

2025 Compliance Report

**Northeast Business Park Project, Queensland
EPBC Approval No. 2006/2912**



Document Version Control

VERSION	PREPARED BY	REVIEWED BY	DATE
1.0	M. McErlean	B. Finney M. Hall-Brown	29/7/25

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Introduction

North Harbour Holdings Pty Ltd is currently developing a master planned community, known as “North Harbour”. On 12 July 2006, the project was determined to be a controlled action pursuant to s.75 of the *Environmental Protection and Biodiversity Conservation Act 1999* under the controlling provisions of;

- Sections 16 and 17B (Wetlands of international importance)
- Sections 18 and 18A (Listed threatened species and communities)
- Sections 20 and 20A (Listed migratory species)

Following a detailed environmental impact investigation and assessment process, the project was granted approval with conditions on 18 December 2012. Commencement of the action (as defined within the approval) was triggered 12 May 2014. Condition 3 of the approval requires the publication of an annual report, addressing compliance with each of the conditions of approval.

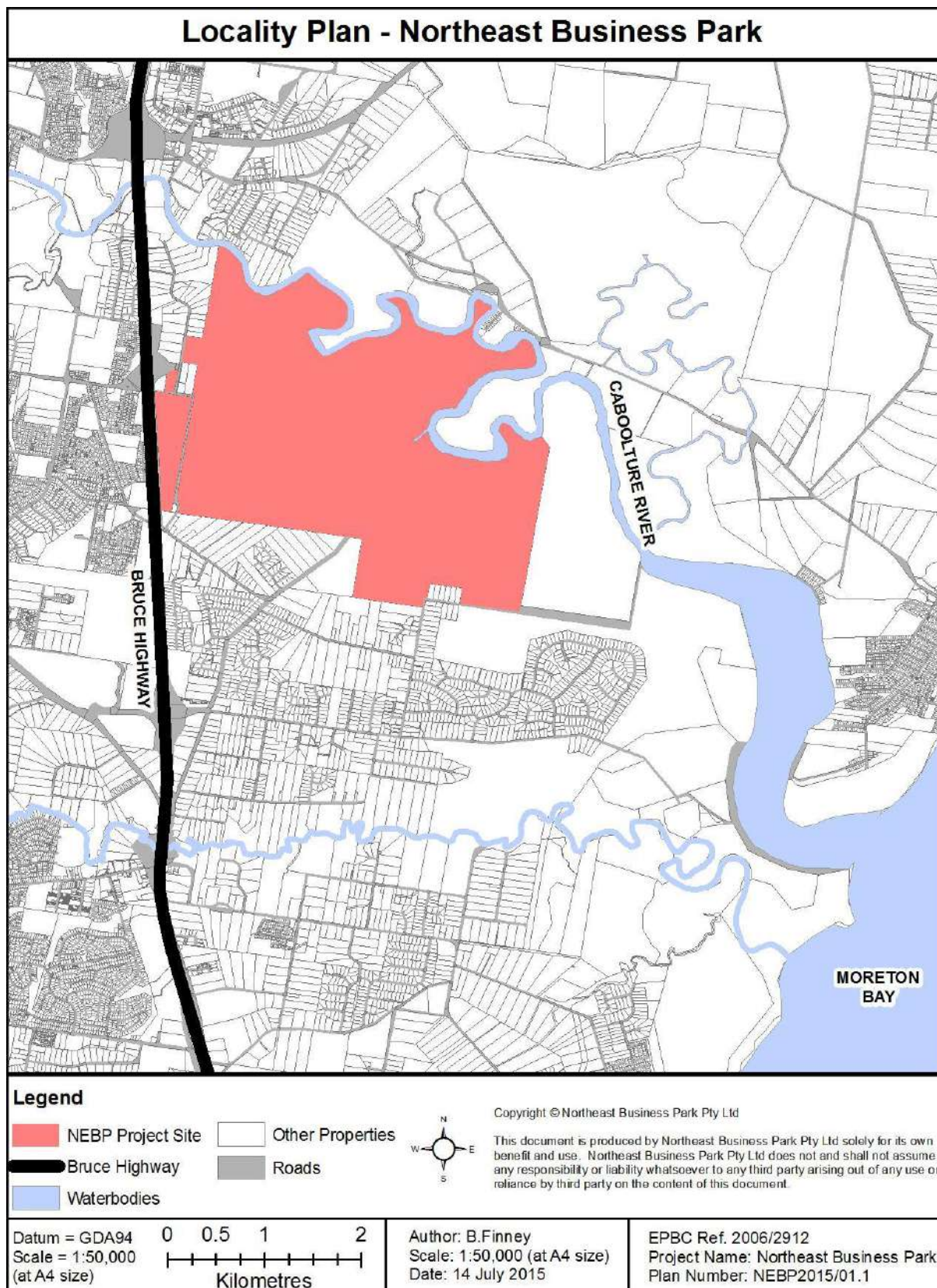
This document is the eleventh compliance report, relating to activities undertaken from 13 May 2024 to 12 May 2025. Please note that during the preparation period of this report, subsequent approvals have been acquired. Reporting associated with these approvals and works undertaken after 12 May 2025 will be provided in the 2026 report.

Project Description

EPBC Number:	2006/2912
Project Name:	Northeast Business Park
Approval Holder:	North Harbour Holdings Pty Ltd (ACN: 101 569 457)*
Approved Action:	To develop an approximately 762 hectare site, for an integrated business park, including residential and marina precincts, located to the east of the Bruce Highway, and bounded to the north by the Caboolture River, Caboolture Shire, Queensland.
Project Location:	The project is located in the Moreton Bay region, Queensland. The property address is 34 Nolan Drive, Morayfield. The site is bounded to the west by the Bruce Highway and to the north by the Caboolture River, as shown on the locality plan at figure 1.
Responsible Person:	Malcolm Hall-Brown (Chairman)
Reporting Period:	13 May 2024 – 12 May 2025
Report Preparation:	June to August 2025

* Approval holder previously known as Northeast Business Park Pty Ltd. The ABN / ACN and other business details remain the same.

Figure 1



Description of Activities

During the period relevant to this report, the following activities have been undertaken for the project;

Activities undertaken under the LBEMP & sub-plan 1

All activities undertaken under sub-plan 1 were completed in a previous reporting period (2014 – 2015). Please refer to the 2015 compliance report in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 2

All activities undertaken under sub-plan 2 were completed in previous reporting periods (2014 – 2015 and 2015 - 2016). Please refer to the previous compliance reports in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 3

All activities undertaken under sub-plan 3 were completed in previous reporting periods (2015 – 2016 and 2016 - 2017). Please refer to the previous compliance reports in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 4

All activities undertaken under sub-plan 4 were completed in previous reporting periods (2017 – 2024). Please refer to the previous compliance reports in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 5

All activities undertaken under Sub-plan 5 (approved 3 April 2018) were completed in previous reporting period (2018 - 2019). Please refer to the previous compliance report in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 6

Sub-plan 6 (approved 4 January 2021) defined the approved works program for;

- Vegetation clearing, bulk earthworks and civil construction of the Mixed Industry and Business development. These works were commenced in April 2021 and are ongoing as at 12 May 2025 (closing date for the 2025 compliance reporting period). These works are expected to be completed in the coming year.
- An updated Sub-plan 6 has been submitted and approved on 20 September 2024. The change to the Sub-plan reduces the extent of earthworks to be undertaken in the north portion of the development.

Activities undertaken under the LBEMP & sub-plan 7

All activities undertaken under Sub-plan 7 (approved 23 August 2021) were completed in previous reporting period (2023 - 2024). Please refer to the previous compliance report in relation to these actions.

Activities undertaken under the LBEMP & sub-plan 8

Sub-plan 8 (approved 21 February 2025) defined the approved works program for;

- Bulk earthworks and civil construction of the Mixed Industry and Business development west of Hardwood Drive. These works were commenced in March 2025. These works are expected to be completed in the coming two years.

Activities undertaken under the LBEMP

An updated LBEMP was approved 21 December 2021. The changes to the LBEMP do not impact the approved Sub-plans.

Other project related activities

Vegetation rehabilitation of a riparian corridor alongside the Caboolture River (100m wide behind the top of the southern riverbank) has been underway for some time, with various planting and management methodologies being trialled since 2012. Rehabilitation actions in the current reporting period focused on control of weed species and maintenance within existing replanted areas. Assessment of rehabilitation progress within the riparian corridor has been undertaken as part of the current report (see appendix C).

Instances of Non-Compliance

No instances of non-compliance with the conditions of approval 2006/2912 were identified during the reporting period.

The project site was inspected by officers of the Department of Environment and Energy on 25 September 2018. The inspection was for the purpose of monitoring compliance with the EPBC approval. No instances of non-compliance were identified during the site visit, as confirmed by the follow up letter sent 7 November 2018.

Summary

The long-term development of the project has continued in the 2024 - 2025 reporting period, with this report providing information on operations conducted during the eleventh 12 month reporting period following commencement of the action.

No compliance issues have been identified during the reporting period.

Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed	_____
Full name (please print)	Malcolm Hall-Brown
Position (please print)	Chairperson
Organisation (please print including ABN/ACN if applicable)	North Harbour Holdings Pty Ltd ACN 101 569 457
Date	____/____/____

APPENDICES

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APPENDIX A: COMPLIANCE ASSESSMENT REPORTING TABLE

EPBC APPROVAL 2006/2912 - COMPLIANCE ASSESSMENT REPORTING TABLE

Condition Number / Reference	Condition	Project Compliance	Evidence / Comments
1	Within 20 days after the commencement of the action, the person taking the action must advise the Department in writing of the actual date of commencement of the action.	Not Applicable	Addressed in the 2015 report.
2	The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	Accurate records maintained by the proponent and contractors, as demonstrated by the information below and associated documentation attached. This includes the summaries for surface water quality monitoring, rehabilitation works and acid sulphate soils at appendix C. Records available for audit by the Department or independent auditor upon request.
3	Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.	Compliant	The 2024 compliance report was uploaded to the NEBP website 12 August 2024, within 3 months of the commencement date anniversary (12 May 2014). This was confirmed via email to the Department as evidenced at appendix C.
4	Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit	Not Applicable	No direction for an independent audit issued by the Minister in the 12 month period applicable to this report.

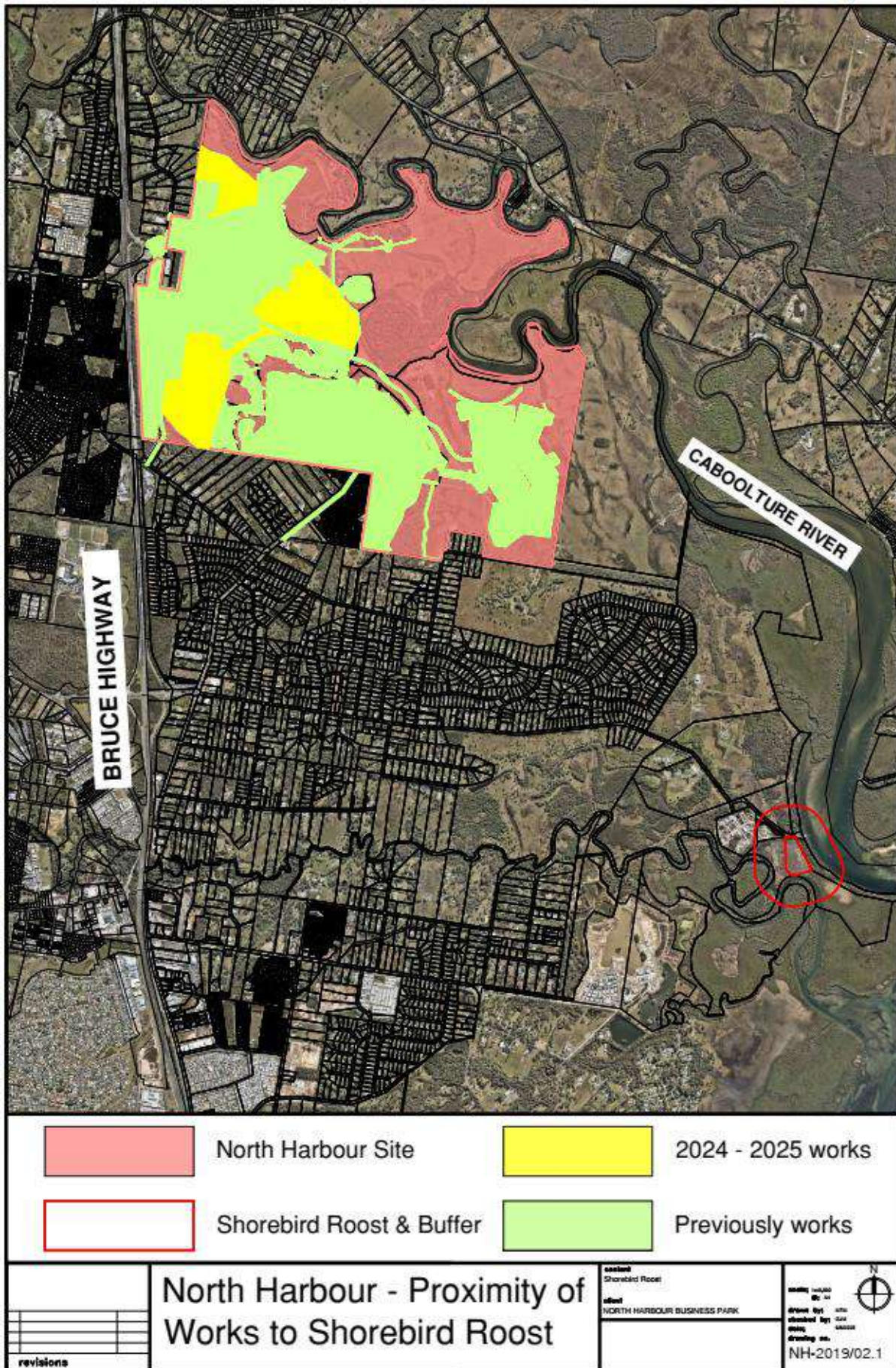
	criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.		
5	If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plan/s as specified in the conditions, the person taking the action must submit to the Department for the Minister's written approval a revised version of that management plan/s. The varied activity shall not commence until the Minister has approved the varied management plan/s in writing. The Minister will not approve a varied management plan/s unless the revised management plan/s would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised management plan/s, that management plan/s must be implemented in place of the management plan's originally approved.	Not Applicable	No activities undertaken otherwise than in accordance with the management plans (approved LBEMP, sub-plan 6, and sub-plan 8) during the 12 month period applicable to this report. Please note activities undertaken under sub-plans 1, 2, 3, 4, 5 and 7 were completed prior to this reporting period. For further detail please refer to the 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, and 2024 compliance reports.
6	If the Minister believes that it is necessary or convenient for the better protection of the Moreton Bay Ramsar site (sections 16 and 17B of the EPBC Act), listed threatened species (sections 18 and 18A of the EPBC Act) or migratory shorebirds (sections 20 and 20A of the EPBC Act) to do so, the Minister may request that the person taking the action make specified revisions to the management plan/s specified in the conditions and submit the revised management plan/s for the Minister's written approval. The person taking the action must comply with any such request. The revised approved management plan/s must be implemented. Unless the Minister has approved the revised management plan/s then the person taking the action must continue to implement the management plan/s originally approved, as specified in the conditions.	Not Applicable	No request from the Minister to revise the management plans received in the 12 month period applicable to this report.
7	If, at any time after five years from the date of this approval, the person taking the action has not substantially commenced	Not Applicable	Addressed in the 2015 report.

