

*Surface Water Results Summary  
Ecological Comparison*

| Sample Identification                           | PQL  | Aquatic Ecosystem<br>Guideline <sup>A</sup> | SW1                                | SW2           |
|---|------|---|------------------------------------|---------------|
| Rainfall (mm) in preceding 24hours <sup>B</sup> |      | 95% Fresh                                   | 1.2                                | 1.2           |
| Time of Sample Collection                       |      |   | 13:30                              | No water flow |
| Date of Sample Collection                       |      |   | 9/01/2024                          | --            |
| Sample Description                              |      |   | Clear sample, no odour, very clear | --            |
| Laboratory Report Reference                     |      |   | ES2400503                          | --            |
| Sample Purpose                                  |      |   | EPL Compliance                     |               |
| Sample collected by                             |      |   | Toll                               |               |
| Ammonia as N                                    | 0.01 | 0.9   | <b>1.3</b>                         | --            |
| Nitrate <sup>C</sup>                            | 0.01 | 0.04  | <b>5.07</b>                        | --            |
| Oil and Grease                                  | 5    |   | 9                                  | --            |
| Total Suspended Solds                           | 5    |   | 14                                 | --            |

All results are in units of mg/L

Blank Cell indicates no criterion available

PQL = Practical Quantitation Limit.

