8-9 on receipt) can be classified as Total (unfiltered) Cr6+. Please note, for 'Total/Unfiltered' Trivalent Chromium in waters [calculated], these results may be exaggerated due to the digestive limitation of 'Total/Unfiltered' Hexavalent Chromium in NaOH at pH 8-9 compared to more comprehensive digestion for Total Chromium using the mineral acids HNO3 and HCl. Solid (includes soils, filters, paints, swabs for example) samples are extracted in a buffered catalysed solution prior to the analytical finish above. Water extractable options are available (e.g. as an option for filters) on request. Impingers may need pH adjusting to pH 8-9 prior to IC-colourimetric analytical finish.
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stochiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			29/04/2025	5	29/04/2025	30/04/2025		29/04/2025	[NT]
Date analysed	-			30/04/2025	5	30/04/2025	01/05/2025		30/04/2025	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	5	<10	<10	0	88	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	5	<10	<10	0	88	[NT]
Benzene	µg/L	1	Org-023	<1	5	<1	<1	0	90	[NT]
Toluene	µg/L	1	Org-023	<1	5	<1	<1	0	89	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	5	<1	<1	0	87	[NT]
m+p-xylene	µg/L	2	Org-023	<2	5	<2	<2	0	88	[NT]
o-xylene	µg/L	1	Org-023	<1	5	<1	<1	0	88	[NT]
Naphthalene	µg/L	1	Org-023	<1	5	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	5	106	103	3	104	[NT]
Surrogate Toluene-d8	%		Org-023	98	5	98	99	1	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	5	95	98	3	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			30/04/2025	[NT]	[NT]	[NT]	[NT]	30/04/2025	[NT]
Date analysed	-			30/04/2025	[NT]	[NT]	[NT]	[NT]	30/04/2025	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	104	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date prepared	-			01/05/2025	5	01/05/2025	01/05/2025		01/05/2025	[NT]
Date analysed	-			01/05/2025	5	01/05/2025	01/05/2025		01/05/2025	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	5	220	220	0	82	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	5	10	9	11	89	[NT]
Boron-Dissolved	µg/L	20	Metals-022	<20	5	90	80	12	90	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	5	<0.1	<0.1	0	89	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	5	28	27	4	90	[NT]
Cobalt-Dissolved	µg/L	1	Metals-022	<1	5	1	1	0	91	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	5	8	8	0	90	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	84	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	5	2	2	0	90	[NT]
Selenium-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	89	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	5	1	1	0	91	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	379078-2
Date prepared	-			30/04/2025	1	30/04/2025	30/04/2025		30/04/2025	30/04/2025
Date analysed	-			30/04/2025	1	30/04/2025	30/04/2025		30/04/2025	30/04/2025
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	1	0.3	0.3	0	101	94

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	379078-6
Date prepared	-			29/04/2025	4	29/04/2025	29/04/2025		29/04/2025	29/04/2025
Date analysed	-			29/04/2025	4	29/04/2025	29/04/2025		29/04/2025	29/04/2025
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	4	0.86	0.85	1	107	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.10	0.10	0	98	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.18	0.19	5	97	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.3	0.3	0	97	[NT]
TKN in water	mg/L	0.1	Inorg-062	<0.1	4	5.6	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	4	5.9	[NT]		110	114
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	<0.005	7	0.02	[NT]		103	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	7	29/04/2025	29/04/2025		[NT]	[NT]
Date analysed	-			[NT]	7	29/04/2025	29/04/2025		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	7	0.019	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	7	0.29	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	7	0.53	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	7	0.82	[NT]		[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	7	0.8	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	[NT]	7	1.6	1.6	0	[NT]	[NT]
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	[NT]	11	0.03	0.03	0	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	29/04/2025	29/04/2025		[NT]	[NT]
Date analysed	-			[NT]	11	29/04/2025	29/04/2025		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	11	0.18	0.18	0	[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	11	1.0	1.0	0	[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	11	2.1	2.0	5	[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	11	3.1	3.0	3	[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	11	2.9	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	[NT]	11	6.0	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			28/04/2025	1	28/04/2025	28/04/2025		28/04/2025	[NT]
Date analysed	-			28/04/2025	1	28/04/2025	28/04/2025		28/04/2025	[NT]
Total Suspended Solids	mg/L	5	Ext-073_J	<5	5	50	[NT]		89	[NT]
pH	pH Units		Ext-073_F	[NT]	1	7.6	7.6	0	99	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	<1	1	750	750	0	94	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	5	28/04/2025	28/04/2025		[NT]	[NT]
Date analysed	-			[NT]	5	28/04/2025	28/04/2025		[NT]	[NT]
pH	pH Units		Ext-073_F	[NT]	5	10.3	10.3	0	[NT]	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	[NT]	5	500	500	0	[NT]	[NT]
Total Suspended Solids	mg/L	5	Ext-073_J	[NT]	11	46	46	0	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	28/04/2025	28/04/2025		[NT]	[NT]
Date analysed	-			[NT]	11	28/04/2025	28/04/2025		[NT]	[NT]
pH	pH Units		Ext-073_F	[NT]	11	10.3	[NT]		[NT]	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	[NT]	11	490	[NT]		[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP

Envirolab Services
~~12 Ashley St~~
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 379078
~~Date Received:~~ 29/04/25
Time Received: 10:50
Received By: DW
Temp: Cool/Ambient
Cooling: Ice/Icepack 12°C
Security: Intact/Broken/None

Company:	RCA Australia	RCA Reference Number (i.e. report title)	13589a
Contact person:	Fiona Brooker	PO No. (if applicable):	Not applicable
Project Mgr:	Fiona Brooker	Envirolab Quote No. :	BM8
Sampler:	Anh Hoang	Date results required:	
Address:	92 Hill St Carrington, NSW 2294		
Phone:	02 4902 9200 Mob: 0410 230 644		
Email results to:	administrator@rca.com.au + enviro@rca.com.au	Lab comments:	
Email invoice to:			

ENVIROLAB GROUP
Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200 sydney@envirolab.com.au

Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	# Containers	E01580 - Total Suspended Solids (TSS)	E00705-NH3, E00815-NO2, E00790-NO3, E00850-NOx, E01090-Total P)	E010300 - Nutrient Suite (NH3, NO2, NO3, NOx, TKN (calc), Total N, Total P)	E07290 and E07220 TRH C6-C40	E03010_D - Dissolved (Aluminium, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Zinc)	E05360 - Hexavalent Chromium	E01140 - pH	E01150 - Electrical Conductivity		Sediment within container to be included in analysis if X	Comments
		Sample Information			Tests Required										Comments
379078-1	GW1	28/04/2025	Water	4		x					x	x		x	
" -2	GW3	28/04/2025	Water	4		x					x	x		x	
" -3	LP	28/04/2025	Water	4	x		x				x	x		x	
" -4	WL	28/04/2025	Water	4	x		x				x	x		x	
" -5	Sed-2	28/04/2025	Water	9	x		x	x	x	x	x	x		x	
" -6	SW2	28/04/2025	Water	9	x		x	x	x	x	x	x		x	
" -7	Sed-1	28/04/2025	Water	9	x		x	x	x	x	x	x		x	
" -8	SW1	28/04/2025	Water	9	x		x	x	x	x	x	x		x	
" -9	QA~~04-25~~	28/04/2025	Water	9	x		x	x	x	x	x	x		x	
" -10	Dis-Sed 1	28/4/25	W	9	x		x	x	x	x	x	x		x	
" -11	Dis-Sed 2	28/4/25	W	9	x		x	x	x	x	x	x		x	
			Total	99	9	2	9	7	7	7	11	11		11	

Relinquished by (company):	RCA Australia	Received by (company):	Envirolab	Lab use only:	
Print Name:	Anh Hoang	Print Name:	Santosh Singh	Job Number	[redacted] Cooling: Ice / Ice Pack / None
Date & Time:	28-4-25 - 13:45	Date & Time:	28/4/25 13:50	Temperature	13°C Security Seal: Intact / Broken / Not Used
Signature:		Signature:		TAT Req:	SAME DAY / 1 / 2 / 3 / 4 / STD

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	RCA Australia
Attention	RCA Administrator

Sample Login Details

Your reference	13589a
Envirolab Reference	379078
Date Sample Received	28/04/2025
Date Instructions Received	29/04/2025
Date Results Expected to be Reported	06/05/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	11 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	13
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved	Metals in Waters -Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Total Nitrogen in water	Hexavalent Chromium, Cr6+ (dissolved)	Miscellaneous Inorganics
GW1				✓	✓	✓	✓	✓				✓
GW3				✓	✓	✓	✓	✓				✓
LP				✓	✓	✓	✓	✓	✓	✓		✓
WL				✓	✓	✓	✓	✓	✓	✓		✓
Sed-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sed-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QA0425	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dis-Sed1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dis-Sed2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 381105

Client Details

Client	RCA Australia
Attention	RCA Administrator
Address	PO Box 175, Carrington, NSW, 2294

Sample Details

Your Reference	**13589a**
Number of Samples	4 Water
Date samples received	20/05/2025
Date completed instructions received	20/05/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	28/05/2025
Date of Issue	27/05/2025

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Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Laura Schofield, Lab Manager
Liam Timmins, Organics Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water					
Our Reference	UNITS	381105-1	381105-2	381105-3	381105-4
Your Reference		DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date extracted	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Date analysed	-	23/05/2025	23/05/2025	23/05/2025	23/05/2025
TRH C_6 - C_9	µg/L	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	96	96	96	96
Surrogate Toluene-d8	%	98	99	98	99
Surrogate 4-Bromofluorobenzene	%	99	98	98	101

svTRH (C10-C40) in Water					
Our Reference		381105-1	381105-2	381105-3	381105-4
Your Reference	UNITS	DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date extracted	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Date analysed	-	23/05/2025	23/05/2025	23/05/2025	23/05/2025
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50
Surrogate o-Terphenyl	%	119	102	109	132

HM in water - dissolved					
Our Reference	UNITS	381105-1	381105-2	381105-3	381105-4
Your Reference		DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Date analysed	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Aluminium-Dissolved	µg/L	150	150	170	140
Arsenic-Dissolved	µg/L	8	3	3	4
Boron-Dissolved	µg/L	80	210	230	230
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	23	2	3	4
Cobalt-Dissolved	µg/L	<1	<1	<1	<1
Copper-Dissolved	µg/L	25	14	6	13
Lead-Dissolved	µg/L	1	<1	<1	5
Nickel-Dissolved	µg/L	3	2	1	1
Selenium-Dissolved	µg/L	<1	2	2	2
Zinc-Dissolved	µg/L	4	36	14	23

Metals in Waters - Acid extractable					
Our Reference		381105-1	381105-2	381105-3	381105-4
Your Reference	UNITS	DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Date analysed	-	22/05/2025	22/05/2025	22/05/2025	22/05/2025
Phosphorus - Total	mg/L	0.4	0.2	0.2	0.2

Miscellaneous Inorganics					
Our Reference	UNITS	381105-1	381105-2	381105-3	381105-4
Your Reference		DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	21/05/2025	21/05/2025	21/05/2025	21/05/2025
Date analysed	-	21/05/2025	21/05/2025	21/05/2025	21/05/2025
Ammonia as N in water	mg/L	<0.005	0.01	0.008	0.006
Nitrite as N in water	mg/L	0.80	0.01	0.01	0.04
Nitrate as N in water	mg/L	1.7	0.096	0.17	0.13
NOx as N in water	mg/L	2.5	0.11	0.18	0.17
TKN in water	mg/L	0.5	0.9	1.3	0.9
Total Nitrogen in water	mg/L	3.0	1.0	1.1	1.1
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.03	<0.005	<0.005	<0.005

Miscellaneous Inorganics					
Our Reference	UNITS	381105-1	381105-2	381105-3	381105-4
Your Reference		DIS-Sed2	SW2	DIS-Sed1	SW1
Date Sampled		20/05/2025	20/05/2025	20/05/2025	20/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	20/05/2025	20/05/2025	20/05/2025	20/05/2025
Date analysed	-	20/05/2025	20/05/2025	20/05/2025	20/05/2025
Total Suspended Solids	mg/L	180	100	84	85
pH	pH Units	10.0	7.6	7.8	7.9
Electrical Conductivity	µS/cm	520	520	500	480