	the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister.		
8	Unless otherwise agreed to in writing by the Minister, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.	Compliant	The amended Sub-plan 6 was published on the North Harbour website on 1/10/2024. Sub-plan 8 was published on the North Harbour website on 25/2/2025. Works during the period relate to the LBEMP, sub-plan 6 and sub-plan 8, which were all approved in prior reporting periods and addressed in previous compliance reports.
9	The person taking the action must prepare and submit a Land-Based Environmental Management Plan (LBEMP) for the Minister's approval. The LBEMP must include, but not be limited to, the following: a. Measures to minimise impacts on EPBC Act listed threatened species, including measure to care for injured fauna and a vegetation clearing strategy; b. Measures to limit the spread of pests and invasive species; c. Sediment and erosion controls; and d. Measures to implement, monitor, or improve (should deficiencies be identified) the LBEMP The person taking the action must not conduct clearance of native vegetation unless the Minister has approved the LBEMP. The approved LBEMP must be implemented.	Compliant	Works undertaken in this reporting period in the areas addressed by the LBEMP, sub-plan 6 and sub-plan 8. Land Based Environmental Management Plan, sub-plan 6, and sub-plan 8 were prepared and approved prior to commencement of relevant works, including provisions for points a. - d. in condition 9. LBEMP approved 21/12/2021 Amended LBEMP sub-plan 6 approved 20/9/2024 LBEMP sub-plan 8 approved 21/2/2025 No clearing of vegetation was undertaking during the reporting period.
10	The person taking the action must not destroy by clearing or any other activity, more than 25 ha of native vegetation on the subject site. a. If clearing more than 25 ha of native vegetation is	Compliant	No clearing of vegetation was undertaking during the reporting period.

	necessary, the person taking the action must: i. Undertake a pre-clearance survey of additional areas to be cleared; and ii. Submit the pre-clearance survey to the Minister for approval, prior to clearing. The person taking the action must not clear more than 25 ha of native vegetation unless then Minister has provided approval in writing to do so.		
11	No construction activities may occur within 200 m of the critical high tide shorebird roost area at the mouth of the Caboolture River, during the months of September to April (inclusive) of any given year.	Compliant	The shorebird roost area is well removed from the project site owned by North Harbour Holdings Pty Ltd. Only works associated with dredging of the navigation channel in the Caboolture River will occur in the vicinity of the roost area. No dredging or associated works have been undertaken in the reporting period. All construction activities undertaken in the reporting period have been outside the 200m buffer to the critical high tide shorebird roost area, as shown by plan number NH-2019/02.1 (below).
12	The person taking the action must undertake, maintain and monitor all bank rehabilitation and restoration works detailed in Appendix J of the EIS – Riverbank Erosion Assessment, to prevent unacceptable impacts to wetlands of international importance (section 16 and 17B of the EPBC Act). This must include, but not be limited to: a. Undertaking, maintaining and monitoring the revegetation of riparian area on the referred subject site; and b. Undertaking, maintaining and monitoring the restoration of wetland area on the referred subject site.	Compliant	The existing rehabilitation works in riparian areas alongside the Caboolture River have continued to be maintained.

13	The person taking the action must prepare and submit a Caboolture River Estuary Management Plan (CREMP) for the Minister's approval. a. The CREMP must include, but not be limited to the following: i. Detail all restoration and rehabilitation works that will be undertaken to mitigate impacts on the river bed and banks, including a description of priority works and agreed performance criteria. The strategy must avoid the use of artificial bank protection structures; ii. Identify corrective actions or alternative options that will be implemented if unexpected adverse impacts on marine and shorebird species are detected and are attributed to the construction and operation of the action; iii. Specify a schedule of works and/or compensatory actions required to address all potential development related impacts, and measures to implement them; iv. Specify a monitoring program, including requirements for further baseline data that must be collected prior to capital dredging works. Monitoring must include, but not be limited to: 1. Wave energy recorded at the river bank at a minimum of three key locations. Monitoring must also include concurrent measurements of boat traffic and wind velocity. This must be conducted at least once every three months; 2. Water level recording in the mid estuary to determine any changes to the hydrodynamics that may be attributable to dredging. This must be conducted at least once every three months; 3. Annual bank erosion monitoring at fixed locations, including but not limited to, at least	Not Applicable	No works impacting on the Caboolture River were undertaken in the 12 month period applicable to this report. Preparation and Minister's approval of the CREMP to be undertaken at a future date, prior to works impacting the Caboolture River.

	four monitoring points on the northern bank of the Caboolture River, evenly spaced within one kilometre downstream of the marina entrance; 4. Hydrographical surveys of the river bed and banks in the vicinity of the upper one-third of the dredged channel, between three and six months from completion of dredging works. Survey must be undertaken by a qualified hydrographical surveyor and consist of soundings no more than 10 metres apart and within a vertical accuracy of 0.1 metre or better; 5. Shorebird monitoring at a minimum of ten key locations in the lower estuary of the Caboolture River, including the critical high tide shorebird roost area at the mouth of the Caboolture River; and 6. Sampling of benthic invertebrates on shallow banks adjacent to the dredged channel at a minimum of three locations. b. The CREMP must be reviewed annually (within three months of every 12 months anniversary of the commencement of works impacting on the Caboolture River) by the person taking the action, with any revision to be approved by the Minister before implementation of changes. The person taking the action must not commence works impacting on the Caboolture River unless the Minister has approved the CREMP. The approved CREMP must be implemented.		
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APPENDIX B: LBEMP RECORDKEEPING SUMMARY TABLES

LBEMP RECORD KEEPING

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
LBEMP section 8 point 1	Retain appropriate records concerning the preparation and implementation of LBEMP Sub Plans, including; - A register of all LBEMPs including all Sub-Plans, along with hard copies of each LBEMP; and - All records that are required by each element of an implemented LBEMP Sub-Plan, including copies of all issue specific management plans each LBEMP Sub-Plan draws from.	Compliant	Register of all LBEMPs in place. As at 12 May 2025, register includes; LBEMP v3 (21 Dec 2021) Sub-Plan 01 v2 (31 Jan 2014) Sub-Plan 02 v1.2 (22 Aug 2014) Sub-Plan 03 (RW6) (28 July 2015) Sub-Plan 04 (RW5) (15 Sept 2017) Sub-Plan 05 (RW1) (28 Mar 2018) Amended Sub-Plan 06 (MIBA) (20 Sept 2024)) Sub-Plan 07 (Flood) (23 Aug 2021) Sub-Plan 08 (Hardwood Dr) (21 Feb 2025) Record Keeping required by sub-plans in place. Refer to sub-plan record keeping tables below for further information.
LBEMP section 8 point 2	Review this LBEMP: - As part of the preparation of each LBEMP Sub-Plan; - Following significant environmental incidents involving a MNES; - At the completion of any environmental audit carried out by the DCCEEW; and - In the instance where the objectives of any element of this LBEMP are not being met.	Compliant	LBEMP reviewed as part of the preparation of sub-plans 1 to 8. No significant environmental incidents involving a MNES have occurred. DCCEEW (formerly DotE) inspection of the works identified no issues requiring change to existing procedures. Objectives for all LBEMP elements are considered to be achieved for works in the reporting period.

LBEMP SUB-PLAN 1 RECORD KEEPING

Not applicable to this reporting period – refer 2014-2015 Compliance Report

LBEMP SUB-PLAN 2 RECORD KEEPING

Not applicable to this reporting period – refer 2014-2015 and 2015-2016 Compliance Reports

LBEMP SUB-PLAN 3 RECORD KEEPING

Not applicable to this reporting period – refer 2015-2016 and 2016-2017 Compliance Reports

LBEMP SUB-PLAN 4 RECORD KEEPING

Not applicable to this reporting period – refer 2018 to 2024 Compliance Reports

LBEMP SUB-PLAN 5 RECORD KEEPING

Not applicable to this reporting period – refer 2018-2019 Compliance Reports

LBEMP SUB-PLAN 6 RECORD KEEPING

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
Subplan 6 Section 6 Point 1	Copies of all relevant permits or approvals relevant to the works the subject of this LBEMP Sub-Plan 06.	Compliant	All relevant permits and approvals obtained for subplan 6 works undertaken in the reporting period, as set out in the schedule below. Copies can be provided upon request by DCCEEW.
Subplan 6 Section 6 Point 2	The name, qualifications and contact details of the suitably qualified ecologist engaged to assist in the preparation of this LBEMP Sub-Plan 06.	Compliant	Sub-Plan 6 prepared by James Warren and Associates (JWA) (Adam McArthur). Qualification and contact details can be provided upon request by DCCEEW.
Subplan 6 Section 6 Point 3	The dates and findings of the preclearance flora and fauna surveys and the name, qualifications and contact details of the ecologist who completed the surveys.	Compliant	A number of Ecological Assessment Reports have been prepared over sub-plan 6 including: • Terrestrial Ecology Assessment Report – Northeast Business Park (Cardno 2007 - John Delaney); • Ecological Assessment Report: NEBP – Residential West RoL (Cardno 2014 - John Delaney); • Wetland Mapping Report: North East Business Park Residential West Area (JWA 2015 - Adam McArthur);

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
			• Significant Residual Impact Assessment – Marine Plants, North East Business Park Raff Creek Crossing (JWA 2019a -- Adam McArthur); and • Significant Residual Impact Assessment – Marine Plants, North East Business Park MIBA Bulk Earthworks (JWA 2019b -- Adam McArthur). Copy of reports and associated information can be provided upon request by DCCEEW.
Subplan 6 Section 6 Point 4	The name, qualifications and contact details of the licensed Fauna Spotter / Catcher engaged to supervise vegetation clearance works.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 6 Section 6 Point 5	The dates and locations of all vegetation clearance works.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 6 Section 6 Point 6	The post-clearance Fauna Management Report as required by SECTIONS 4.2 and 4.3 of this LBEMP Sub-Plan 06.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 6 Section 6 Point 7	Any records required to be kept in for specific environmental management elements as identified in SECTION 4 of this LBEMP Sub-Plan 06.	Compliant	Records relating to compliance with environmental management elements have been maintained, including under associated approved management plans for; - MIBA Bulk Earthworks – Site Stabilisation / Ecological Restoration Plan (Place Design Group 2020) - Pest and Invasive Species Plan (JWA 2020a) - Erosion and Sediment Control Strategy (Design Flow 2019) - Acid Sulphate Soil Investigation and Management Plan (Tectonic Geotechnical 2019) - Fauna Management Plan - Vegetation Management Plan

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
			Records include (but not limited to); - Testing and validation for ASS - Pre- construction Groundwater Monitoring - Monitoring of ground water and surface water quality - Sediment basin discharge authorisations - Baseline Vegetation and Weed Monitoring - Pest hygiene declarations Copies of records can be provided upon request by DCCEEW.
Subplan 6 Section 6 Point 8	All incident reports and corrective action requests generated during the works program.	Not Applicable	No incident reports or corrective action requests generated during the reporting period.

LBEMP SUB-PLAN 7 RECORD KEEPING

Not applicable to this reporting period – refer 2018-2024 Compliance Reports

LBEMP SUB-PLAN 8 RECORD KEEPING

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
Subplan 8 Section 6 Point 1	Copies of all relevant permits or approvals relevant to the works the subject of this LBEMP Sub-Plan 08.	Compliant	All relevant permits and approvals obtained for subplan 8 works undertaken in the reporting period, as set out in the schedule below. Copies can be provided upon request by DCCEEW.
Subplan 8 Section 6 Point 2	The name, qualifications and contact details of the suitably qualified ecologist engaged to assist in the preparation of this LBEMP Sub-Plan 08.	Compliant	Sub-Plan 8 prepared by James Warren and Associates (JWA) (Adam McArthur). Qualification and contact details can be provided upon request by DCCEEW.