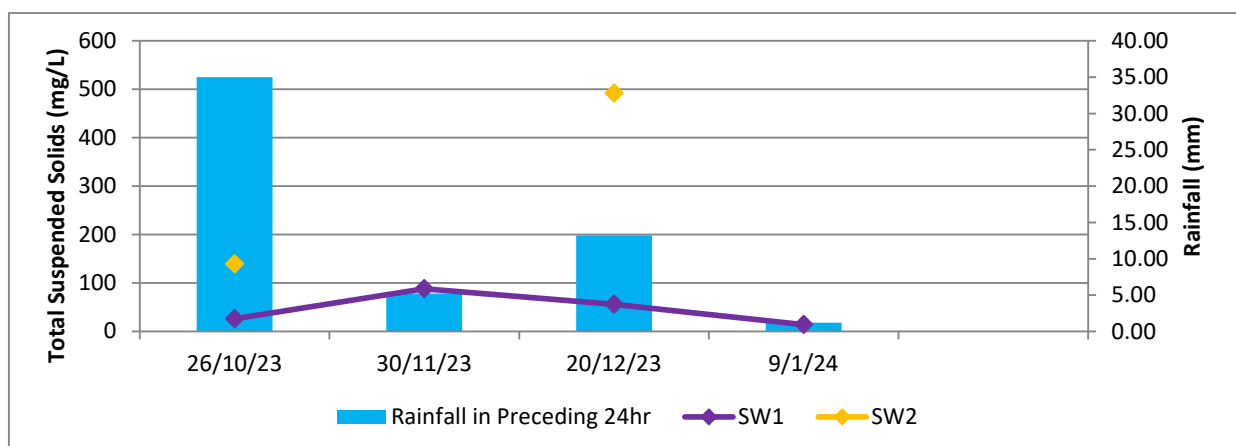
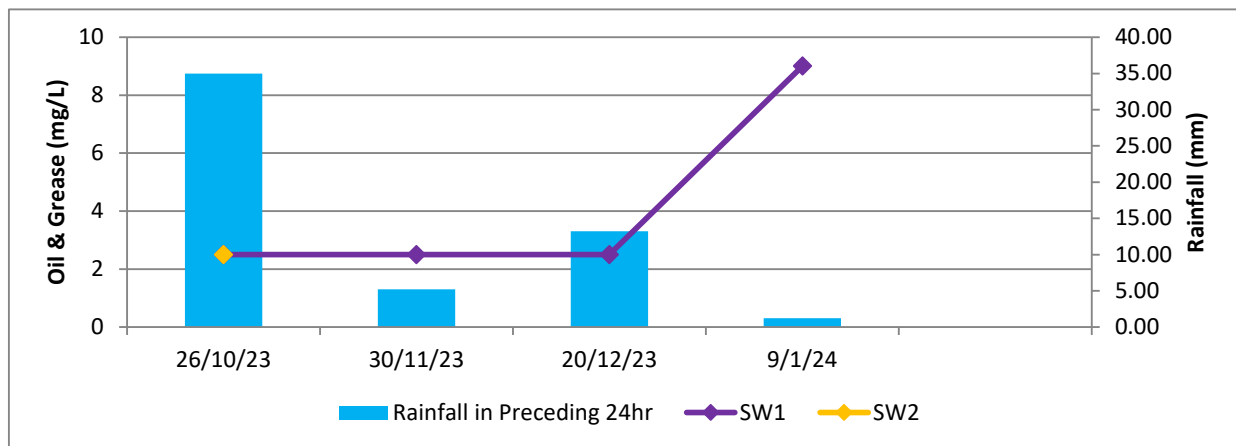
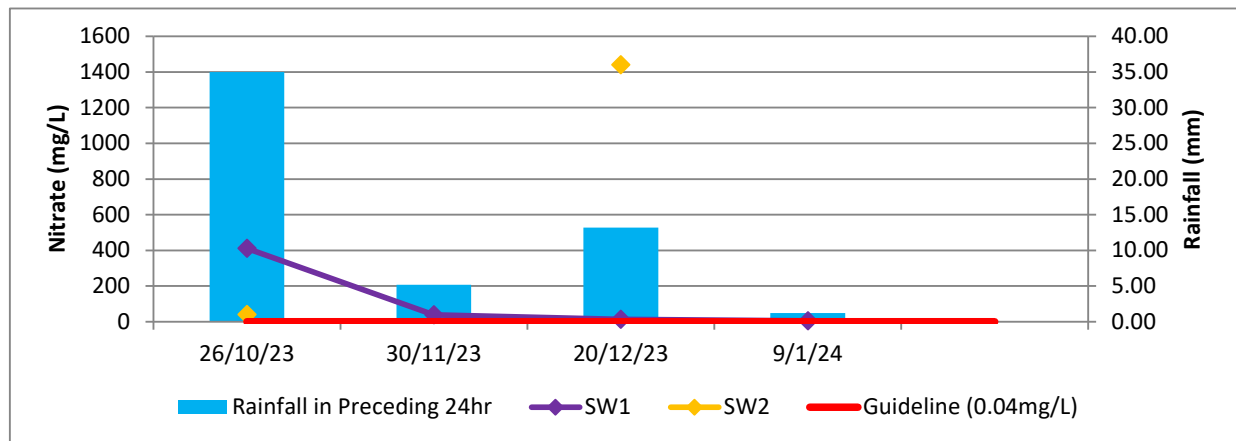
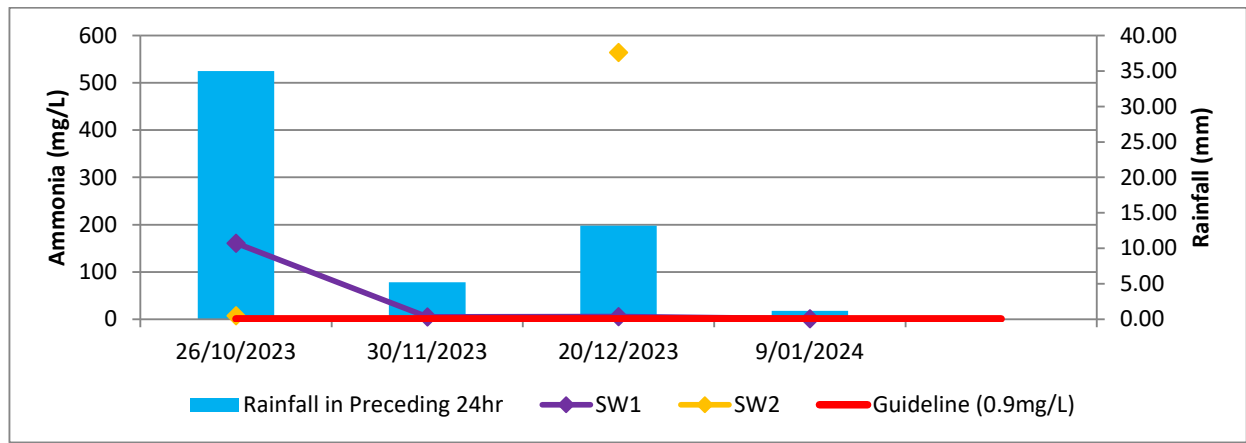
<sup>A</sup> % Protection Level for Receiving Water Type.