Method ID	Methodology Summary
Ext-073_F	Analysis of pH in Water by AS 4500 H+ B and in-house method ENV-LAB006, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_G	Analysis of Conductivity in Water by AS 2510 B and in-house method ENV-LAB010, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_J	Analysis of Total Suspended Solids in Water by AS 2540 D and in-house method ENV-LAB009, Analysed by Envirolab Newcastle - NATA Site No. 18077
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-118	Hexavalent Chromium (Cr6+) - determined firstly by separation using ion chromatography followed by the colourimetric analytical finish. Water samples are ideally field filtered into alkali preserved containers prior to receipt for dissolved Cr6+ analysis. Unfiltered water samples into alkali preserved containers (or pH adjusted to pH 8-9 on receipt) can be classified as Total (unfiltered) Cr6+. Please note, for 'Total/Unfiltered' Trivalent Chromium in waters [calculated], these results may be exaggerated due to the digestive limitation of 'Total/Unfiltered' Hexavalent Chromium in NaOH at pH 8-9 compared to more comprehensive digestion for Total Chromium using the mineral acids HNO3 and HCl. Solid (includes soils, filters, paints, swabs for example) samples are extracted in a buffered catalysed solution prior to the analytical finish above. Water extractable options are available (e.g. as an option for filters) on request. Impingers may need pH adjusting to pH 8-9 prior to IC-colourimetric analytical finish.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stochiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/05/2025	[NT]	[NT]	[NT]	[NT]	22/05/2025	[NT]
Date analysed	-			23/05/2025	[NT]	[NT]	[NT]	[NT]	23/05/2025	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	113	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	112	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate Toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			22/05/2025	[NT]	[NT]	[NT]	[NT]	22/05/2025	[NT]
Date analysed	-			22/05/2025	[NT]	[NT]	[NT]	[NT]	23/05/2025	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	117	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			22/05/2025	[NT]	[NT]	[NT]	[NT]	22/05/2025	[NT]
Date analysed	-			22/05/2025	[NT]	[NT]	[NT]	[NT]	22/05/2025	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	[NT]	[NT]	[NT]	[NT]	90	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Boron-Dissolved	µg/L	20	Metals-022	<20	[NT]	[NT]	[NT]	[NT]	92	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Cobalt-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Selenium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/05/2025	1	22/05/2025	22/05/2025		22/05/2025	[NT]
Date analysed	-			22/05/2025	1	22/05/2025	22/05/2025		22/05/2025	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	1	0.4	0.4	0	103	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	381105-1
Date prepared	-			21/05/2025	4	21/05/2025	21/05/2025		21/05/2025	21/05/2025
Date analysed	-			21/05/2025	4	21/05/2025	21/05/2025		21/05/2025	21/05/2025
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	4	0.006	[NT]		99	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.04	[NT]		100	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.13	[NT]		95	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	4	0.17	[NT]		96	[NT]
TKN in water	mg/L	0.1	Inorg-062	<0.1	4	0.9	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	4	1.1	[NT]		86	[NT]
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	<0.005	4	<0.005	<0.005	0	108	119

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/05/2025	[NT]	[NT]	[NT]	[NT]	20/05/2025	[NT]
Date analysed	-			20/05/2025	[NT]	[NT]	[NT]	[NT]	20/05/2025	[NT]
Total Suspended Solids	mg/L	5	Ext-073_J	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]
pH	pH Units		Ext-073_F	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	[NT]	[NT]	[NT]	[NT]	[NT]	105	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP

ENVIROLAB ENVIROLAB SERVICES mpl

Company:	RCA Australia
Contact person:	Fiona Brooker
Project Mgr:	Fiona Brooker
Sampler:	Anh Hoang / DB
Address:	92 Hill St Carrington, NSW 2294
Phone:	02 4902 9200 Mob: 0410 230 644
Email results to:	administrator@rca.com.au + enviro@rca.com.au
Email invoice to:	

RCA Reference Number (i.e. report title)	13589a
PO No. (if applicable):	Not applicable
Envirolab Quote No. :	BM8
Date results required:	STD
Or choose:	Same Day 1 day 2 day 3 day

Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Lab comments:

ENVIROLAB GROUP

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200
sydney@envirolab.com.au

Sample information / Tests Required / Comments

Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	# Containers	E01580 - [redacted] EN	E010300 - Nutrient Suite (NH3, NO2, NO3, NOx, TKN (calc), Total N, Total P)	E07290 and E07220 TRH C6-C40 and BTEXN	E05360 - Hexavalent Chromium	E03010_D - Dissolved (Aluminium, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Zinc)	[redacted] EN	E01150 - [redacted] EN					Sediment within container to be included in analysis if X	Provide as much information about the sample as you can
381105-1	DIS-Sed2	20.5.25 - 12:10	Water	9	x	x	x	x	x	x	x					x	
-2	SW2	20.5.25 - 12:30	Water	9	x	x	x	x	x	x	x					x	
-3	DIS-Sed1	20.5.25 - 11:20	Water	9	x	x	x	x	x	x	x					x	
-4	SW1	20.5.25 - 13:00	Water	9	x	x	x	x	x	x	x					x	
			Total	36	4	4	4	4	4	4	4	0	0	0	0		

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 381105
Date Received: 21/05/25
Time Received: 1040
Received By: DC
Temp: Cool/Ambient 12°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company):	RCA Australia	Received by (company):	Envirolab
Print Name:	Anh Hoang	Print Name:	Sanlbah Tongh
Date & Time:	20.5.25 - 13:40	Date & Time:	20/5/25 13:40
Signature:	(signed)	Signature:	(signed)

Lab use only:

Job Number	[redacted]	Cooling:	Ice / Ice Pack / None
Temperature	3°C	Security Seal:	Intact / Broken / Not Used
TAT Req:	SAME DAY / 1 / 2 / 3 / 4 / STD		

Page No:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	RCA Australia
Attention	RCA Administrator

Sample Login Details

Your reference	13589a
Envirolab Reference	381105
Date Sample Received	20/05/2025
Date Instructions Received	20/05/2025
Date Results Expected to be Reported	28/05/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	4 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved	Metals in Waters -Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Total Nitrogen in water	Hexavalent Chromium, Cr6+ (dissolved)	Miscellaneous Inorganics
DIS-Sed2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DIS-Sed1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 382113