Subplan 8 Section 6 Point 3	The dates and findings of the preclearance flora and fauna surveys and the name, qualifications and contact details of the ecologist who completed the surveys.	Compliant	A number of Ecological Assessment Reports have been prepared over sub-plan 8 including: • Terrestrial Ecology Assessment Report – Northeast Business Park (Cardno 2007 - John Delaney); • Significant Residual Impact Assessment – Marine Plants, North East Business Park Raff Creek Crossing (JWA 2019a -- Adam McArthur); • Significant Residual Impact Assessment – Marine Plants, North East Business Park MIBA Bulk Earthworks (JWA 2019b -- Adam McArthur); and • Revised Vegetation Management Plan (JWA 2024 - Adam McArthur); Copy of reports and associated information can be provided upon request by DCCEEW.
Subplan 8 Section 6 Point 4	The name, qualifications and contact details of the licensed Fauna Spotter / Catcher engaged to supervise vegetation clearance works.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 8 Section 6 Point 5	The dates and locations of all vegetation clearance works.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 8 Section 6 Point 6	The post-clearance Fauna Management Report as required by SECTIONS 4.2 and 4.3 of this LBEMP Sub-Plan 08.	Not Applicable	During the reporting period, no vegetation clearance works were undertaken.
Subplan 8 Section 6 Point 7	Any records required to be kept in for specific environmental management elements as identified in SECTION 4 of this LBEMP Sub-Plan 08.	Compliant	Records relating to compliance with environmental management elements have been maintained, including under associated approved management plans for; - MIBA Bulk Earthworks – Site Stabilisation / Ecological

Reference	Recordkeeping Requirements	Project Compliance	Evidence / Comments
			- Restoration Plan (Place Design Group 2020) - Pest and Invasive Species Plan (JWA 2020a) - Erosion and Sediment Control Strategy (Design Flow 2019) - Acid Sulphate Soil Investigation and Management Plan (Tectonic Geotechnical 2019) - Fauna Management Plan - Vegetation Management Plan Records include (but not limited to); - Testing and validation for ASS - Pre- construction Groundwater Monitoring - Monitoring of ground water and surface water quality - Sediment basin discharge authorisations - Baseline Vegetation and Weed Monitoring - Pest hygiene declarations Copies of records can be provided upon request by DCCEEW.
Subplan 8 Section 6 Point 8	All incident reports and corrective action requests generated during the works program.	Not Applicable	No incident reports or corrective action requests generated during the reporting period.

Northeast Business Park - Register of Permits or Approvals relevant to Land Based Environmental Management Plans

LBEMP Sub-Plan 1

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2014 – 2015 Compliance Report.

LBEMP Sub-Plan 2

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2014 – 2015 and 2015 – 2016 Compliance Reports.

LBEMP Sub-Plan 3

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2015 – 2016 and 2016 – 2017 Compliance Reports.

LBEMP Sub-Plan 4

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2018-2024 Compliance Reports.

LBEMP Sub-Plan 5

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2018-2019 Compliance Reports.

LBEMP Sub-Plan 6

Reference	Approval Date	Description
DA/7352/2002/VCHG/3	22 January 2020	Request to Change (Other) for a Material Change of Use, and for variations to the applicable Planning Scheme under s.3.1.6 of the Integrated Planning Act 1997 (QLD) in relation to development for Mixed Industry, Business Area Precincts, Open Space and Related Purposes. (Original approval dated 28 June 2012).
DA/39447/2019/V4D	27 February 2020	Operational Works for MIBA Bulk Earthworks
DA/31654/2016/V4D/29	11 December 2020	Operational Works for North Harbour Boulevard, Roadworks, Stormwater and Earthworks
DA/2023/4731	29 January 2024	Operational Works - Development Permit for Roadworks, Drainage works, Earthworks, Stormwater and Vegetation Clearing (North Harbour Boulevard – Entry Works)
DA/2023/3176	23 January 2024	Reconfiguring a Lot - Development Permit for Subdivision (2 into 25 MIBA Lots plus balance lot - staged)
DA/2024/0933	16 April 2024	Operational Works - Development Permit for Earthworks (North Harbour MIBA – Lot 200)
DA/2023/5175	30 January 2024	Operational Works - Development Permit for Roadworks, Stormwater, Earthworks & Vegetation Clearing (North Harbour MIBA, Stage 3A & 3B)
DA/2023/1759	30 November 2023	Request to Change (Minor) - Operational Works - Development Permit for Traffic Signals
DA/2023/4900	30 January 2024	Operational Works - Development Permit for Roadworks (North Harbour Boulevard signalised intersection)
DA/2023/4299	26 March 2024	Reconfiguring a Lot - Development Permit for Subdivision (1 lot into 189 lots plus balance lot and park in 5 stages) (North Harbour, Stages 1 – 5)
DA/2024/1859	22 May 2024	Operational Works for MB+ Operational Works - Development Permit for Earthworks, Roadworks and Stormwater (North Harbour, RNA Stage 1)
DA/2024/3425	3 September 2024	Operational Works for MB+ Operational Works - Development Permit for Earthworks, Roadworks and Stormwater (North Harbour, RNA Stage 2)
DA/2024/3425	3 September 2024	Operational Works for MB+ Operational Works - Development Permit for Earthworks, Roadworks and Stormwater (North Harbour, RNA Stage 3)
DA/2024/2312	16 September 2024	Reconfiguring a Lot - Development Permit for Subdivision (1 into 6 Lots plus balance lots and common property) North Harbour MIBA, Stage 4 & 5
DA/2024/4192	25 September 2025	Operational Works for MB+ Operational Works - Development Permit for Earthworks, Roadworks and Stormwater (North Harbour, RNA Stage 4)
DA/2024/2264	7 November 2024	Reconfiguring a Lot - Development Permit for Subdivision (1 lot into 174 lots, plus 2 park lots, and 1

		balance lot in 5 Stages) (North Harbour, Stages 7-11)
DA/2024/5290	12 December 2024	Development Permit - Operational Works for Earthworks (Retaining Wall)
DA/2024/5375	24 February 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (MIBA, Stage 4)
DA/2025/0645	3 March 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (RNA, Stage 5)
DA/2025/1206	3 April 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (RNA, Stage 7)
DA/2024/0251	23 April 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (MIBA, Stage 5)
DA/2025/1404	9 May 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (RNA, Stage 8)
DA/2025/1711	9 May 2025	Development Permit for Operational Works Development Permit for Roadworks & Stormwater (RNA, Stage 9)

- Note: Register Current as at 12 May 2025
- Other approvals including operational works for future stages may have been recently approved but are not relevant to the reporting period.

LBEMP Sub-Plan 7

Not applicable for 2024-2025 reporting period (All works previously completed). Refer 2018-2024 Compliance Reports.

LBEMP Sub-Plan 8

Reference	Approval Date	Description
DA/7352/2002/VCHG/3	22 January 2020	Request to Change (Other) for a Material Change of Use, and for variations to the applicable Planning Scheme under s.3.1.6 of the Integrated Planning Act 1997 (QLD) in relation to development for Mixed Industry, Business Area Precincts, Open Space and Related Purposes. (Original approval dated 28 June 2012).
DA/39447/2019/V4D	27 February 2020	Operational Works for MIBA Bulk Earthworks

- Note: Register Current as at 12 May 2025
- Other approvals including operational works for future stages may have been recently approved but are not relevant to the reporting period.

APPENDIX C: SUPPORTING DOCUMENTATION

Michael McErlean

From: Michael McErlean
Sent: Monday, 12 August 2024 4:07 PM
To: EPBC Monitoring
Cc: Bryan Finney
Subject: EBPC 2024 Compliance Report 2006-2912

EPBC Compliance Monitoring Team,

Please be advised the latest annual compliance report for the Northeast Business Park project has been completed and a public access link has been placed on our website.

A direct link to the report is included below.

[2024-Northeast-Business-Park-COMPLIANCE-REPORT-2006-2912_v1.0-COMPLETE.pdf](#)
([northharbour.com.au](#))

Regards,
Michael McErlean
Planning & Approvals Manager



Postal Address PO Box 771, Burpengary Plaza, Burpengary Qld 4505

Physical Address 44 Brook Crescent, Burpengary East Qld 4505

m. 0417 884 155 ph. 07 5433 1111 [northharbour.com.au](#)

An aerial photograph of the North Harbour Business Park, showing industrial lots, parking areas, and surrounding greenery. The banner is split into two main sections. The left section shows the aerial view. The right section has a white background with blue and teal text. The text reads "NORTH HARBOUR BUSINESS PARK" in large, bold letters. Below this, there are three bullet points: "INDUSTRIAL LOTS FROM 1,800 – 18,000", "FULLY SERVICED LOTS", and "ALL ENQUIRIES WELCOME". At the bottom of the banner, there is a dark blue bar with white text listing three contact names and their phone numbers: "Dillon Murphy - 0418 959 776", "Hugh Adnam - 0439 977 335", and "David McPhillips - 0421 111 111".

**NORTH HARBOUR
BUSINESS PARK**

- INDUSTRIAL LOTS FROM 1,800 – 18,000
- FULLY SERVICED LOTS
- ALL ENQUIRIES WELCOME

Dillon Murphy - 0418 959 776 Hugh Adnam - 0439 977 335 David McPhillips - 0421 111 111

CONFIDENTIALITY: This email is from North Harbour Holdings Pty Ltd. The contents are confidential. The contents are intended only for the named recipient of this email. If you are not the intended recipient you are notified that any use, reproduction, disclosure or distribution of the information contained in the email is prohibited. If you have received this email in error, please reply to us immediately and delete the document.

VIRUSES: Our system is equipped with the most up-to-date virus scanners. However, no warranty is made that this material is free from computer defect or other defects. Any loss/damage incurred by using this material is not our responsibility. North Harbour Holdings' entire liability will be limited to re-supplying the material.





LEGEND

- NEBP Site Boundary
- LBEMP Sub-plan 07 Extent - Flood Mitigation Works
- LBEMP Sub-plan 06 Extent
 - MIBA (remaining areas) - Bulk Earthworks
 - Raff Creek Crossing & Connection
- LBEMP Sub-plan 05 Extent - Sewer Pump Station SPS-BGY017 (PS3) Reticulation Network
- LBEMP Sub-plan 04 Extent
 - Residential West Area - Balance (Phases 3-7)
 - Borrow Areas
 - Heritage Works
- LBEMP Sub-plan 03 Extent
 - Residential West Area - Phase 2
 - Compensatory Cut / Restoration Area
 - Constructed Wetland
- LBEMP Sub-plan 02 Extent - Residential West Area Phase 1
- LBEMP Sub-plan 01 Extent - MIBA (part of) Vegetation Clearing Works

Scale 1:20 000 - Lengths in metres

200 0 200 400 600 800 1000

SOURCE: Google Earth Oct 2017 Aerial

SCALE: 1 : 20 000 @ A3

JWA Pty Ltd
Ecological Consultants

CLIENT
North Harbour Holdings Pty Ltd

PROJECT
LBEMP Sub-Plan 07
North Harbour Flood Mitigation Works
Nolan Drive, Morayfield QLD
Moreton Bay Regional Council LGA

FIGURE 3

PREPARED: BW
DATE: 05 August 2021
FILE: Q15003_UnnamedCk_20210805.dwg

TITLE

EXTENT OF
CURRENT & PREVIOUS
LBEMP AREAS



EPBC ref: 2006/2912

Mr Michael McErlean
Planning & Approvals Manager
North Harbour Holdings Pty Ltd
44 Brook Crescent, Burpengary East Qld 4505

Approval of Action Management Plan for North East Business Park Project, Caboolture River, Queensland

Dear Mr McErlean

Thank you for your email dated 29 July 2024 to the Department of Climate Change, Energy, the Environment and Water (the department), seeking approval of a revised Action Management Plan for North East Business Park, in accordance with Condition 10 of approval 2020/8646 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Officers of the department have advised me on the revised Action Management Plan and the requirements of the conditions of the approval for this project. On this basis, and as a delegate of the Minister for the Environment and Water (the Minister), I have decided to approve the *Revised Land Based Environmental Management Plan - Sub-Plan 06 - North East Business Park - Mixed Industry and Business Area Bulk Earthworks*, Version RW11, dated 27 June 2024. This plan must now be implemented.

As you are aware, the department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the department on request.

Should you require any further information please contact Tony Dowd by email to PostApproval@dcceew.gov.au.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'B. Linton-Smith'.

Brendan Linton-Smith
Director Post Approvals – QLD, NT and SA
Environment Assessments (Vic, Tas) and Post Approvals Branch
Nature Positive Regulation Division
20 September 2024



EPBC ref: 2006/2912

Mr Michael McErlean
Planning & Approvals Manager
North Harbour Holdings Pty Ltd
44 Brook Crescent, Burpengary East Qld 4505

Approval of Action Management Plan for North East Business Park Project, Caboolture River, Queensland

Dear Mr McErlean,

Thank you for your email dated 29 July 2024 to the Department of Climate Change, Energy, the Environment and Water (the department), seeking approval of an Action Management Plan for North East Business Park, in accordance with Condition 9 of approval 2006/2912 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Officers of the department have advised me on the Action Management Plan and the requirements of the conditions of the approval for this project. On this basis, and as a delegate of the Minister for the Environment and Water (the Minister), I have decided to approve the *Land Based Environmental Management Plan - Sub-Plan 08 - North East Business Park - Mixed Industry and Business Area Bulk Earthworks*, Version RW2, dated 13 February 2025. This plan must now be implemented.

As you are aware, the department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the department on request.

Should you require any further information please contact Tony Dowd by email to PostApproval@dcceew.gov.au.

Yours sincerely

A handwritten signature in grey ink, appearing to read 'B. Linton-Smith'.