<sup>B</sup> Based on BOM Williamstown data from 9am 8th January to 9am 9th January

0.4mm of rainfall was recorded from 9am 9th January to 9am 10th January at BOM Williamstown

<sup>C</sup> Guidelines for Lowland (Coastal) Rivers in NSW

Results shown in **BOLD** are in excess of the guidelines





## CERTIFICATE OF ANALYSIS

**Work Order** : **ES2400503**  
**Client** : **ROBERT CARR & ASSOCIATES P/L**  
**Contact** : **ENVIRO**  
**Address** : **PO BOX 175**  
**CARRINGTON NSW, AUSTRALIA 2294**  
**Telephone** : **----**  
**Project** : **12513e**  
**Order number** : **----**  
**C-O-C number** : **----**  
**Sampler** : **Client**  
**Site** : **----**  
**Quote number** : **SYBQ/400/21**  
**No. of samples received** : **1**  
**No. of samples analysed** : **1**

**Page** : **1 of 2**  
**Laboratory** : **Environmental Division Sydney**  
**Contact** : **Customer Services ES**  
**Address** : **277-289 Woodpark Road Smithfield NSW Australia 2164**  
**Telephone** : **+61-2-8784 8555**  
**Date Samples Received** : **10-Jan-2024 10:15**  
**Date Analysis Commenced** : **11-Jan-2024**  
**Issue Date** : **17-Jan-2024 13:18**



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

| Signatories | Position                    | Accreditation Category             |
|-------------|-----------------------------|------------------------------------|
| Ankit Joshi | Senior Chemist - Inorganics | Sydney Inorganics, Smithfield, NSW |



## General Comments

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

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

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

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

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

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

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

## Analytical Results

Sub-Matrix: **WATER**  
 (Matrix: **WATER**)

Sample ID

|   |            |      |      | SW1               | ----  | ----  | ----  | ----  |
|---|------------|------|------|-------------------|-------|-------|-------|-------|
| Sampling date / time  |            |      |      | 09-Jan-2024 13:30 | ----  | ----  | ----  | ----  |
| Compound  | CAS Number | LOR  | Unit | ES2400503-001     | ----- | ----- | ----- | ----- |
| Result  |            |      |      | Result            | ----  | ----  | ----  | ----  |
| <b>EA025: Total Suspended Solids dried at 104 ± 2°C</b>             |            |      |      |                   |       |       |       |       |
| Suspended Solids (SS)   | ----       | 5    | mg/L | 14                | ----  | ---   | ----  | ----  |
| <b>EK055G: Ammonia as N by Discrete Analyser</b>                    |            |      |      |                   |       |       |       |       |
| Ammonia as N  | 7664-41-7  | 0.01 | mg/L | 1.30              | ----  | ----  | ----  | ----  |
| <b>EK057G: Nitrite as N by Discrete Analyser</b>                    |            |      |      |                   |       |       |       |       |
| Nitrite as N  | 14797-65-0 | 0.01 | mg/L | 0.07              | ----  | ----  | ----  | ----  |
| <b>EK058G: Nitrate as N by Discrete Analyser</b>                    |            |      |      |                   |       |       |       |       |
| Nitrate as N  | 14797-55-8 | 0.01 | mg/L | 5.07              | ----  | ----  | ----  | ----  |
| <b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b> |            |      |      |                   |       |       |       |       |
| Nitrite + Nitrate as N  | ----       | 0.01 | mg/L | 5.14              | ----  | ----  | ----  | ----  |
| <b>EP020: Oil and Grease (O&amp;G)</b>                              |            |      |      |                   |       |       |       |       |
| Oil & Grease  | ----       | 5    | mg/L | 9                 | ----  | ----  | ----  | ----  |



## QUALITY CONTROL REPORT

|                         |  |                         |   |
|-------------------------|--|-------------------------|---|
| Work Order              | : <b>ES2400503</b>                             | Page                    | : 1 of 3  |
| Client                  | : <b>ROBERT CARR &amp; ASSOCIATES P/L</b>      | Laboratory              | : Environmental Division Sydney                       |
| Contact                 | : ENVIRO                                       | Contact                 | : Customer Services ES                                |
| Address                 | : PO BOX 175<br>CARRINGTON NSW, AUSTRALIA 2294 | Address                 | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone               | : ----   | Telephone               | : +61-2-8784 8555                                     |
| Project                 | : 12513e                                       | Date Samples Received   | : 10-Jan-2024   |
| Order number            | : ----   | Date Analysis Commenced | : 11-Jan-2024   |
| C-O-C number            | : ----   | Issue Date              | : 17-Jan-2024   |
| Sampler                 | : Client                                       |                         |   |
| Site                    | : ----   |                         |   |
| Quote number            | : SYBQ/400/21                                  |                         |   |
| No. of samples received | : 1  |                         |   |
| No. of samples analysed | : 1  |                         |   |