Client Details

Client	RCA Australia
Attention	Enviro RCA
Address	PO Box 175, Carrington, NSW, 2294

Sample Details

Your Reference	**13589a**
Number of Samples	9 Water
Date samples received	30/06/2025
Date completed instructions received	03/06/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	06/06/2025
Date of Issue	06/06/2025

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Results Approved By
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Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		382113-1	382113-2	382113-5	382113-6	382113-7
Your Reference	UNITS	GW1	GW3	Sed-2	SW2	Sed-1
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	03/06/2025	03/06/2025	03/06/2025	03/06/2025	03/06/2025
Date analysed	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025	04/06/2025
TRH C_6 - C_9	µg/L	<10	12	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	16	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	1	<1	<1	<1
Toluene	µg/L	<1	2	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	3	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	109	109	109	111	101
Surrogate Toluene-d8	%	99	100	100	100	98
Surrogate 4-Bromofluorobenzene	%	99	98	98	97	98

vTRH(C6-C10)/BTEXN in Water		
Our Reference		382113-8
Your Reference	UNITS	SW1
Date Sampled		30/05/2025
Type of sample		Water
Date extracted	-	03/06/2025
Date analysed	-	04/06/2025
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	109
Surrogate Toluene-d8	%	100
Surrogate 4-Bromofluorobenzene	%	96

svTRH (C10-C40) in Water						
Our Reference		382113-1	382113-2	382113-5	382113-6	382113-7
Your Reference	UNITS	GW1	GW3	Sed-2	SW2	Sed-1
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Date analysed	-	05/06/2025	05/06/2025	05/06/2025	05/06/2025	05/06/2025
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	107	110	102	105	107

svTRH (C10-C40) in Water		
Our Reference		382113-8
Your Reference	UNITS	SW1
Date Sampled		30/05/2025
Type of sample		Water
Date extracted	-	04/06/2025
Date analysed	-	05/06/2025
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	102

PAHs in Water			
Our Reference	UNITS	382113-1	382113-2
Your Reference		GW1	GW3
Date Sampled		30/05/2025	30/05/2025
Type of sample		Water	Water
Date extracted	-	04/06/2025	04/06/2025
Date analysed	-	05/06/2025	05/06/2025
Naphthalene	µg/L	0.2	0.3
Acenaphthylene	µg/L	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5
Total +ve PAH's	µg/L	0.19	0.33
Surrogate p-Terphenyl-d14	%	103	106

HM in water - dissolved					
Our Reference		382113-5	382113-6	382113-7	382113-8
Your Reference	UNITS	Sed-2	SW2	Sed-1	SW1
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Date analysed	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Aluminium-Dissolved	µg/L	130	10	390	<10
Arsenic-Dissolved	µg/L	8	3	3	2
Boron-Dissolved	µg/L	60	100	40	100
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	32	<1	19	<1
Cobalt-Dissolved	µg/L	2	1	<1	<1
Copper-Dissolved	µg/L	11	2	5	3
Lead-Dissolved	µg/L	<1	<1	<1	<1
Nickel-Dissolved	µg/L	3	2	<1	2
Selenium-Dissolved	µg/L	<1	<1	<1	<1
Zinc-Dissolved	µg/L	3	29	3	10

Metals in Waters - Acid extractable						
Our Reference		382113-1	382113-2	382113-3	382113-4	382113-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	05/06/2025	05/06/2025	05/06/2025	05/06/2025	05/06/2025
Date analysed	-	05/06/2025	05/06/2025	05/06/2025	05/06/2025	05/06/2025
Phosphorus - Total	mg/L	0.4	0.2	5.0	5.1	0.4

Metals in Waters - Acid extractable					
Our Reference		382113-6	382113-7	382113-8	382113-9
Your Reference	UNITS	SW2	Sed-1	SW1	QAMay
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	05/06/2025	05/06/2025	05/06/2025	05/06/2025
Date analysed	-	05/06/2025	05/06/2025	05/06/2025	05/06/2025
Phosphorus - Total	mg/L	0.06	<0.05	<0.05	5.1

Miscellaneous Inorganics						
Our Reference		382113-1	382113-2	382113-3	382113-4	382113-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Date analysed	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Ammonia as N in water	mg/L	1.1	1.0	0.96	0.67	0.15
Nitrite as N in water	mg/L	<0.005	0.006	<0.01	<0.005	0.008
Nitrate as N in water	mg/L	<0.005	<0.005	<0.01	<0.02	3.3
NOx as N in water	mg/L	<0.005	0.009	<0.01	<0.02	3.3
TKN in water	mg/L	[NA]	[NA]	8.9	9.8	0.5
Total Nitrogen in water	mg/L	[NA]	[NA]	8.9	9.8	3.8
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	[NA]	[NA]	[NA]	[NA]	0.03

Miscellaneous Inorganics					
Our Reference		382113-6	382113-7	382113-8	382113-9
Your Reference	UNITS	SW2	Sed-1	SW1	QAMay
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water
Date prepared	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Date analysed	-	04/06/2025	04/06/2025	04/06/2025	04/06/2025
Ammonia as N in water	mg/L	0.60	0.13	1.2	1.1
Nitrite as N in water	mg/L	<0.005	0.32	0.04	<0.01
Nitrate as N in water	mg/L	<0.005	0.69	0.50	<0.01
NOx as N in water	mg/L	0.008	1.0	0.54	<0.01
TKN in water	mg/L	1.3	0.3	0.4	1.8
Total Nitrogen in water	mg/L	1.3	1.3	0.9	1.8
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	<0.005	0.02	<0.005	[NA]

Miscellaneous Inorganics						
Our Reference		382113-3	382113-4	382113-5	382113-6	382113-7
Your Reference	UNITS	LP	WL	Sed-2	SW2	Sed-1
Date Sampled		30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Date analysed	-	30/05/2025	30/05/2025	30/05/2025	30/05/2025	30/05/2025
Total Suspended Solids	mg/L	25	19	42	5	53
pH	pH Units	7.2	6.9	7.4	7.2	9.8
Electrical Conductivity	µS/cm	1,700	1,900	550	890	280