Brendan Linton-Smith
Director Post Approvals (QLD, NT and SA)
Environment Assessments (Vic and Tas) and Post Approvals Branch
Nature Positive Regulation Division
21 February 2024



2024 - 2025 SUMMARY OF REVEGETATION WORKS

North East Business Park

**A Report Prepared for
North Harbour Holdings Pty Ltd**

AUGUST 2025

DOCUMENT CONTROL

Document

Title	Summary of Revegetation Works
Job Number	Q15003
File Reference	\\JWAServer\Data\2015 CLIENTS\Q15003_Northeast Business Park, Morayfield\Reports\EPBC Rehab Summary (2025)
Version and Date	RW2 11/08/25
Client	North Harbour Holdings Pty Ltd

Revision History (office use only)

Issue	Version	Draft/ Final	Date	Distributed To	No. Copies	Media	Delivery Method
1	RW1	DRAFT	07/08/25	Client	1	.pdf	Email
2	RW2	FINAL	11/08/25	Client	1	.pdf	Email

Client Issue

Version	Date Sent	Author		Approved by	
		Name	Initials	Name	Initials
RW1	07/08/25	Nicole Davies	ND	Adam McArthur	AM
RW2	11/08/25	Nicole Davies	ND	Adam McArthur	AM

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1 Introduction

This summary report discusses the actions taken by North Harbour Holdings Pty Ltd (formerly Northeast Business Park Pty Ltd) towards revegetation of parts of the company's development site "North Harbour" at Morayfield, Queensland. The project site, which was extensively cleared for pine plantation forestry by previous owners, includes frontage to the southern bank of the Caboolture River. North Harbour Holdings Pty Ltd is actively seeking to revegetate a 100 m wide native vegetation "riparian buffer" to the Caboolture River on the majority of the frontage. North Harbour Holdings would like to thank the following groups and individuals for their assistance in the planning, preparation and establishment of the revegetation works thus far:

- Jim Pulsford, Sue Davies, Alex Smith, and other volunteers from the Friends of CREEC (Caboolture Region Environmental Education Centre);
- Warwick Halse Jr and the staff and volunteers from the CREEC Nursery;
- Wes Mortensen and Seelan Kulasegaram from Moreton Bay Regional Council;
- Staff from Greening Australia;
- Charlie and Jenny Cope;
- Trainees and staff involved in the 2016 and 2017 Skilling Queenslanders for Work program, provided by the Deception Bay Community Youth Programs (DBCYP) organisation; and
- Clint Howchin.

2 Overview of Revegetation Works to Mid 2025

Monitoring of previously planted sections A, B, C, F and G (**SECTIONS 4 - 7**) has been continued, with maintenance in these areas including weed control, fencing repairs and track maintenance. Weed diversity and density throughout the revegetation areas was found to have increased since the previous monitoring visit. Ongoing weed maintenance is required and should be completed as soon as practicable.

Monitoring of natural regeneration trials in section H has continued, with maintenance in this area limited to fencing repairs as required.

Monitoring of natural regeneration elsewhere (i.e. photo monitoring at points 7, 8, 11 and 12) has been discontinued until active planting is undertaken in these areas to establish revegetation.

3 Revegetation Areas Involving Active Planting

Since December 2011, revegetation has been progressively established in a number of locations on the property (upstream end of the project site frontage to the Caboolture River).

Previously, revegetation has been established utilising different methodologies as trials to determine the most effective methodologies for assisted revegetation of the riparian corridor.

Preliminary planning is consistent for all assisted regeneration established thus far because the underlying pre-clearing regional ecosystem is consistent across all areas. Preliminary planning involved:

- Vegetation survey conducted by Sue Davies (Friends of CREEC).
- Revegetation Management Plan prepared by Greening Australia, including documentation of the species planting palette.
- Seed collection and propagation from local sources (including the project site) conducted by the CREEC Nursery.

Based on the observations of seedling survival and growth in previous trial plantings, continuation of planting in section G has been undertaken using the following methods:

- No broadscale soil conditioning / disturbance (as trialled in section A). Limited soil disturbance undertaken to avoid stimulating growth of competing weeds and pasture grasses.
- Ongoing maintenance (through slashing of pasture grasses and weeds, and watering beyond initial establishment) has not been included. Ongoing maintenance undertaken in Section A did not appear to significantly aid the survival and growth of seedlings compared with sections B and C where ongoing maintenance was limited to fencing repairs to exclude grazing by stock.
- Slashing of existing grasses/weeds undertaken just prior to planting (as trialled in sections B and C) has been adopted, providing opportunity for seedlings to establish before being subjected to competition for sunlight.
- Planting palette has been modified to increase the number of seedlings planted from pioneer/hardy species and reduce the number of seedlings planted from secondary species that require protection from the elements via an established upper canopy. Growth rates of secondary species seedlings have been low in area A and B plantings. It is anticipated that secondary species will establish via natural recruitment as fauna species recolonise the revegetated areas. In the event this does not occur, additional planting to introduce these species will be considered once suitable canopy protection has been established.

4 Revegetation Area A

This was the first trial revegetation area planted in December 2011. Canopy height is estimated to have reached approximately 50% of mature height, vegetation is now well established, and bird life and other fauna is returning to this area. It is anticipated this area will return to remnant condition without further planting of native species.

Weed diversity and density throughout Area A was found to have increased since the previous monitoring visit however and recent monitoring has identified ongoing weed maintenance is required. **PLATES 1 - 9** show aerial photos of the revegetation progress of Areas A, C and F in November 2024 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area A in June 2025 is shown in **PLATES 10 & 11** compared to previous years (July 2018 to July 2024) shown in **PLATES 12 - 23**.