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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

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

| Signatories | Position                    | Accreditation Category             |
|-------------|-----------------------------|------------------------------------|
| Ankit Joshi | Senior Chemist - Inorganics | Sydney Inorganics, Smithfield, NSW |



## General Comments

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

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER  |           |                                |            | Laboratory Duplicate (DUP) Report |      |                 |                  |         |                    |
|--|-----------|--------------------------------|------------|-----------------------------------|------|-----------------|------------------|---------|--------------------|
| Laboratory sample ID   | Sample ID | Method: Compound               | CAS Number | LOR                               | Unit | Original Result | Duplicate Result | RPD (%) | Acceptable RPD (%) |
| EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5541902)             |           |                                |            |                                   |      |                 |                  |         |                    |
| ES2400503-001  | SW1       | EA025H: Suspended Solids (SS)  | ----       | 5                                 | mg/L | 14              | 18               | 18.8    | No Limit           |
| ES2400818-003  | Anonymous | EA025H: Suspended Solids (SS)  | ----       | 5                                 | mg/L | <5              | <5               | 0.0     | No Limit           |
| ES2400839-002  | Anonymous | EA025H: Suspended Solids (SS)  | ----       | 5                                 | mg/L | 5               | 5                | 0.0     | No Limit           |
| ES2400929-002  | Anonymous | EA025H: Suspended Solids (SS)  | ----       | 5                                 | mg/L | 274             | 256              | 7.0     | 0% - 20%           |
| EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5536098)                    |           |                                |            |                                   |      |                 |                  |         |                    |
| ES2344853-001  | Anonymous | EK055G: Ammonia as N           | 7664-41-7  | 0.01                              | mg/L | 0.73            | 0.73             | 0.0     | 0% - 20%           |
| EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5536004)                    |           |                                |            |                                   |      |                 |                  |         |                    |
| ES2400503-001  | SW1       | EK057G: Nitrite as N           | 14797-65-0 | 0.01                              | mg/L | 0.07            | 0.07             | 0.0     | No Limit           |
| ES2400677-003  | Anonymous | EK057G: Nitrite as N           | 14797-65-0 | 0.01                              | mg/L | <0.01           | <0.01            | 0.0     | No Limit           |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5536099) |           |                                |            |                                   |      |                 |                  |         |                    |
| ES2400503-001  | SW1       | EK059G: Nitrite + Nitrate as N | ----       | 0.01                              | mg/L | 5.14            | 5.12             | 0.3     | 0% - 20%           |
| ES2400562-007  | Anonymous | EK059G: Nitrite + Nitrate as N | ----       | 0.01                              | mg/L | <0.01           | <0.01            | 0.0     | No Limit           |



## Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

| Sub-Matrix: WATER   |            |      |      | Method Blank (MB)<br>Report | Laboratory Control Spike (LCS) Report |                           |                                   |     |
|---|------------|------|------|-----------------------------|---------------------------------------|---------------------------|-----------------------------------|-----|
|   |            |      |      |                             | Spike<br>Concentration                | Spike Recovery (%)<br>LCS | Acceptable Limits (%)<br>Low High |     |
| Method: Compound  | CAS Number | LOR  | Unit | Result                      |                                       |                           |                                   |     |
| EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5541902)             |            |      |      |                             |                                       |                           |                                   |     |
| EA025H: Suspended Solids (SS)   | ----       | 5    | mg/L | <5                          | 150 mg/L                              | 95.7                      | 83.0                              | 129 |
|   |            |      |      | <5                          | 1000 mg/L                             | 94.6                      | 82.0                              | 110 |
|   |            |      |      | <5                          | 841 mg/L                              | 101                       | 83.0                              | 118 |
| EK055G: Ammonia as N by Discrete Analyser (QCLot: 5536098)                    |            |      |      |                             |                                       |                           |                                   |     |
| EK055G: Ammonia as N  | 7664-41-7  | 0.01 | mg/L | <0.01                       | 1 mg/L                                | 101                       | 90.0                              | 114 |
| EK057G: Nitrite as N by Discrete Analyser (QCLot: 5536004)                    |            |      |      |                             |                                       |                           |                                   |     |
| EK057G: Nitrite as N  | 14797-65-0 | 0.01 | mg/L | <0.01                       | 0.5 mg/L                              | 101                       | 82.0                              | 114 |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5536099) |            |      |      |                             |                                       |                           |                                   |     |
| EK059G: Nitrite + Nitrate as N  | ----       | 0.01 | mg/L | <0.01                       | 0.5 mg/L                              | 95.2                      | 91.0                              | 113 |
| EP020: Oil and Grease (O&G) (QCLot: 5541905)                                  |            |      |      |                             |                                       |                           |                                   |     |
| EP020: Oil & Grease   | ----       | 5    | mg/L | <5                          | 5000 mg/L                             | 97.1                      | 81.0                              | 121 |
|   |            |      |      | <5                          | 4000 mg/L                             | 101                       | 70.0                              | 110 |

## Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

|  |           |                                |            | Matrix Spike (MS) Report |                          |                       |      |
|--|-----------|--------------------------------|------------|--------------------------|--------------------------|-----------------------|------|
|  |           |                                |            | Spike<br>Concentration   | Spike Recovery (%)<br>MS | Acceptable Limits (%) |      |
| Laboratory sample ID   | Sample ID | Method: Compound               | CAS Number |                          |                          | Low                   | High |
| <b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 5536098)</b>                    |           |                                |            |                          |                          |                       |      |
| ES2344853-001  | Anonymous | EK055G: Ammonia as N           | 7664-41-7  | 1 mg/L                   | 89.6                     | 70.0                  | 130  |
| <b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 5536004)</b>                    |           |                                |            |                          |                          |                       |      |
| ES2400503-001  | SW1       | EK057G: Nitrite as N           | 14797-65-0 | 0.5 mg/L                 | 108                      | 70.0                  | 130  |
| <b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5536099)</b> |           |                                |            |                          |                          |                       |      |
| ES2400503-001  | SW1       | EK059G: Nitrite + Nitrate as N | ----       | 0.5 mg/L                 | # Not Determined         | 70.0                  | 130  |



## QA/QC Compliance Assessment to assist with Quality Review

|              |                                |                         |                                 |
|--------------|--------------------------------|-------------------------|---------------------------------|
| Work Order   | : ES2400503                    | Page                    | : 1 of 4                        |
| Client       | : ROBERT CARR & ASSOCIATES P/L | Laboratory              | : Environmental Division Sydney |
| Contact      | : ENVIRO                       | Telephone               | : +61-2-8784 8555               |
| Project      | : 12513e                       | Date Samples Received   | : 10-Jan-2024                   |
| Site         | : ----                         | Issue Date              | : 17-Jan-2024                   |
| Sampler      | : Client                       | No. of samples received | : 1                             |
| Order number | : ----                         | No. of samples analysed | : 1                             |

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

#### Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.





Outliers : Quality Control Samples  
Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

| Matrix: WATER  |                      |                  |                        |            |                |        |   |
|--|----------------------|------------------|------------------------|------------|----------------|--------|---|
| Compound Group Name                                    | Laboratory Sample ID | Client Sample ID | Analyte                | CAS Number | Data           | Limits | Comment   |
| Matrix Spike (MS) Recoveries                           |                      |                  |                        |            |                |        |   |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar | ES2400503--001       | SW1              | Nitrite + Nitrate as N | ----       | Not Determined | ----   | MS recovery not determined, background level greater than or equal to 4x spike level. |