Miscellaneous Inorganics			
Our Reference		382113-8	382113-9
Your Reference	UNITS	SW1	QAMay
Date Sampled		30/05/2025	30/05/2025
Type of sample		Water	Water
Date prepared	-	30/05/2025	30/05/2025
Date analysed	-	30/05/2025	30/05/2025
Total Suspended Solids	mg/L	<5	25
pH	pH Units	7.4	7.3
Electrical Conductivity	µS/cm	950	1,700

Method ID	Methodology Summary
Ext-073_F	Analysis of pH in Water by AS 4500 H+ B and in-house method ENV-LAB006, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_G	Analysis of Conductivity in Water by AS 2510 B and in-house method ENV-LAB010, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_J	Analysis of Total Suspended Solids in Water by AS 2540 D and in-house method ENV-LAB009, Analysed by Envirolab Newcastle - NATA Site No. 18077
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-118	Hexavalent Chromium (Cr6+) - determined firstly by separation using ion chromatography followed by the colourimetric analytical finish. Water samples are ideally field filtered into alkali preserved containers prior to receipt for dissolved Cr6+ analysis. Unfiltered water samples into alkali preserved containers (or pH adjusted to pH 8-9 on receipt) can be classified as Total (unfiltered) Cr6+. Please note, for 'Total/Unfiltered' Trivalent Chromium in waters [calculated], these results may be exaggerated due to the digestive limitation of 'Total/Unfiltered' Hexavalent Chromium in NaOH at pH 8-9 compared to more comprehensive digestion for Total Chromium using the mineral acids HNO3 and HCl. Solid (includes soils, filters, paints, swabs for example) samples are extracted in a buffered catalysed solution prior to the analytical finish above. Water extractable options are available (e.g. as an option for filters) on request. Impingers may need pH adjusting to pH 8-9 prior to IC-colourimetric analytical finish.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stochiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			03/06/2025	2	03/06/2025	04/06/2025		03/06/2025	[NT]
Date analysed	-			04/06/2025	2	04/06/2025	05/06/2025		04/06/2025	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	2	12	14	15	87	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	2	16	18	12	87	[NT]
Benzene	µg/L	1	Org-023	<1	2	1	1	0	88	[NT]
Toluene	µg/L	1	Org-023	<1	2	2	2	0	88	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	2	<1	<1	0	88	[NT]
m+p-xylene	µg/L	2	Org-023	<2	2	3	3	0	86	[NT]
o-xylene	µg/L	1	Org-023	<1	2	<1	<1	0	85	[NT]
Naphthalene	µg/L	1	Org-023	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	106	2	109	100	9	102	[NT]
Surrogate Toluene-d8	%		Org-023	99	2	100	97	3	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	97	2	98	96	2	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			04/06/2025	[NT]	[NT]	[NT]	[NT]	04/06/2025	[NT]
Date analysed	-			04/06/2025	[NT]	[NT]	[NT]	[NT]	04/06/2025	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	110	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	110	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	87	[NT]	[NT]	[NT]	[NT]	126	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			04/06/2025	[NT]	[NT]	[NT]	[NT]	04/06/2025	[NT]
Date analysed	-			05/06/2025	[NT]	[NT]	[NT]	[NT]	05/06/2025	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	103	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			04/06/2025	5	04/06/2025	04/06/2025		04/06/2025	[NT]
Date analysed	-			04/06/2025	5	04/06/2025	04/06/2025		04/06/2025	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	5	130	140	7	99	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	5	8	9	12	99	[NT]
Boron-Dissolved	µg/L	20	Metals-022	<20	5	60	60	0	87	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	5	<0.1	<0.1	0	101	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	5	32	34	6	113	[NT]
Cobalt-Dissolved	µg/L	1	Metals-022	<1	5	2	2	0	110	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	5	11	11	0	108	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	99	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	5	3	3	0	110	[NT]
Selenium-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	101	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	5	3	3	0	112	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	382113-2
Date prepared	-			05/06/2025	1	05/06/2025	05/06/2025		05/06/2025	05/06/2025
Date analysed	-			05/06/2025	1	05/06/2025	05/06/2025		05/06/2025	05/06/2025
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	1	0.4	0.4	0	86	98

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	382113-4
Date prepared	-			04/06/2025	3	04/06/2025	04/06/2025		04/06/2025	04/06/2025
Date analysed	-			04/06/2025	3	04/06/2025	04/06/2025		04/06/2025	04/06/2025
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	3	0.96	0.95	1	90	85
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	3	<0.01	<0.01	0	103	109
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	3	<0.01	<0.01	0	95	78
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	3	<0.01	<0.01	0	96	78
TKN in water	mg/L	0.1	Inorg-062	<0.1	3	8.9	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	3	8.9	[NT]		91	[NT]
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	<0.005	5	0.03	[NT]		107	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	382113-7
Date prepared	-			[NT]	5	04/06/2025	04/06/2025		[NT]	04/06/2025
Date analysed	-			[NT]	5	04/06/2025	04/06/2025		[NT]	04/06/2025
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	5	0.15	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	5	0.008	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	5	3.3	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	5	3.3	[NT]		[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	5	0.5	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	[NT]	5	3.8	3.4	11	[NT]	85
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	[NT]	6	<0.005	<0.005	0	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	6	04/06/2025	04/06/2025		[NT]	[NT]
Date analysed	-			[NT]	6	04/06/2025	04/06/2025		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	6	0.60	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	6	<0.005	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	6	<0.005	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	6	0.008	[NT]		[NT]	[NT]
TKN in water	mg/L	0.1	Inorg-062	[NT]	6	1.3	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	[NT]	6	1.3	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/05/2025	[NT]	[NT]	[NT]	[NT]	30/05/2025	[NT]
Date analysed	-			30/05/2025	[NT]	[NT]	[NT]	[NT]	30/05/2025	[NT]
Total Suspended Solids	mg/L	5	Ext-073_J	<5	[NT]	[NT]	[NT]	[NT]	110	[NT]
pH	pH Units		Ext-073_F	[NT]	[NT]	[NT]	[NT]	[NT]	98	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	[NT]	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

MISC_INORG: Nitrate as N in water, NOx as N in water, Nitrite as N in water PQL has been raised due to matrix interferences from analytes (other than those being tested) in the sample/s. Samples were diluted and reanalysed however same results were achieved.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 382113