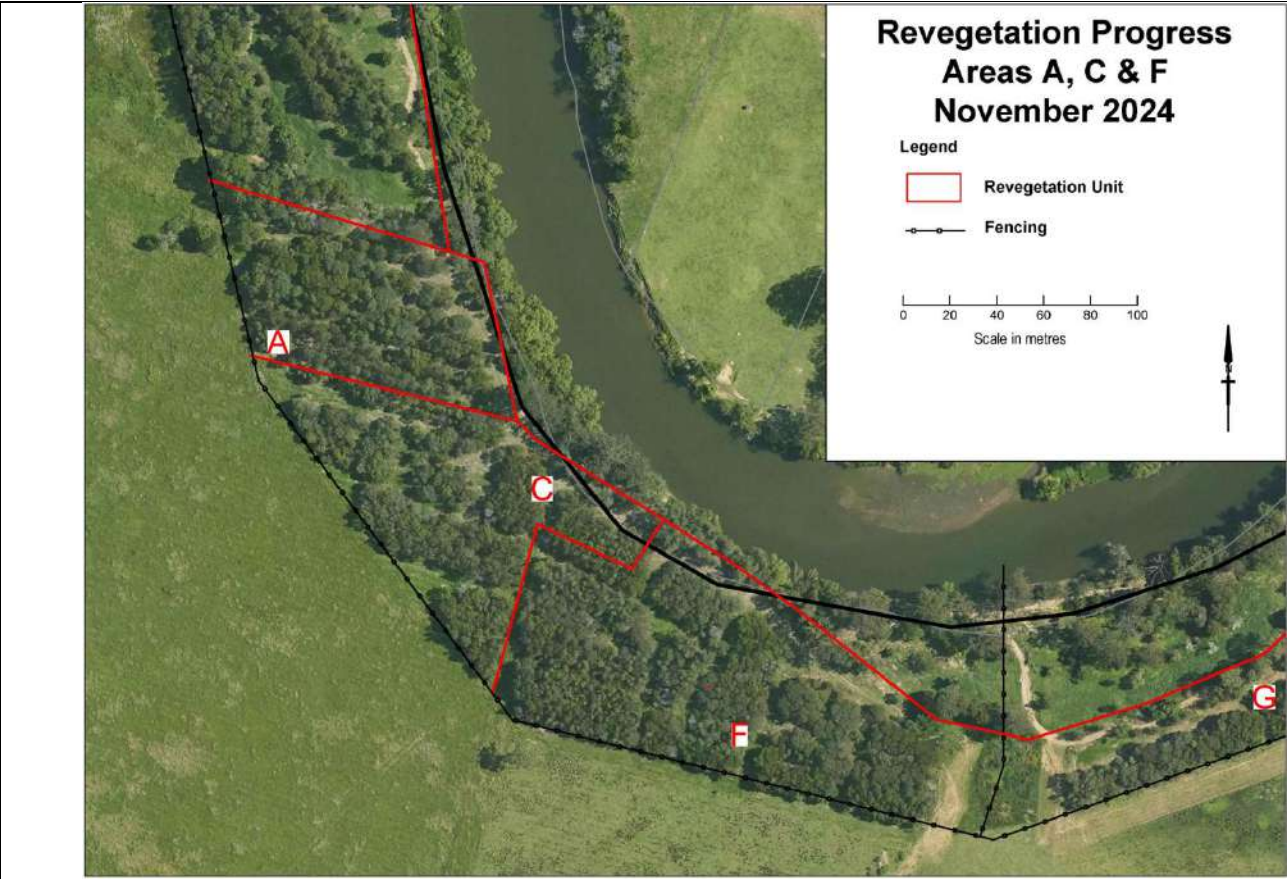


PLATE 1: Aerial of Revegetation progress of Areas A, C and F - November 2024

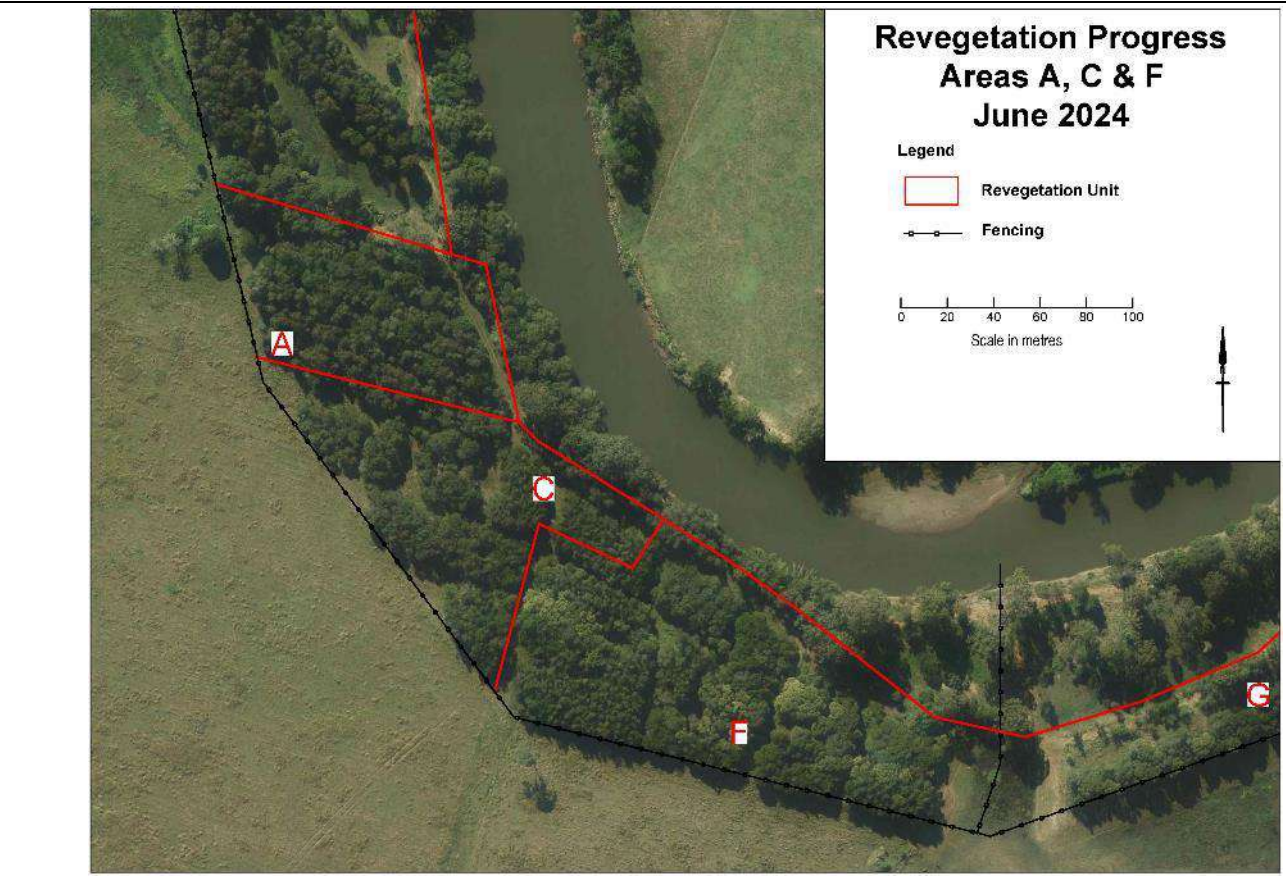


PLATE 2: Aerial of Revegetation progress of Areas A, C and F - June 2024

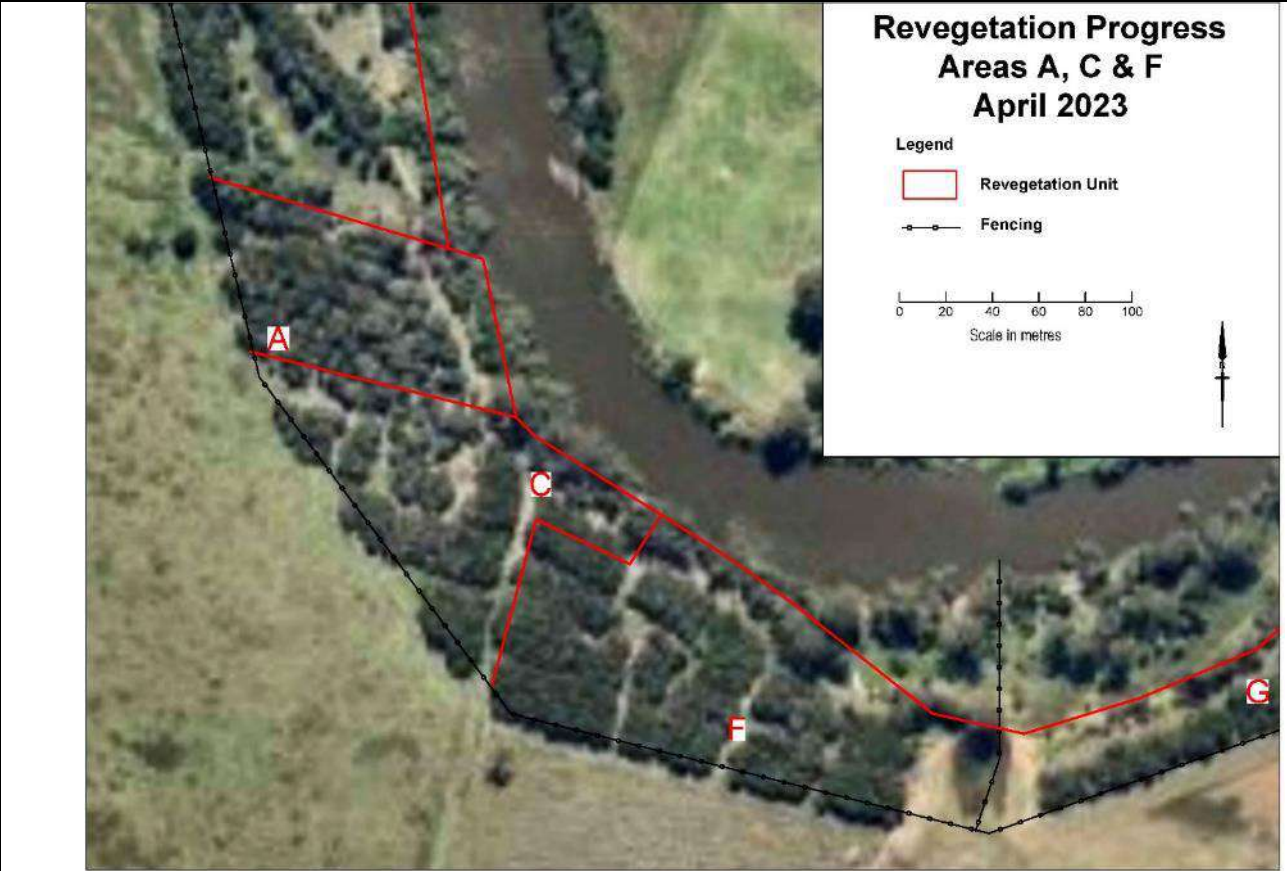


PLATE 3: Aerial of Revegetation progress of Areas A, C and F - April 2023

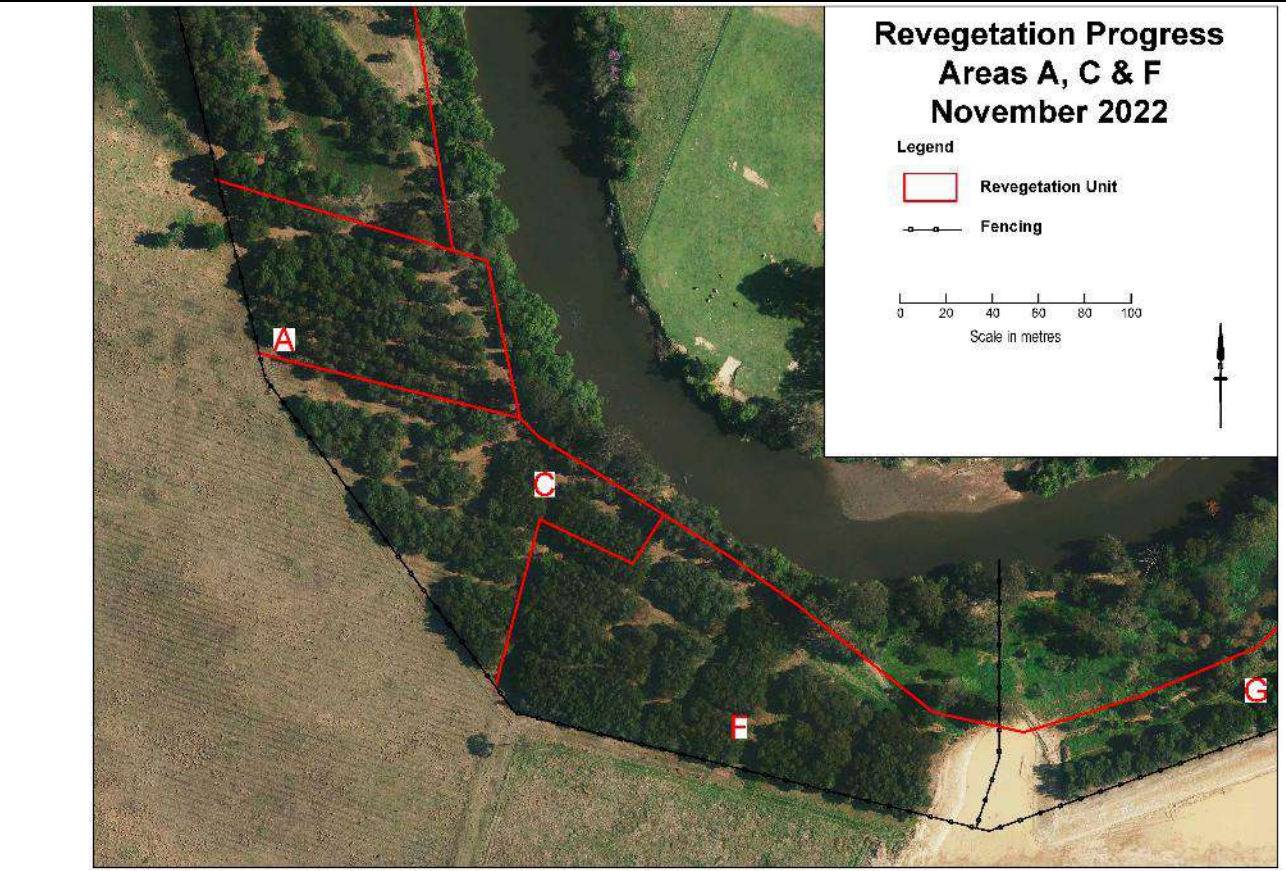


PLATE 4: Aerial of Revegetation progress of Areas A, C and F - November 2022

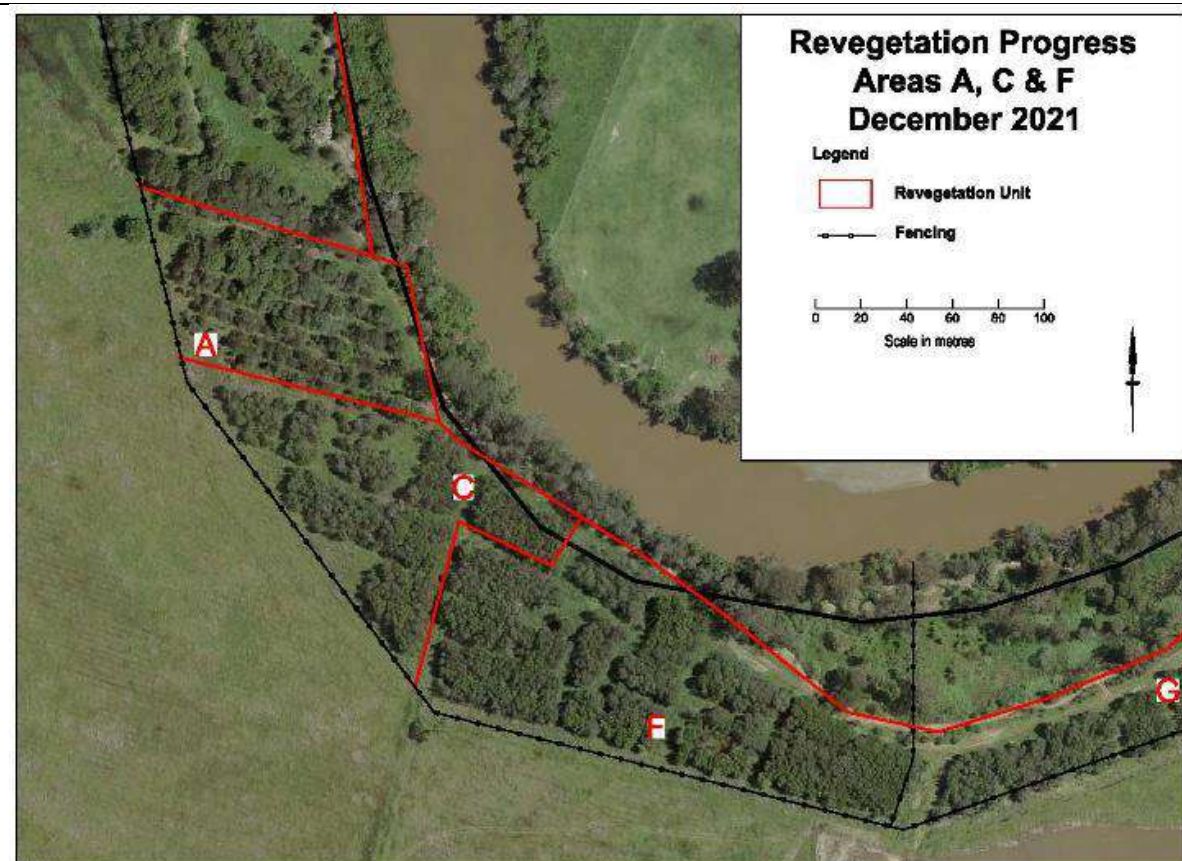


PLATE 5: Aerial of Revegetation progress of Areas A, C and F - December 2021

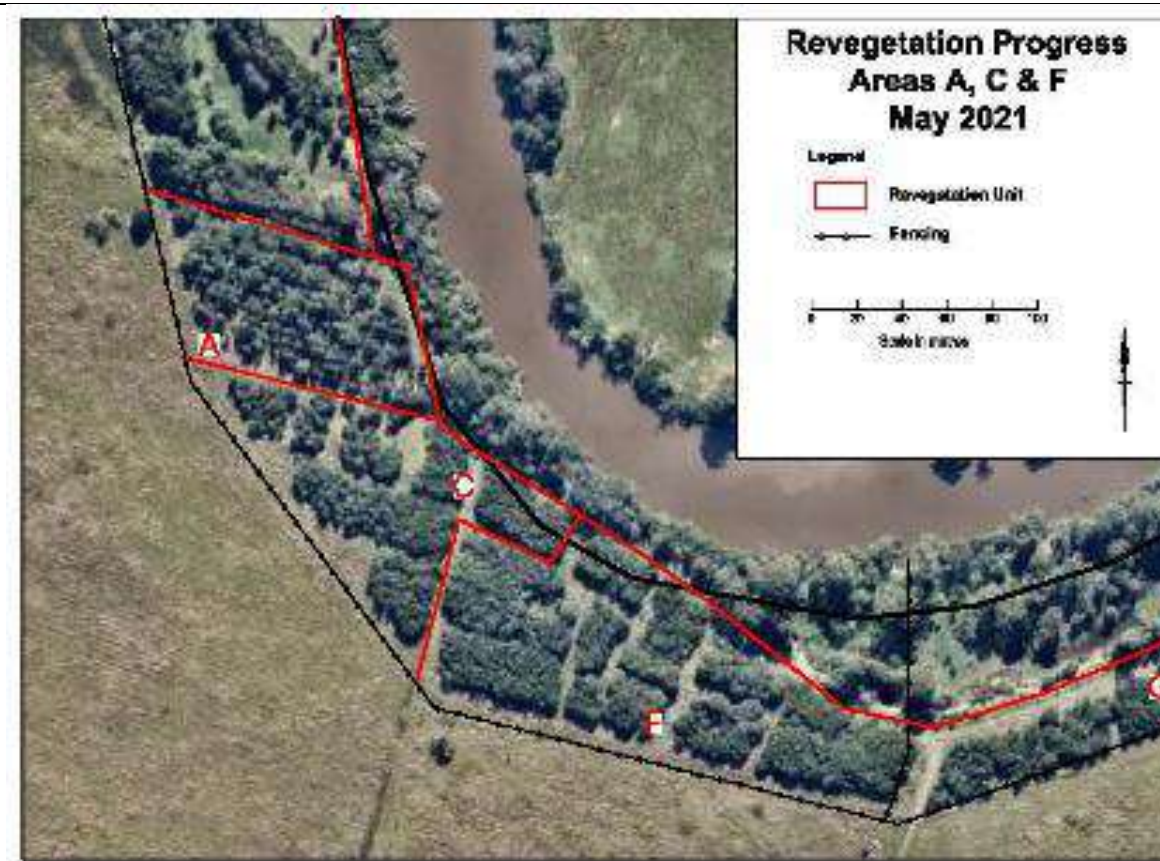


PLATE 6: Aerial of Revegetation progress of Areas A, C and F - May 2021

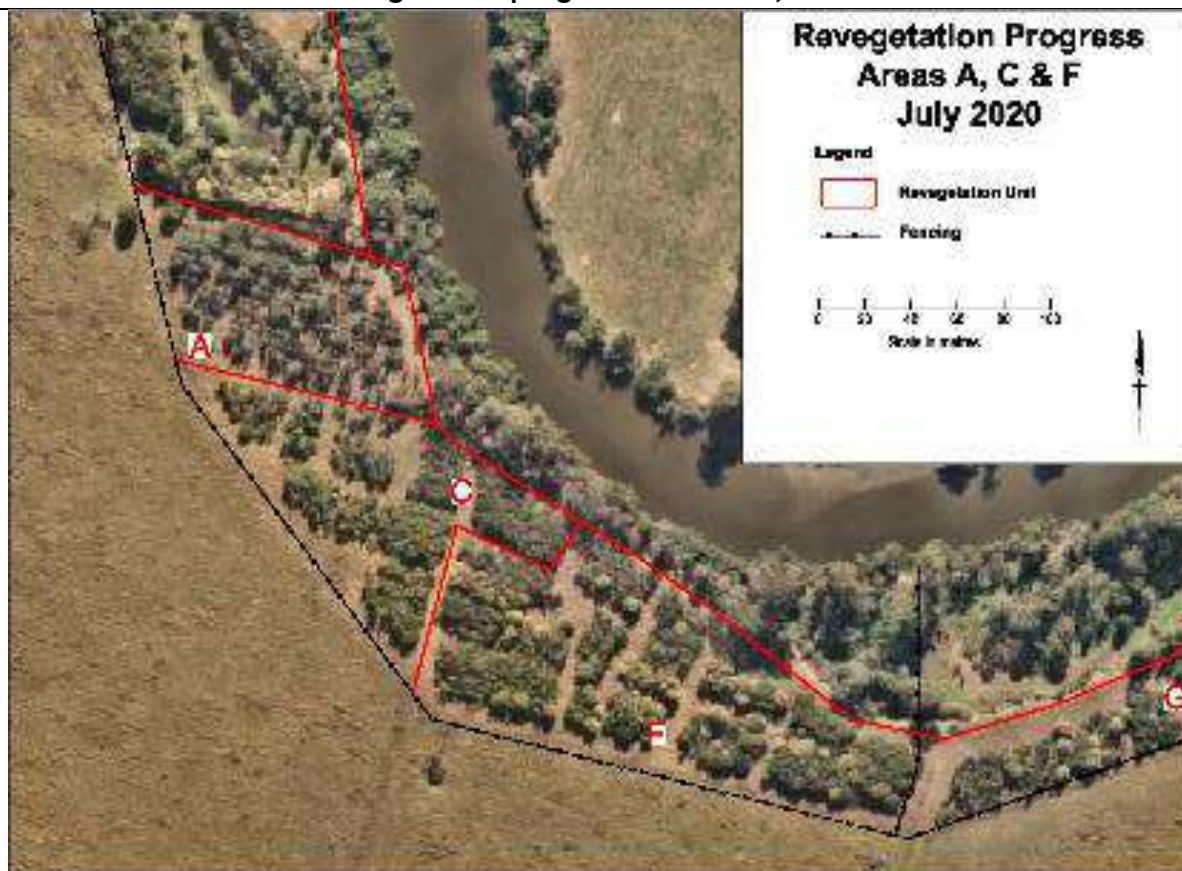


PLATE 7: Aerial of Revegetation progress of Areas A, C and F - July 2020

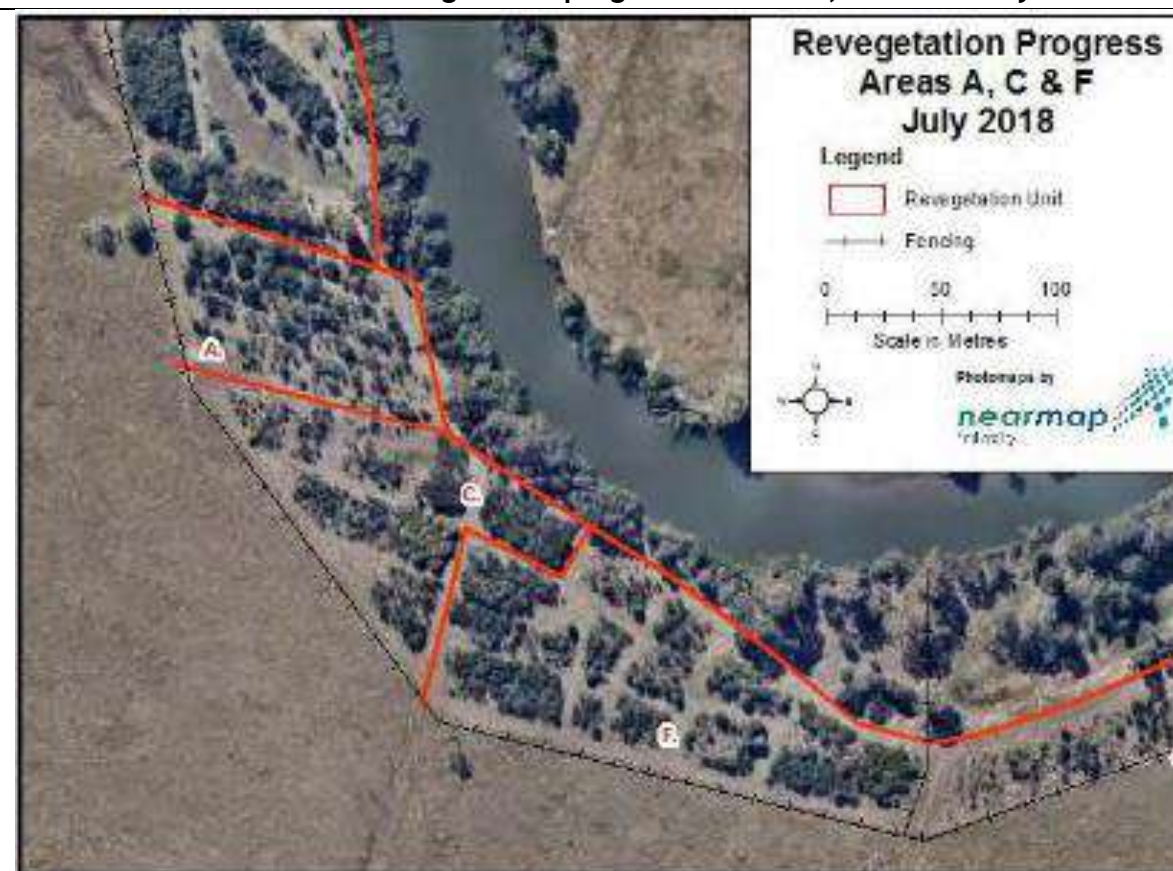


PLATE 8: Aerial of Revegetation progress of Areas A, C and F - July 2018

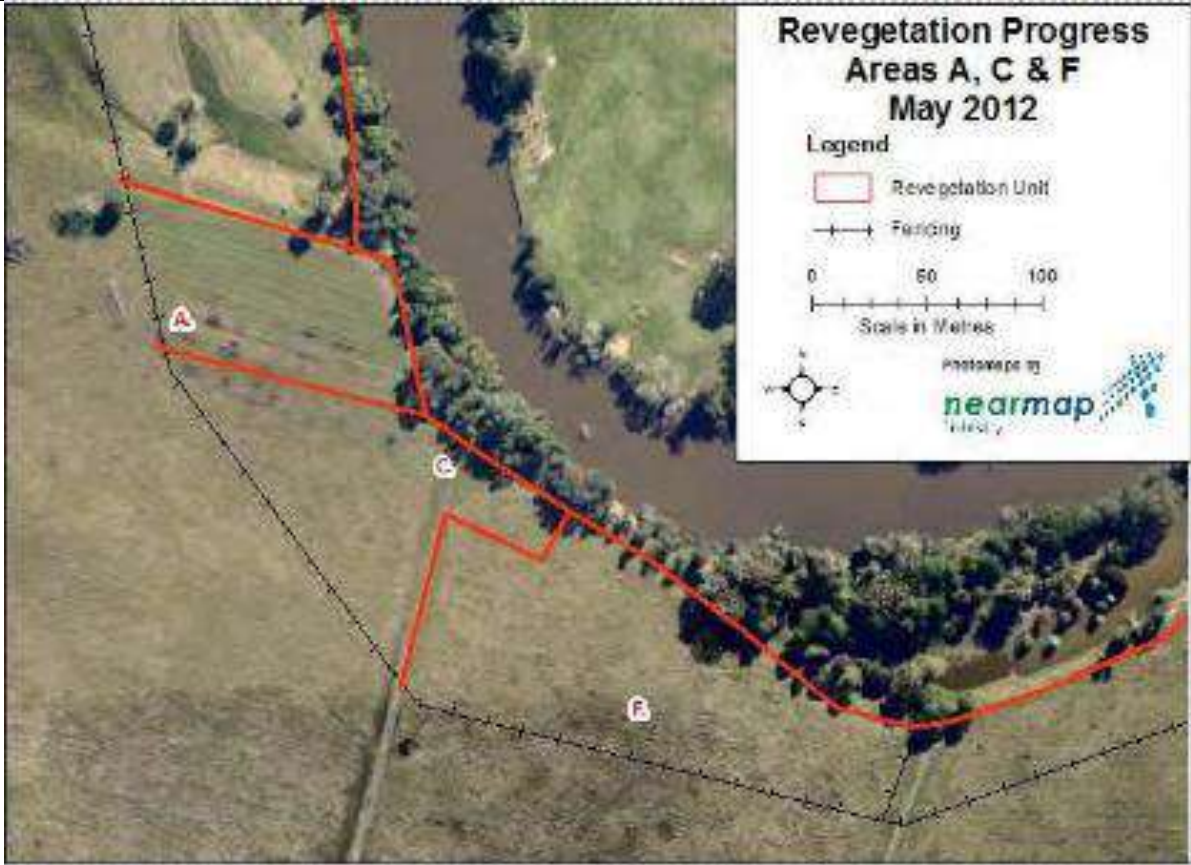


PLATE 9: Aerial of Revegetation progress of Areas A, C and F - May 2012



PLATE 10: Revegetation Area A July 2025



PLATE 11: Revegetation Area A July 2025



PLATE 12: Revegetation Area A July 2024



PLATE 13: Revegetation Area A July 2024



PLATE 14: Revegetation Area A June 2023



PLATE 15: Revegetation Area A June 2023



PLATE 16: Revegetation Area A June 2022



PLATE 17: Revegetation Area A June 2022



PLATE 18: Revegetation Area A June 2021



PLATE 19: Revegetation Area A June 2021



PLATE 20: Revegetation Area A July 2020



PLATE 21: Revegetation Area A July 2020



PLATE 22: Revegetation Area A July 2018



PLATE 23: Revegetation Area A July 2018

5 Revegetation Area C

Revegetation Area C was planted in March - May 2014. Vegetation in area C has again grown significantly in size as demonstrated by the photos below. Vegetation is now well established and expected to return to remnant status with limited additional intervention. Weed diversity and density throughout Area C was found to have increased since the previous monitoring visit. Follow-up weed maintenance is required in some parts of Area C. **PLATES 1 - 9** show aerial photos of the revegetation progress of Areas A, C and F in November 2024 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area C in June 2025 is shown in **PLATE 24** compared to previous years (June 2017 to July 2024) shown in **PLATES 25-31**.