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

| Matrix: WATER  |             |                          |                    | Evaluation: ✖ = Holding time breach ; ✔ = Within holding time. |               |                  |            |
|--|-------------|--------------------------|--------------------|--|---------------|------------------|------------|
| Method   | Sample Date | Extraction / Preparation |                    |  | Analysis      |                  |            |
| Container / Client Sample ID(s)                              |             | Date extracted           | Due for extraction | Evaluation   | Date analysed | Due for analysis | Evaluation |
| EA025: Total Suspended Solids dried at 104 ± 2°C             |             |                          |                    |  |               |                  |            |
| Clear Plastic Bottle - Natural (EA025H)<br>SW1               | 09-Jan-2024 | ----                     | ----               | ----   | 15-Jan-2024   | 16-Jan-2024      | ✔          |
| EK055G: Ammonia as N by Discrete Analyser                    |             |                          |                    |  |               |                  |            |
| Clear Plastic Bottle - Sulfuric Acid (EK055G)<br>SW1         | 09-Jan-2024 | ----                     | ----               | ----   | 11-Jan-2024   | 06-Feb-2024      | ✔          |
| EK057G: Nitrite as N by Discrete Analyser                    |             |                          |                    |  |               |                  |            |
| Clear Plastic Bottle - Natural (EK057G)<br>SW1               | 09-Jan-2024 | ----                     | ----               | ----   | 11-Jan-2024   | 11-Jan-2024      | ✔          |
| EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser |             |                          |                    |  |               |                  |            |
| Clear Plastic Bottle - Sulfuric Acid (EK059G)<br>SW1         | 09-Jan-2024 | ----                     | ----               | ----   | 11-Jan-2024   | 06-Feb-2024      | ✔          |
| EP020: Oil and Grease (O&G)                                  |             |                          |                    |  |               |                  |            |
| Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)<br>SW1 | 09-Jan-2024 | ----                     | ----               | ----   | 16-Jan-2024   | 06-Feb-2024      | ✔          |



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.


| Quality Control Sample Type                         |        | Count |         | Rate (%) |          |            | Quality Control Specification  |
|---|--------|-------|---------|----------|----------|------------|--------------------------------|
| Analytical Methods                                  | Method | QC    | Regular | Actual   | Expected | Evaluation |                                |
| Laboratory Duplicates (DUP)                         |        |       |         |          |          |            |                                |
| Ammonia as N by Discrete analyser                   | EK055G | 1     | 7       | 14.29    | 10.00    | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 2     | 17      | 11.76    | 10.00    | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser                   | EK057G | 2     | 20      | 10.00    | 10.00    | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Suspended Solids (High Level)                       | EA025H | 4     | 40      | 10.00    | 10.00    | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Laboratory Control Samples (LCS)                    |        |       |         |          |          |            |                                |
| Ammonia as N by Discrete analyser                   | EK055G | 1     | 7       | 14.29    | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1     | 17      | 5.88     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser                   | EK057G | 1     | 20      | 5.00     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Oil and Grease                                      | EP020  | 4     | 50      | 8.00     | 8.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Suspended Solids (High Level)                       | EA025H | 5     | 40      | 12.50    | 12.50    | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Method Blanks (MB)                                  |        |       |         |          |          |            |                                |
| Ammonia as N by Discrete analyser                   | EK055G | 1     | 7       | 14.29    | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1     | 17      | 5.88     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser                   | EK057G | 1     | 20      | 5.00     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Oil and Grease                                      | EP020  | 3     | 50      | 6.00     | 6.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Suspended Solids (High Level)                       | EA025H | 2     | 40      | 5.00     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Matrix Spikes (MS)                                  |        |       |         |          |          |            |                                |
| Ammonia as N by Discrete analyser                   | EK055G | 1     | 7       | 14.29    | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | 1     | 17      | 5.88     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |
| Nitrite as N by Discrete Analyser                   | EK057G | 1     | 20      | 5.00     | 5.00     | ✓          | NEPM 2013 B3 & ALS QC Standard |



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

| Analytical Methods                                  | Method | Matrix | Method Descriptions   |
|---|--------|--------|---|
| Suspended Solids (High Level)                       | EA025H | WATER  | In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of 'non-filterable' residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3) |
| Ammonia as N by Discrete analyser                   | EK055G | WATER  | In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)  |
| Nitrite as N by Discrete Analyser                   | EK057G | WATER  | In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)   |
| Nitrate as N by Discrete Analyser                   | EK058G | WATER  | In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)   |
| Nitrite and Nitrate as N (NOx) by Discrete Analyser | EK059G | WATER  | In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)   |
| Oil and Grease                                      | EP020  | WATER  | In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)   |