Company:	RCA Australia		RCA Reference Number (i.e. report title)	13589a	Date Received: 3/6/25
Contact person:	Fiona Brooker				Time Received: 1040
Project Mgr:	Fiona Brooker		PO No. (if applicable):	Not applicable	Received By: KC
Sampler:	MH		Envirolab Quote No. :	BM8	Temp: Cool/Ambient
Address:	92 Hill St Carrington, NSW 2294		Date results required:	~~9/06/2025~~ 6-6-25	Cooling: Ice/Icepack
					Security: Intact/Broken/None
Phone:	02 4902 9200	Mob: 0410 230 644	0401905593		
Email results to:	administrator@rca.com.au + enviro@rca.com.au		Lab comments:		
Email invoice to:					

ENVIROLAB GROUP
Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200 sydney@envirolab.com.au

	Sample Information				Tests Required											Comments
	Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	# Containers	E01580 - Total Suspended Solids (TSS)	E00705-NH3, E00815-NO2, E00790-NO3, E00850-NOx, E01090-Total P)	E010300 - Nutrient Suite (NH3, NO2, NO3, NOx, TKN (calc), Total N, Total P)	E07290 and E07220 TRH C6-C40 and BTEXN	E03010_D - Dissolved (Aluminium, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Zinc)	E05360 - Hexavalent Chromium	E08310 - PAH low level	E01140 - pH	E01150 - Electrical Conductivity	Sediment within container to be included in analysis if X	Provide as much information about the sample as you can
1	382113-1	GW1	30/05/2025	Water	8		x		x			x			x	
2	382113-2	GW3	30/05/2025	Water	8		x		x			x			x	
3	382113-3	LP	30/05/2025	Water	4	x		x					x	x	x	
4	382113-4	WL	30/05/2025	Water	4	x		x					x	x	x	
5	382113-5	Sed-2	30/05/2025	Water	9	x		x	x	x	x		x	x	x	
6	382113-6	SW2	30/05/2025	Water	9	x		x	x	x	x		x	x	x	
7	382113-7	Sed-1	30/05/2025	Water	9	x		x	x	x	x		x	x	x	
8	382113-8	SW1	30/05/2025	Water	9	x		x	x	x	x		x	x	x	
9	382113-9	QA/~~MH~~	30/05/2025	Water	~~4~~ 4	x		x	~~x~~	~~x~~	~~x~~		x	x	x	
			Total		~~66~~	7	2	7	~~76~~	~~54~~	~~52~~	2	7	7	9	

Relinquished by (company):	RCA Australia	Received by (company):	ELS SYD	Lab use only:	
Print Name:	Muhammad	Print Name:	K. Chavez	Job Number	382113
Date & Time:	30.5.25 3.17pm	Date & Time:	3/6/25 1040	Cooling:	Ice / Ice Pack / None
Signature:		Signature:	K.C	Temperature	3.7
				Security Seal:	Intact / Broken / Not Used
				TAT Req:	SAME DAY / 1 / 2 / 3 / 4 / STD

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	RCA Australia
Attention	Enviro RCA

Sample Login Details

Your reference	13589a
Envirolab Reference	382113
Date Sample Received	30/06/2025
Date Instructions Received	03/06/2025
Date Results Expected to be Reported	06/06/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	9 Water
Turnaround Time Requested	3 days
Temperature on Receipt (°C)	3.7
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	HM in water - dissolved	Metals in Waters -Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Total Nitrogen in water	Hexavalent Chromium, Cr6+ (dissolved)	Miscellaneous Inorganics
GW1	✓	✓	✓		✓	✓	✓	✓	✓				
GW3	✓	✓	✓		✓	✓	✓	✓	✓				
LP					✓	✓	✓	✓	✓	✓	✓		✓
WL					✓	✓	✓	✓	✓	✓	✓		✓
Sed-2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sed-1	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW1	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QAMay					✓	✓	✓	✓	✓	✓	✓		✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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www.envirolab.com.au

CERTIFICATE OF ANALYSIS 384638

Client Details

Client	RCA Australia
Attention	RCA Administrator
Address	PO Box 175, Carrington, NSW, 2294

Sample Details

Your Reference	**13589a**
Number of Samples	8 Water
Date samples received	01/07/2025
Date completed instructions received	01/07/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	08/07/2025
Date of Issue	08/07/2025

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Jack Wallis, Senior Chemist
Jenny He, Inorganic Team Leader
Laura Schofield, Lab Manager
Loren Bardwell, Development Chemist
Tabitha Roberts, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water				
Our Reference	UNITS	384638-5	384638-6	384638-7
Your Reference		Sed-2	SW2	Sed-1
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date extracted	-	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	03/07/2025	03/07/2025	03/07/2025
TRH C_6 - C_9	µg/L	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10
Benzene	µg/L	<1	<1	<1
Toluene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
o-xylene	µg/L	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	106	105	105
Surrogate Toluene-d8	%	100	100	100
Surrogate 4-Bromofluorobenzene	%	97	88	85

svTRH (C10-C40) in Water				
Our Reference		384638-5	384638-6	384638-7
Your Reference	UNITS	Sed-2	SW2	Sed-1
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date extracted	-	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	03/07/2025	02/07/2025	02/07/2025
TRH C_{10} - C_{14}	µg/L	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	210	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	210	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	250	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	250	<50	<50
Surrogate o-Terphenyl	%	94	88	83

HM in water - dissolved				
Our Reference	UNITS	384638-5	384638-6	384638-7
Your Reference		Sed-2	SW2	Sed-1
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date prepared	-	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	02/07/2025	02/07/2025	02/07/2025
Aluminium-Dissolved	µg/L	50	<10	50
Arsenic-Dissolved	µg/L	9	2	4
Boron-Dissolved	µg/L	60	100	60
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	19	<1	12
Cobalt-Dissolved	µg/L	1	<1	<1
Copper-Dissolved	µg/L	9	2	5
Lead-Dissolved	µg/L	<1	<1	<1
Nickel-Dissolved	µg/L	2	1	<1
Selenium-Dissolved	µg/L	<1	<1	<1
Zinc-Dissolved	µg/L	3	10	3

Metals in Waters - Acid extractable						
Our Reference		384638-1	384638-2	384638-3	384638-4	384638-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	02/07/2025	02/07/2025	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	02/07/2025	02/07/2025	02/07/2025	02/07/2025	02/07/2025
Phosphorus - Total	mg/L	0.60	0.1	5.5	6.4	0.4