PLATE 24: Revegetation Area C July 2025



PLATE 25: Revegetation Area C July 2024



PLATE 26: Revegetation Area C June 2023



PLATE 27: Revegetation Area C June 2022



PLATE 28: Revegetation Area C June 2021



PLATE 29: Revegetation Area C July 2020



PLATE 30: Revegetation Area C July 2018



PLATE 31: Revegetation Area C June 2017

6 Revegetation Area F

Seedlings were planted progressively in area F from late 2015 to May 2016. Seedlings have established well and have significantly increased in size in this reporting period. Weed diversity and density throughout Area F was found to have increased since the previous monitoring visit, however. Recent monitoring has identified ongoing weed maintenance is required. **PLATES 1 - 9** show aerial photos of the revegetation progress of Areas A, C and F in June 2025 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area F in June 2025 is shown in **PLATE 32** compared to previous years (June 2017 to June 2024) shown in **PLATES 33-39**.



PLATE 32: Revegetation Area F June 2025



PLATE 33: Revegetation Area F July 2024



PLATE 34: Revegetation Area F June 2023



PLATE 35: Revegetation Area F June 2022



PLATE 36: Revegetation Area F June 2021



PLATE 37: Revegetation Area F July 2020



PLATE 38: Revegetation Area F July 2018



PLATE 39: Revegetation Area F June 2017

7 Revegetation Area B

Revegetation area B was planted over a 10-month period from February to November 2013. Much of area B has established well and the canopy height is now around 50% of the expected mature height. However, the wetter areas which did not establish well following prolonged inundation shortly after planting are not at the same stage of regeneration. More in-depth monitoring will be undertaken in future to determine if additional action is required to assist regeneration in these wetter areas. Weed diversity and density throughout Area B was found to have increased since the previous monitoring visit. Recent monitoring has identified ongoing weed maintenance is required. **PLATES 40-48** show aerial photos of the revegetation progress of Area B in November 2024 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area B in June 2025 is shown in **PLATES 49 & 50** compared to previous years (July 2018 to July 2024) shown in **PLATES 51-62**.