|  <b>CHAIN OF CUSTODY</b><br>ALS Laboratory:<br>please tick →                                 |   | ADELAIDE 21 Burna Road Pooraka SA 5005<br>Ph: 08 8359 0500 E: aelaide@alsglobal.com<br>BRISBANE 32 Sharn Street Stafford QLD 4053<br>Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com<br>GLADSTONE 46 Callimondah Drive Clinton QLD 4680<br>Ph: 07 7471 5600 E: gladstone@alsglobal.com |        | MACKAY 78 Hartow Road Mackay QLD 4740<br>Ph: 07 4944 0177 E: mackay@alsglobal.com<br>MELBOURNE 2-4 Westall Road Springvale VIC 3171<br>Ph: 03 8549 6000 E: samples.melbourne@alsglobal.com<br>MUDGEE 27 Sydney Road Mudgee NSW 2850<br>Ph: 02 6372 0735 E: mudgee.mel@alsglobal.com |                  | NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304<br>Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com<br>NOWRA 4113 Geary Place North Nowra NSW 2541<br>Ph: 02 4423 2063 E: nowra@alsglobal.com<br>PERTH 10 Had Way Malaga WA 6060<br>Ph: 08 9200 7655 E: samples.perth@alsglobal.com                    |         | SYDNEY 277-280 Woodpark Road Smithfield NSW 2164<br>Ph: 02 8784 8555 E: samples.sydney@alsglobal.com<br>TOWNSVILLE 14-15 Deanna Court Baffle QLD 4818<br>Ph: 07 4706 0500 E: townsville.environmental@alsglobal.com<br>WOLLONGONG 18 Kenny Street Wollongong NSW 2500<br>Ph: 02 4225 3125 E: portlandia@alsglobal.com |                |  |  |  |                        |  |  |  |                                      |
|---|---|---|--------|---|------------------|--|---------|---|----------------|--|--|--|------------------------|--|--|--|--------------------------------------|
| CLIENT: RCA Australia<br>OFFICE: 92 Hill Street, Carrington<br>RCA Ref No: 12513e   |   | TURNAROUND REQUIREMENTS : <input type="checkbox"/> Standard TAT (List due date):<br>(Standard TAT may be longer for some tests e.g., Ultra Trace Organics)<br>ALS QUOTE NO.: SYBQ_400_21  |        | CQC SEQUENCE NUMBER (Circle)<br>CQC: 1<br>OF: 1   |                  | FOR LABORATORY USE ONLY (Circle)<br>Custody Seal Intact? Yes <input checked="" type="radio"/> No <input type="radio"/><br>Free ice / frozen ice bricks present upon receipt? Yes <input checked="" type="radio"/> No <input type="radio"/><br>Random Sample Temperature on Receipt: 6.8 °C<br>Other comment: |         |   |                |  |  |  |                        |  |  |  |                                      |
| PROJECT MANAGER: Fiona Brooker<br>SAMPLER: Client<br>COC emailed to ALS? (NO)<br>Email Reports to: administrator@rca.com.au + enviro@rca.com.au<br>Email Invoice to: as above |   | CONTACT PH: 0408 687 529<br>SAMPLER MOBILE: -<br>EDD FORMAT (or default):<br>RELINQUISHED BY:<br>DATE/TIME:   |        | RECEIVED BY: JN 10.1.24<br>DATE/TIME: 0845  |                  | RELINQUISHED BY: JN 10.1.24<br>DATE/TIME: 1700   |         |   |                |  |  |  |                        |  |  |  |                                      |
| COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:  |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
| ALS USE   | SAMPLE DETAILS<br>MATRIX: SOLID (S) WATER (W) |   |        | CONTAINER INFORMATION   |                  | ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)<br>Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)  |         |   |                |  |  |  | Additional Information |  |  |  |                                      |
| LAB ID  | Sample ID                                     | Date / Time   | Matrix | Type & Preservative<br>(refer to codes below)   | Total Containers | Ammonia  | Nitrate | Total Suspended Solids  | Oil and Grease |  |  |  |                        |  |  |  |                                      |
| 1   | SW1   | 09/01-13:30   | W      | Purple Glass, Purple Plastic, Green Plastic   | 3                | x  | x       | x   | x              |  |  |  |                        |  |  |  |                                      |
| -   | SW2   | N/A   | W      | Purple Glass, Purple Plastic, Green Plastic   | 3                | x  | x       | x   | x              |  |  |  |                        |  |  |  | Insufficient water to obtain sample. |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
|   |   |   |        |   |                  |  |         |   |                |  |  |  |                        |  |  |  |                                      |
| TOTAL   |   |   |        |   | 6                | 2  | 2       | 2   | 2              |  |  |  |                        |  |  |  |                                      |