Metals in Waters - Acid extractable				
Our Reference		384638-6	384638-7	384638-8
Your Reference	UNITS	SW2	Sed-1	QA062025
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date prepared	-	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	02/07/2025	02/07/2025	02/07/2025
Phosphorus - Total	mg/L	0.05	<0.05	<0.05

Miscellaneous Inorganics						
Our Reference		384638-1	384638-2	384638-3	384638-4	384638-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	01/07/2025	01/07/2025	01/07/2025	01/07/2025	01/07/2025
Date analysed	-	01/07/2025	01/07/2025	01/07/2025	01/07/2025	01/07/2025
Ammonia as N in water	mg/L	2.4	2.9	0.04	0.008	0.007
Nitrite as N in water	mg/L	<0.005	<0.01	<0.01	<0.01	<0.01
Nitrate as N in water	mg/L	0.006	<0.01	<0.02	<0.01	<0.02
NOx as N in water	mg/L	0.008	<0.01	<0.02	<0.01	<0.02
TKN in water	mg/L	[NA]	[NA]	12	10	3.8
Total Nitrogen in water	mg/L	[NA]	[NA]	12	10	3.8
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	[NA]	[NA]	[NA]	[NA]	0.02

Miscellaneous Inorganics				
Our Reference		384638-6	384638-7	384638-8
Your Reference	UNITS	SW2	Sed-1	QA062025
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date prepared	-	01/07/2025	01/07/2025	01/07/2025
Date analysed	-	01/07/2025	01/07/2025	01/07/2025
Ammonia as N in water	mg/L	<0.005	<0.005	<0.005
Nitrite as N in water	mg/L	<0.005	0.03	<0.005
Nitrate as N in water	mg/L	<0.005	1.0	2.0
NOx as N in water	mg/L	<0.005	1.0	2.0
TKN in water	mg/L	0.9	0.3	2.8
Total Nitrogen in water	mg/L	0.9	1.3	4.8
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	<0.005	0.01	[NA]

Miscellaneous Inorganics						
Our Reference		384638-1	384638-2	384638-3	384638-4	384638-5
Your Reference	UNITS	GW1	GW3	LP	WL	Sed-2
Date Sampled		30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Date analysed	-	30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Total Suspended Solids	mg/L	[NA]	[NA]	58	18	40
pH	pH Units	7.1	6.3	8.1	7.2	9.3
Electrical Conductivity	µS/cm	1,100	1,300	2,300	2,800	560

Miscellaneous Inorganics				
Our Reference		384638-6	384638-7	384638-8
Your Reference	UNITS	SW2	Sed-1	QA062025
Date Sampled		30/06/2025	30/06/2025	30/06/2025
Type of sample		Water	Water	Water
Date prepared	-	30/06/2025	30/06/2025	30/06/2025
Date analysed	-	30/06/2025	30/06/2025	30/06/2025
Total Suspended Solids	mg/L	10	29	15
pH	pH Units	7.7	9.2	7.6
Electrical Conductivity	µS/cm	1,100	350	1,100

Method ID	Methodology Summary
Ext-073_F	Analysis of pH in Water by AS 4500 H+ B and in-house method ENV-LAB006, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_G	Analysis of Conductivity in Water by AS 2510 B and in-house method ENV-LAB010, Analysed by Envirolab Newcastle - NATA Site No. 18077
Ext-073_J	Analysis of Total Suspended Solids in Water by AS 2540 D and in-house method ENV-LAB009, Analysed by Envirolab Newcastle - NATA Site No. 18077
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-118	Hexavalent Chromium (Cr6+) - determined firstly by separation using ion chromatography followed by the colourimetric analytical finish. Water samples are ideally field filtered into alkali preserved containers prior to receipt for dissolved Cr6+ analysis. Unfiltered water samples into alkali preserved containers (or pH adjusted to pH 8-9 on receipt) can be classified as Total (unfiltered) Cr6+. Please note, for 'Total/Unfiltered' Trivalent Chromium in waters [calculated], these results may be exaggerated due to the digestive limitation of 'Total/Unfiltered' Hexavalent Chromium in NaOH at pH 8-9 compared to more comprehensive digestion for Total Chromium using the mineral acids HNO3 and HCl. Solid (includes soils, filters, paints, swabs for example) samples are extracted in a buffered catalysed solution prior to the analytical finish above. Water extractable options are available (e.g. as an option for filters) on request. Impingers may need pH adjusting to pH 8-9 prior to IC-colourimetric analytical finish.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stochiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			02/07/2025	6	02/07/2025	03/07/2025		02/07/2025	[NT]
Date analysed	-			03/07/2025	6	03/07/2025	04/07/2025		03/07/2025	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	6	<10	<10	0	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	6	<10	<10	0	98	[NT]
Benzene	µg/L	1	Org-023	<1	6	<1	<1	0	97	[NT]
Toluene	µg/L	1	Org-023	<1	6	<1	<1	0	97	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	6	<1	<1	0	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	6	<2	<2	0	100	[NT]
o-xylene	µg/L	1	Org-023	<1	6	<1	<1	0	100	[NT]
Naphthalene	µg/L	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	6	105	104	1	101	[NT]
Surrogate Toluene-d8	%		Org-023	99	6	100	101	1	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	99	6	88	98	11	106	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			02/07/2025	[NT]	[NT]	[NT]	[NT]	02/07/2025	[NT]
Date analysed	-			02/07/2025	[NT]	[NT]	[NT]	[NT]	02/07/2025	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W7	384638-6
Date prepared	-			02/07/2025	5	02/07/2025	02/07/2025		02/07/2025	02/07/2025
Date analysed	-			02/07/2025	5	02/07/2025	02/07/2025		02/07/2025	02/07/2025
Aluminium-Dissolved	µg/L	10	Metals-022	<10	5	50	50	0	83	71
Arsenic-Dissolved	µg/L	1	Metals-022	<1	5	9	10	11	82	89
Boron-Dissolved	µg/L	20	Metals-022	<20	5	60	60	0	85	93
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	5	<0.1	<0.1	0	83	86
Chromium-Dissolved	µg/L	1	Metals-022	<1	5	19	19	0	86	91
Cobalt-Dissolved	µg/L	1	Metals-022	<1	5	1	1	0	85	88
Copper-Dissolved	µg/L	1	Metals-022	<1	5	9	9	0	86	87
Lead-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	87	80
Nickel-Dissolved	µg/L	1	Metals-022	<1	5	2	2	0	85	87
Selenium-Dissolved	µg/L	1	Metals-022	<1	5	<1	<1	0	85	90
Zinc-Dissolved	µg/L	1	Metals-022	<1	5	3	3	0	82	88