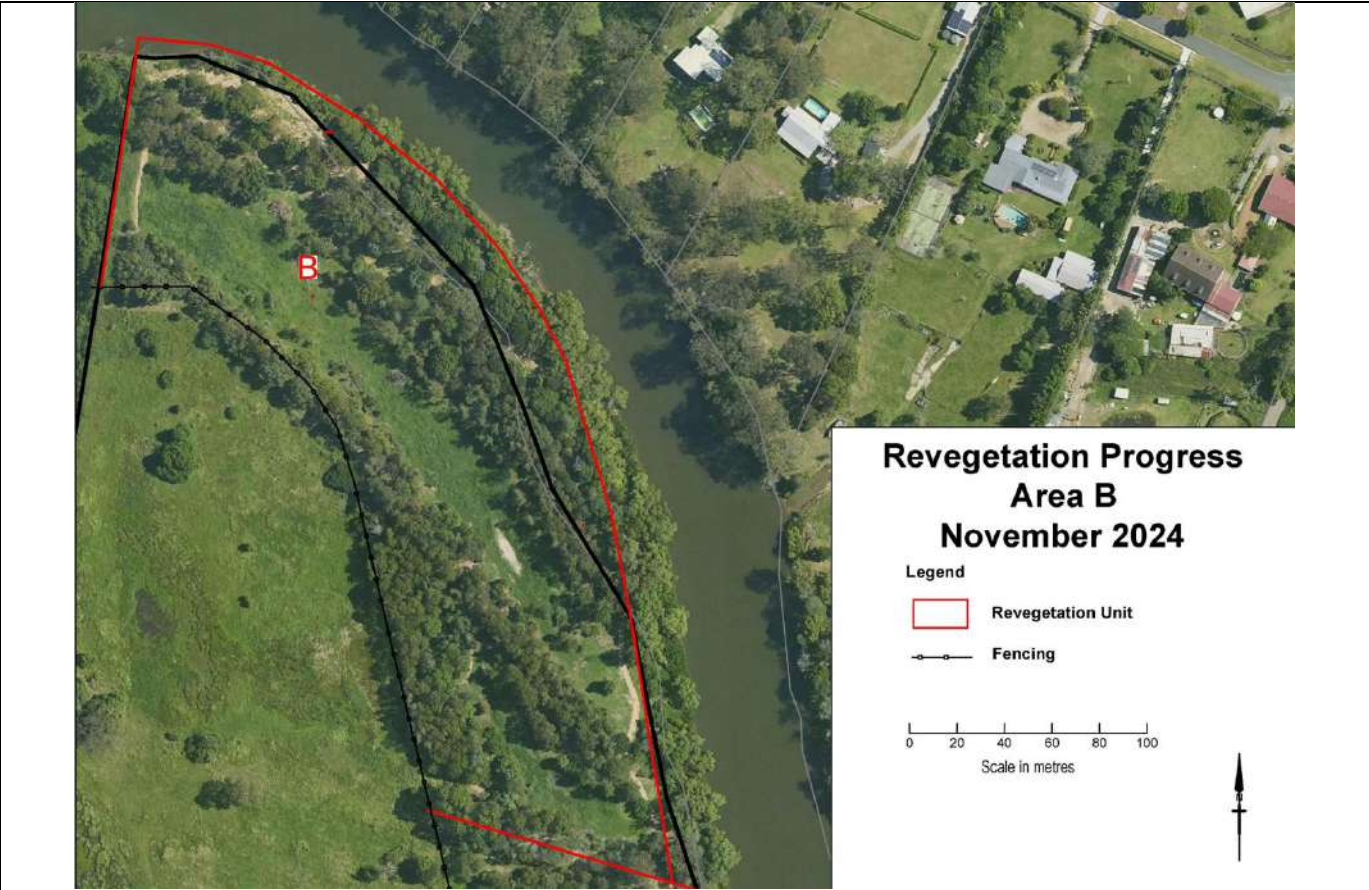


PLATE 40: Aerial of Revegetation progress of Area B - November 2024

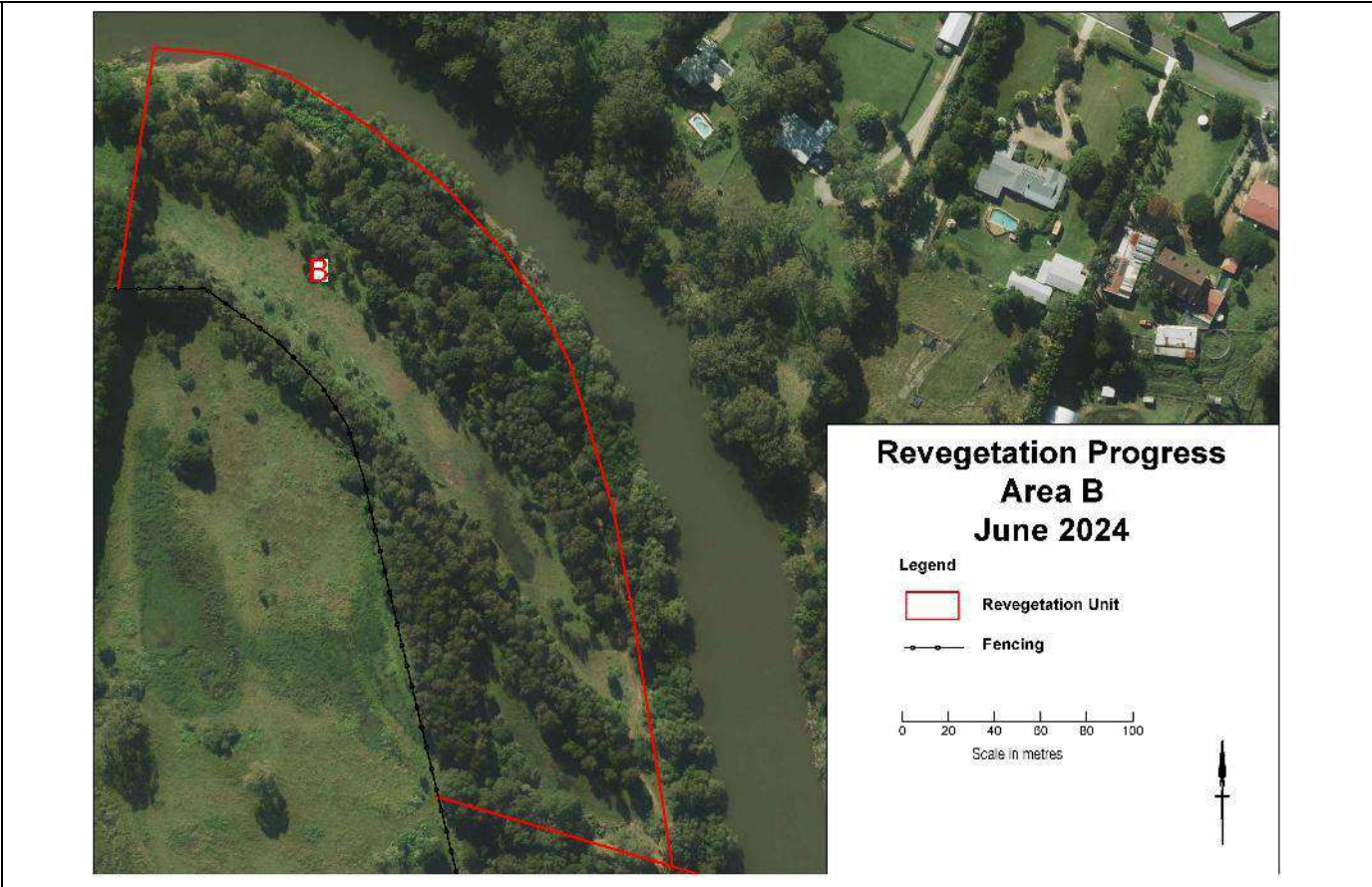


PLATE 41: Aerial of Revegetation progress of Area B - June 2024



PLATE 42: Aerial of Revegetation progress of Area B - April 2023

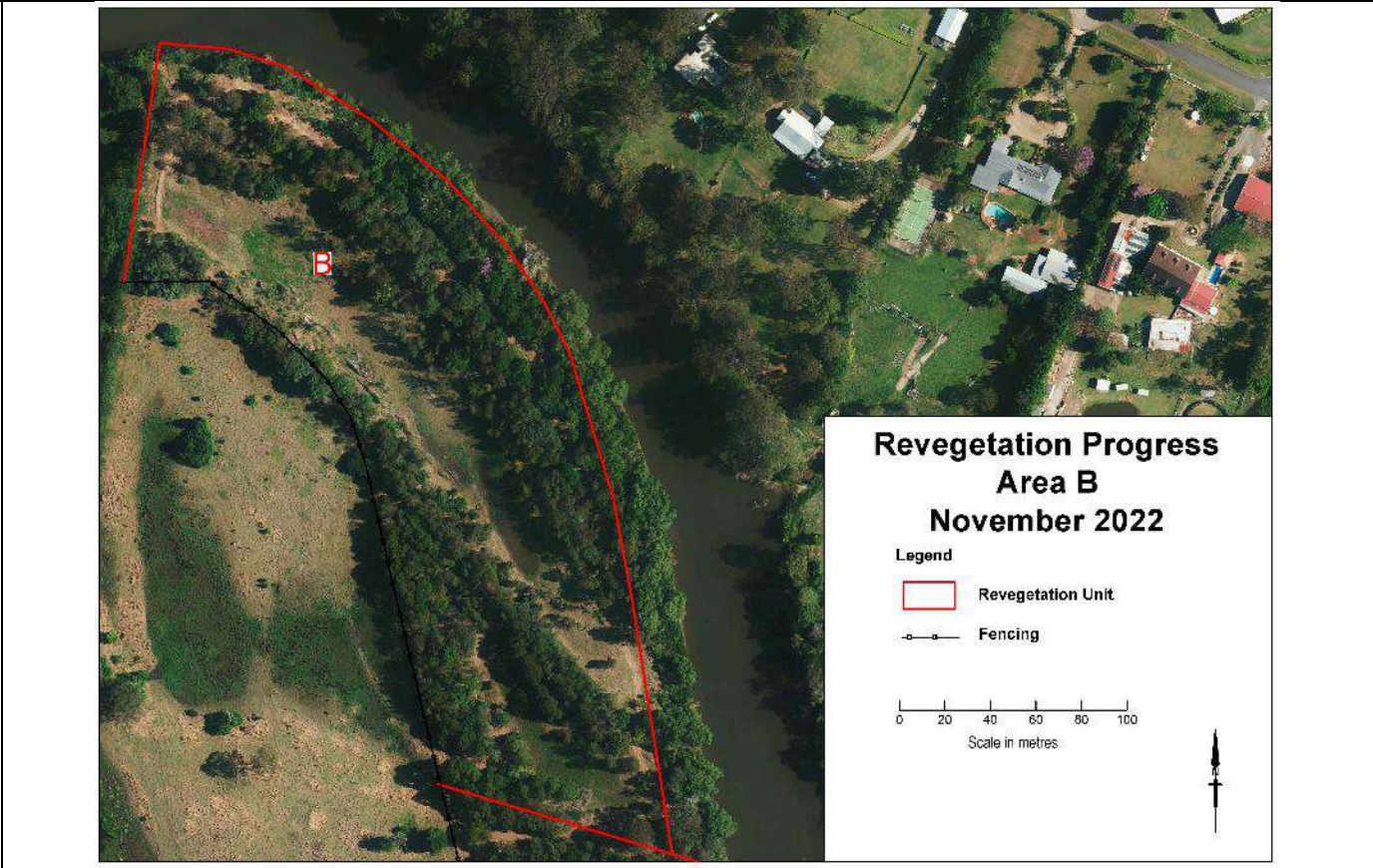


PLATE 43: Aerial of Revegetation progress of Area B - November 2022

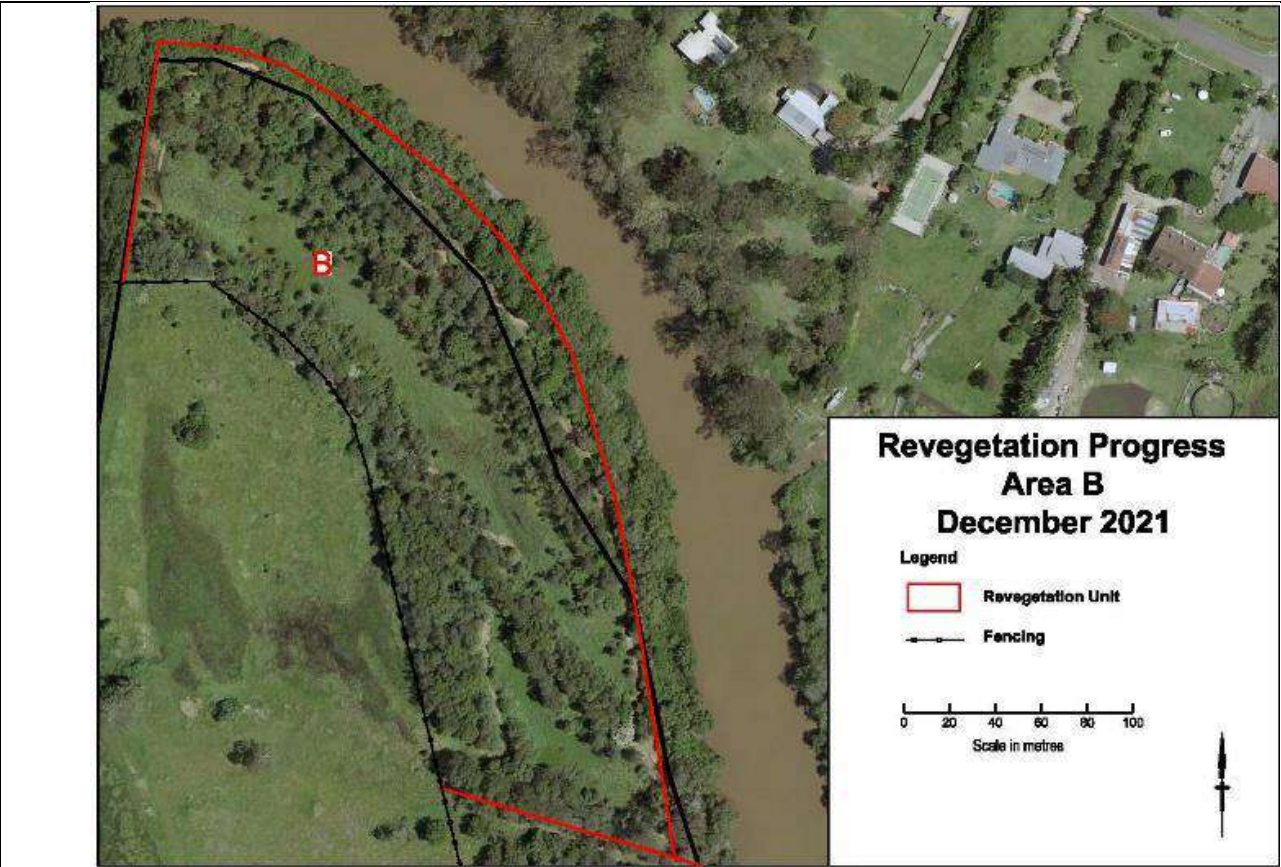


PLATE 44: Aerial of Revegetation progress of Area B - December 2021



PLATE 45: Aerial of Revegetation progress of Area B - May 2021

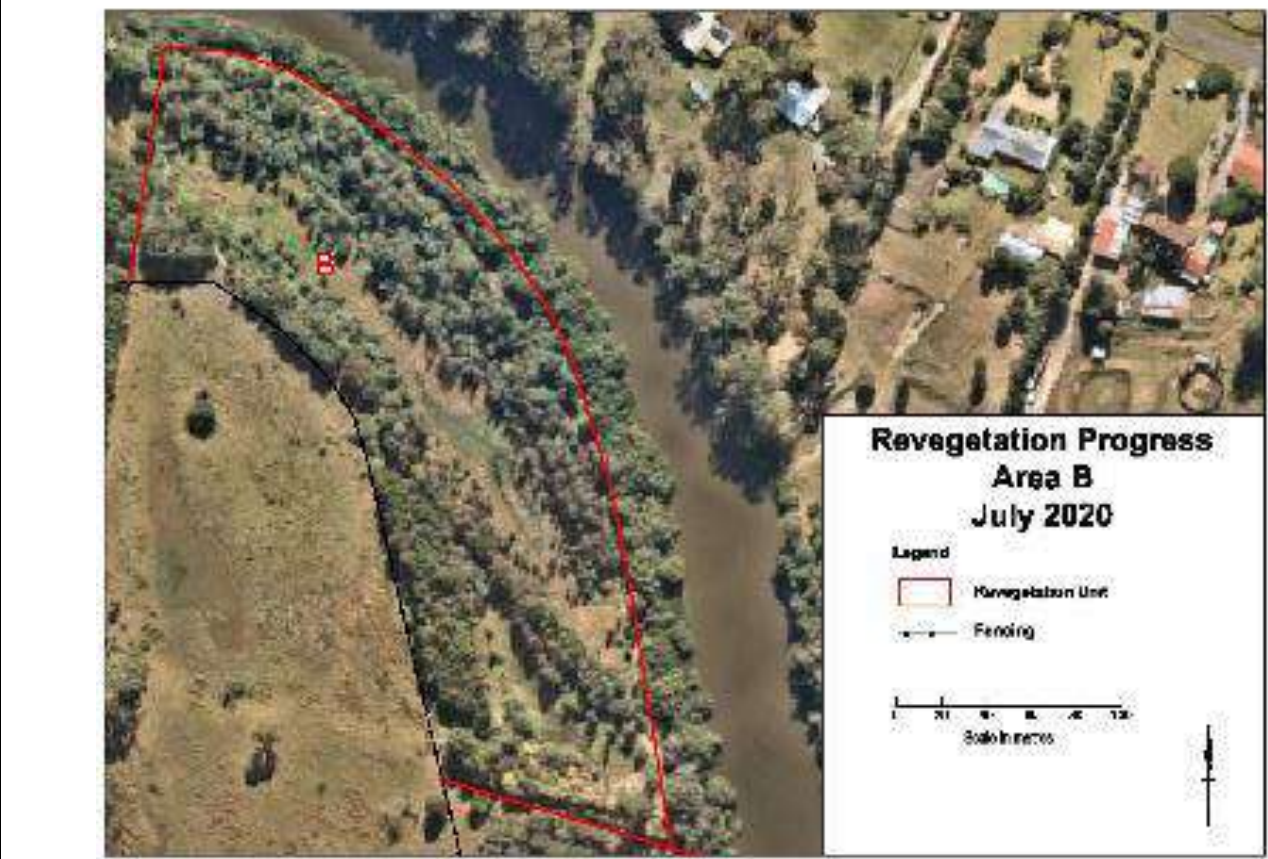


PLATE 46: Aerial of Revegetation progress of Area B - July 2020



PLATE 47: Aerial of Revegetation progress of Area B - July 2018

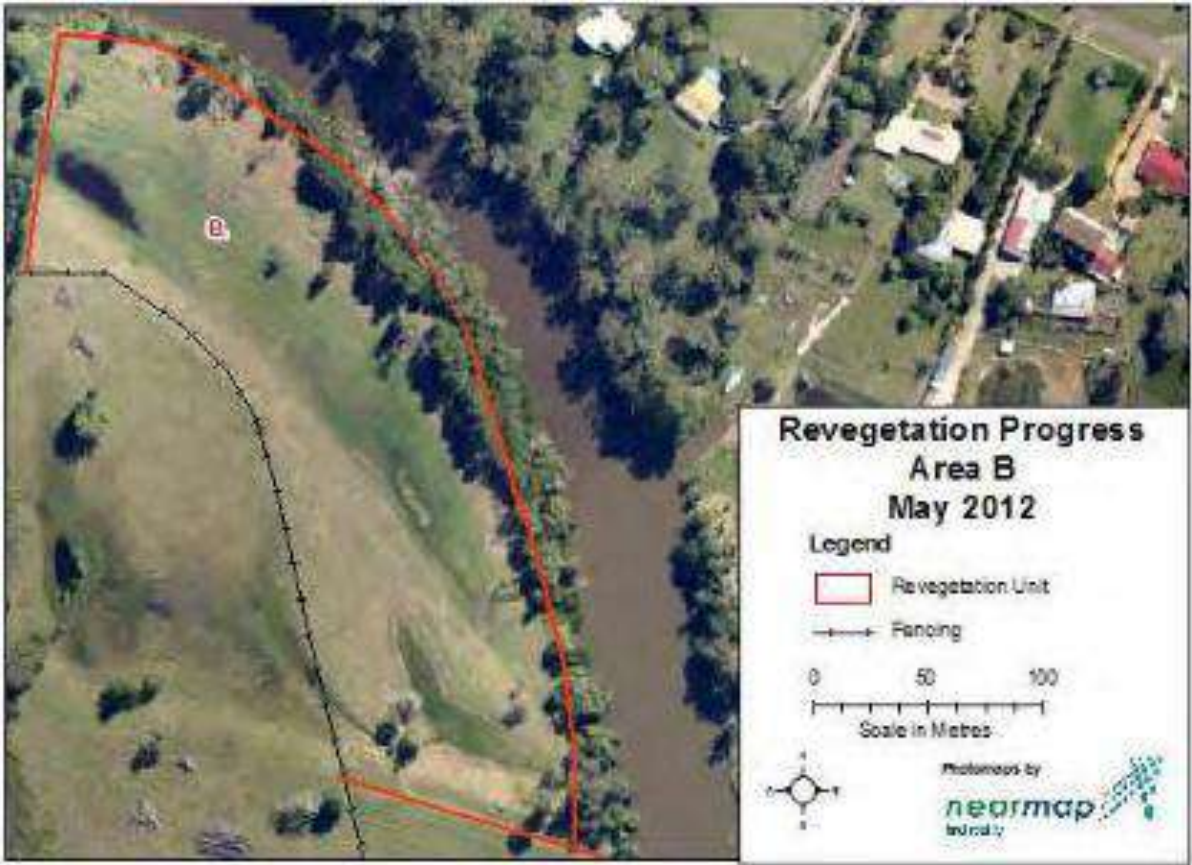


PLATE 48: Aerial of Revegetation progress of Area B - May 2012



PLATE 49: Revegetation Area B June 2025



PLATE 50: Revegetation Area B June 2025



PLATE 51: Revegetation Area B July 2024



PLATE 52: Revegetation Area B July 2024



PLATE 53: Revegetation Area B June 2023



PLATE 54: Revegetation Area B June 2023



PLATE 55: Revegetation Area B June 2022