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde  
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

Environmental Division  
 Sydney  
 Work Order Reference  
**ES2400503**



Telephone : +61-2-8784 8555



## SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2400503**

Client : **ROBERT CARR & ASSOCIATES P/L**  
Contact : **ENVIRO**  
Address : **PO BOX 175**  
**CARRINGTON NSW, AUSTRALIA 2294**

E-mail : **enviro@rca.com.au**  
Telephone : **----**  
Facsimile : **----**

Project : **12513e**  
Order number : **----**  
C-O-C number : **----**  
Site : **----**  
Sampler : **Client**

Laboratory : **Environmental Division Sydney**  
Contact : **Customer Services ES**  
Address : **277-289 Woodpark Road Smithfield**  
**NSW Australia 2164**

E-mail : **ALSEnviro.Sydney@ALSGlobal.com**  
Telephone : **+61-2-8784 8555**  
Facsimile : **+61-2-8784 8500**

Page : **1 of 2**  
Quote number : **ES2017ROBCAR0004 (SYBQ/400/21)**  
QC Level : **NEPM 2013 B3 & ALS QC Standard**

### Dates

Date Samples Received : **10-Jan-2024 10:15**  
Client Requested Due : **17-Jan-2024**  
Date

Issue Date : **11-Jan-2024**  
Scheduled Reporting Date : **17-Jan-2024**

### Delivery Details

Mode of Delivery : **Undefined**  
No. of coolers/boxes : **1**  
Receipt Detail :

Security Seal : **Not Available**  
Temperature : **6.8°C**  
No. of samples received / analysed : **1 / 1**

### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample "SW2" was not received; comment on COC stated "insufficient water to obtain sample".**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

| Laboratory sample ID | Sampling date / time | Sample ID | WATER - EA025H<br>Suspended Solids - Standard Level | WATER - EK055G<br>Ammonia as N By Discrete Analyser | WATER - EK058G<br>Nitrate as N by Discrete Analyser | WATER - EP020<br>Oil & Grease (O&G) |
|----------------------|----------------------|-----------|---|---|---|-------------------------------------|
| ES2400503-001        | 09-Jan-2024 13:30    | SW1       | ✓   | ✓   | ✓   | ✓                                   |

## Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

## Requested Deliverables

### ADMINISTRATOR

|  |       |                          |
|--|-------|--------------------------|
| - *AU Certificate of Analysis - NATA (COA)                     | Email | administrator@rca.com.au |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)    | Email | administrator@rca.com.au |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)            | Email | administrator@rca.com.au |
| - A4 - AU Sample Receipt Notification - Environmental HT (SRN) | Email | administrator@rca.com.au |
| - A4 - AU Tax Invoice (INV)                                    | Email | administrator@rca.com.au |
| - Chain of Custody (CoC) (COC)                                 | Email | administrator@rca.com.au |
| - EDI Format - ENMRG (ENMRG)                                   | Email | administrator@rca.com.au |
| - EDI Format - ESDAT (ESDAT)                                   | Email | administrator@rca.com.au |

### ALL INVOICES

|                             |       |                          |
|-----------------------------|-------|--------------------------|
| - A4 - AU Tax Invoice (INV) | Email | administrator@rca.com.au |
|-----------------------------|-------|--------------------------|

### ENVIRO

|  |       |                   |
|--|-------|-------------------|
| - *AU Certificate of Analysis - NATA (COA)                     | Email | enviro@rca.com.au |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)    | Email | enviro@rca.com.au |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)            | Email | enviro@rca.com.au |
| - A4 - AU Sample Receipt Notification - Environmental HT (SRN) | Email | enviro@rca.com.au |
| - A4 - AU Tax Invoice (INV)                                    | Email | enviro@rca.com.au |
| - Chain of Custody (CoC) (COC)                                 | Email | enviro@rca.com.au |
| - EDI Format - ENMRG (ENMRG)                                   | Email | enviro@rca.com.au |
| - EDI Format - ESDAT (ESDAT)                                   | Email | enviro@rca.com.au |