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	384638-2
Date prepared	-			02/07/2025	1	02/07/2025	02/07/2025		02/07/2025	02/07/2025
Date analysed	-			02/07/2025	1	02/07/2025	02/07/2025		02/07/2025	02/07/2025
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	1	0.60	0.60	0	112	111

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			01/07/2025	1	01/07/2025	01/07/2025		01/07/2025	[NT]
Date analysed	-			01/07/2025	1	01/07/2025	01/07/2025		01/07/2025	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	2.4	2.4	0	107	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	<0.005	0	100	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.006	<0.005	18	90	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.008	0.007	13	93	[NT]
TKN in water	mg/L	0.1	Inorg-062	<0.1	4	10	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	4	10	11	10	98	[NT]
Hexavalent Chromium, Cr^{6+} (dissolved)	mg/L	0.005	Inorg-118	<0.005	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	4	01/07/2025	01/07/2025		[NT]	[NT]
Date analysed	-			[NT]	4	01/07/2025	01/07/2025		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	4	0.008	[NT]		[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.01	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.01	[NT]		[NT]	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	[NT]	4	<0.01	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			30/06/2025	1	30/06/2025	30/06/2025		30/06/2025	[NT]
Date analysed	-			30/06/2025	1	30/06/2025	30/06/2025		30/06/2025	[NT]
Total Suspended Solids	mg/L	5	Ext-073_J	<5	[NT]	[NT]	[NT]	[NT]	113	[NT]
pH	pH Units		Ext-073_F	[NT]	1	7.1	7.1	0	95	[NT]
Electrical Conductivity	µS/cm	1	Ext-073_G	[NT]	1	1100	1100	0	93	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

MISC_INORG: Nitrate as N in water, NOx as N in water, Nitrite as N in water PQL has been raised due to matrix interferences from analytes (other than those being tested) in the sample/s. Samples were diluted and reanalysed however same results were achieved.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP

Company:	RCA Australia	**RCA Reference Number (i.e. report title)**	13589a
Contact person:	Fiona Brooker	**PO No. (if applicable):**	Not applicable
Project Mgr:	Fiona Brooker	**Envirolab Quote No. :**	BM8
Sampler:	Anh Hoang	**Date results required:**	STD
Address:	92 Hill St Carrington, NSW 2294		
Phone:	02 4902 9200 **Mob:**	0410 230 644	
Email results to:	administrator@rca.com.au + enviro@rca.com.au	**Lab comments:**	
Email invoice to:			

ENVIROLAB GROUP

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200 sydney@envirolab.com.au

Sample information					Tests Required										Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	# Containers	E01580 - Total Suspended Solids (TSS)	E00705-NH3, E00815-NO2; E00790-NO3, E00850-NOx, E01090-Total P)	E010300 - Nutrient Suite (NH3, NO2, NO3, NOx, TKN (calc), Total N, Total P)	E07290 and E07220 TRH C6-C40	E03010_D - Dissolved (Aluminium, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Zinc)	E05360 - Hexavalent Chromium	E01140 - pH	E01150 - Electrical Conductivity		Sediment within container to be included in analysis if X	Provide as much information about the sample as you can
1	GW1	30/06/2025	Water	4		x					x	x		x	
2	GW3	30/06/2025	Water	4		x					x	x		x	
3	LP	30/06/2025	Water	4	x		x				x	x		x	
4	WL	30/06/2025	Water	4	x		x				x	x		x	
5	Sed-2	30/06/2025	Water	9	x		x	x	x	x	x	x		x	
6	SW2	30/06/2025	Water	9	x		x	x	x	x	x	x		x	
7	Sed-1	30/06/2025	Water	9	x		x	x	x	x	x	x		x	
	~~SW1~~	~~30/06/2025~~	~~Water~~	~~9~~	x		x	x	x	x	x	x		x	
8	QA 30-6-25	30/06/2025	Water	4	x		x				x	x		x	
			Total	47	6	2	6	3	3	3	8	8		8	

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 358650
Date Received: 1/7/25
Time Received: 9:00
Received By: CW
Temp: Cool/Ambient
Cooling: Ice/Icepack/None
Security: Intact/Broken/None

Relinquished by (company):	RCA Australia	**Received by (company):**	Envirolab
Print Name:	Anh Hoang	**Print Name:**	Sanjhana Joseph
Date & Time:	30.6.25 - 13:00	**Date & Time:**	30/6/25 13:15
Signature:		**Signature:**	

Lab use only:

Job Number	358650	**Cooling:**	Ice / Ice Pack / None
Temperature	6 °C	**Security Seal:**	Intact / Broken / Not Used
TAT Req:	SAME DAY / 1 / 2 / 3 / 4 / STD		

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	RCA Australia
Attention	RCA Administrator

Sample Login Details

Your reference	13589a
Envirolab Reference	384638
Date Sample Received	01/07/2025
Date Instructions Received	01/07/2025
Date Results Expected to be Reported	08/07/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	8 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
Cooling Method	None
Sampling Date Provided	YES

Comments

Samples arrived in Syd lab 01/07/2025 @0930, 6 degree C.

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved	Metals in Waters -Acid extractable	Ammonia as N in water	Nitrite as N in water	Nitrate as N in water	NOx as N in water	TKN in water	Total Nitrogen in water	Hexavalent Chromium, Cr6+ (dissolved)	Miscellaneous Inorganics
GW1				✓	✓	✓	✓	✓				✓
GW3				✓	✓	✓	✓	✓				✓
LP				✓	✓	✓	✓	✓	✓	✓		✓
WL				✓	✓	✓	✓	✓	✓	✓		✓
Sed-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sed-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QA062025				✓	✓	✓	✓	✓	✓	✓		✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.