PLATE 56: Revegetation Area B June 2022



PLATE 57: Revegetation Area B June 2021



PLATE 58: Revegetation Area B June 2021



PLATE 59: Revegetation Area B July 2020



PLATE 60: Revegetation Area B July 2020



PLATE 61: Revegetation Area B July 2018



PLATE 62: Revegetation Area B July 2018

8 Revegetation Area G

Area G was fenced in June 2015. Seedlings have been progressively planted in this large area since June 2015. The last planting in area G was completed by the end of 2018. Seedlings planted in the earlier stages of this area have now established well as shown in the photos below. **PLATES 63-71** show aerial photos of the revegetation progress of Area G in November 2024 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area C in June 2025 is shown in **PLATE 72** compared to previous years (June 2017 to July 2024) shown in **PLATES 73-79**.

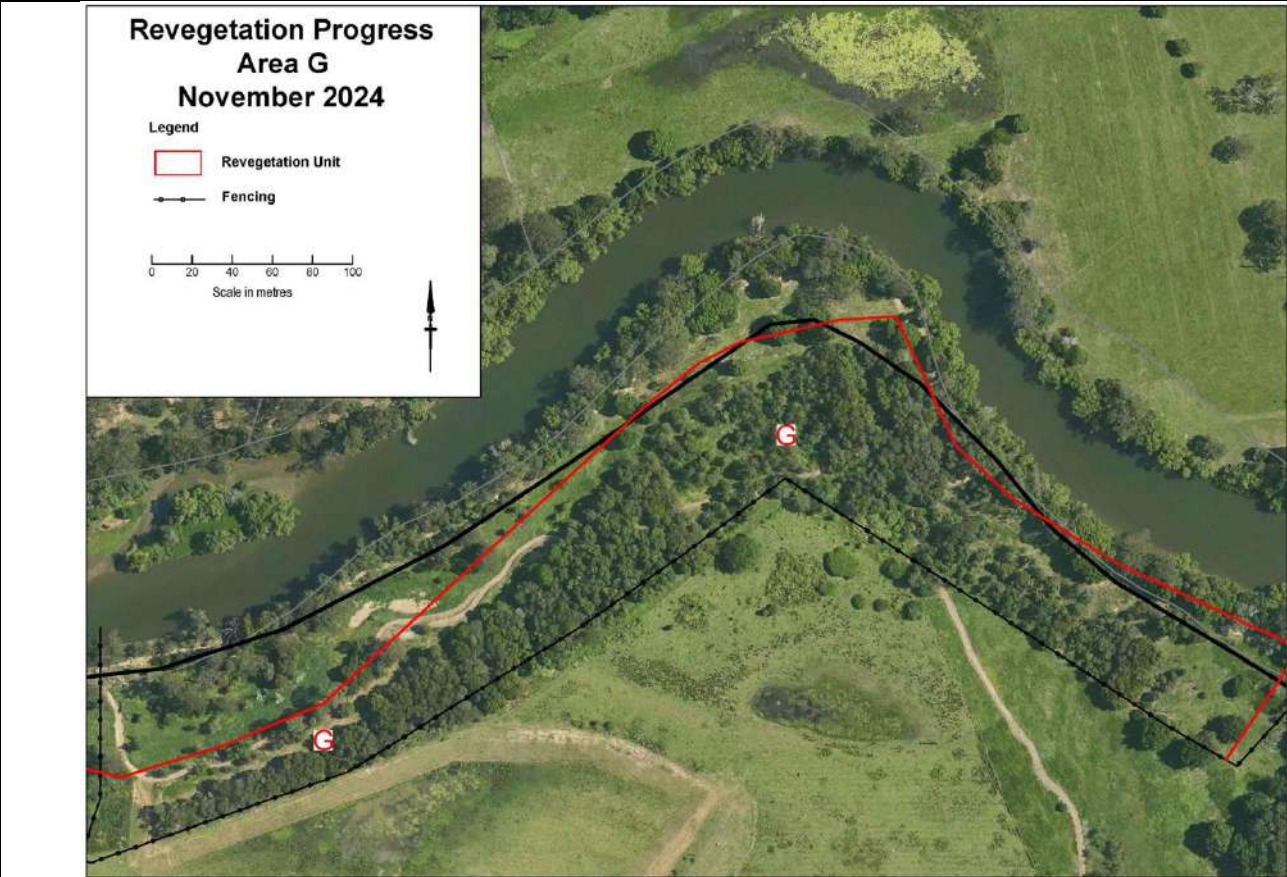


PLATE 63: Aerial of Revegetation progress of Area G - November 2024

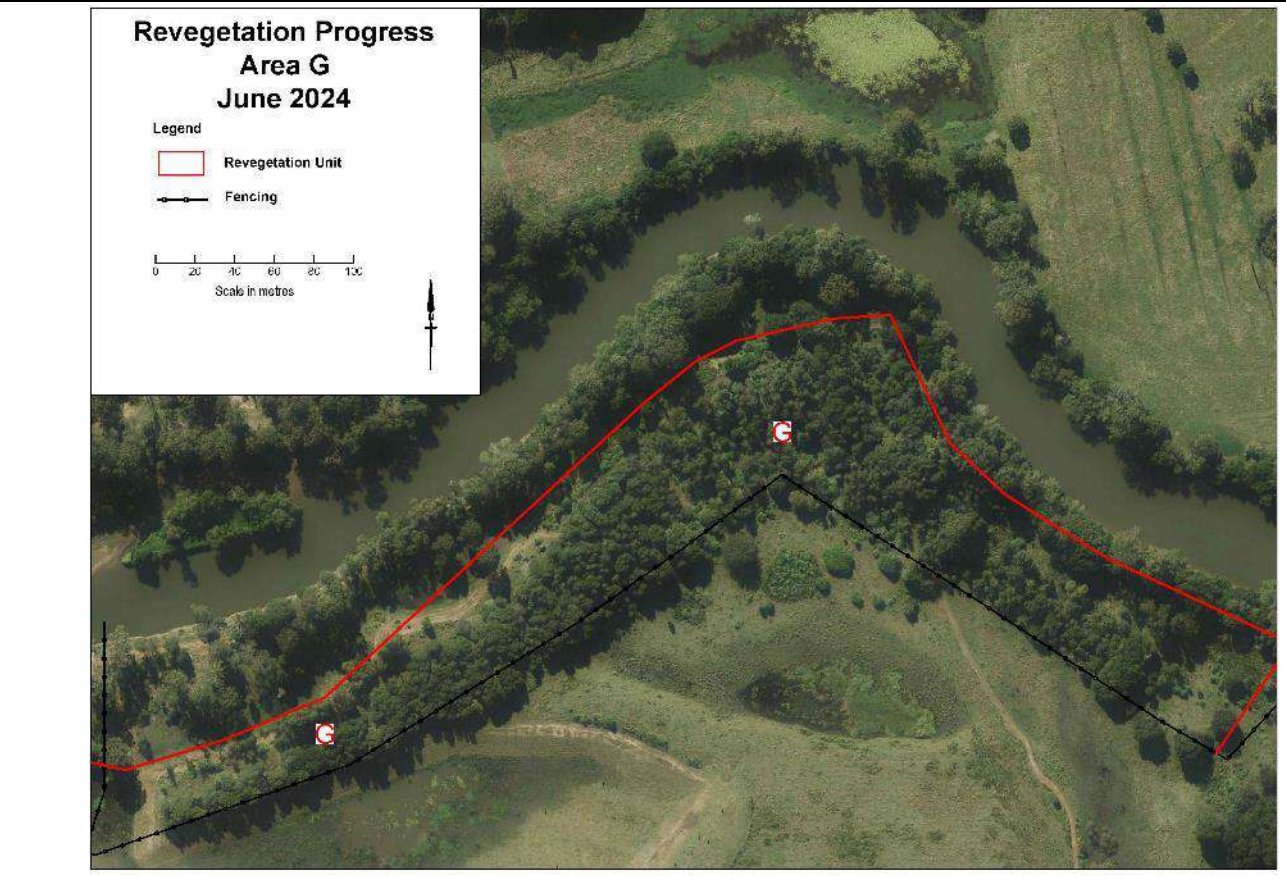


PLATE 64: Aerial of Revegetation progress of Area G - June 2024



PLATE 65: Aerial of Revegetation progress of Area G - April 2023

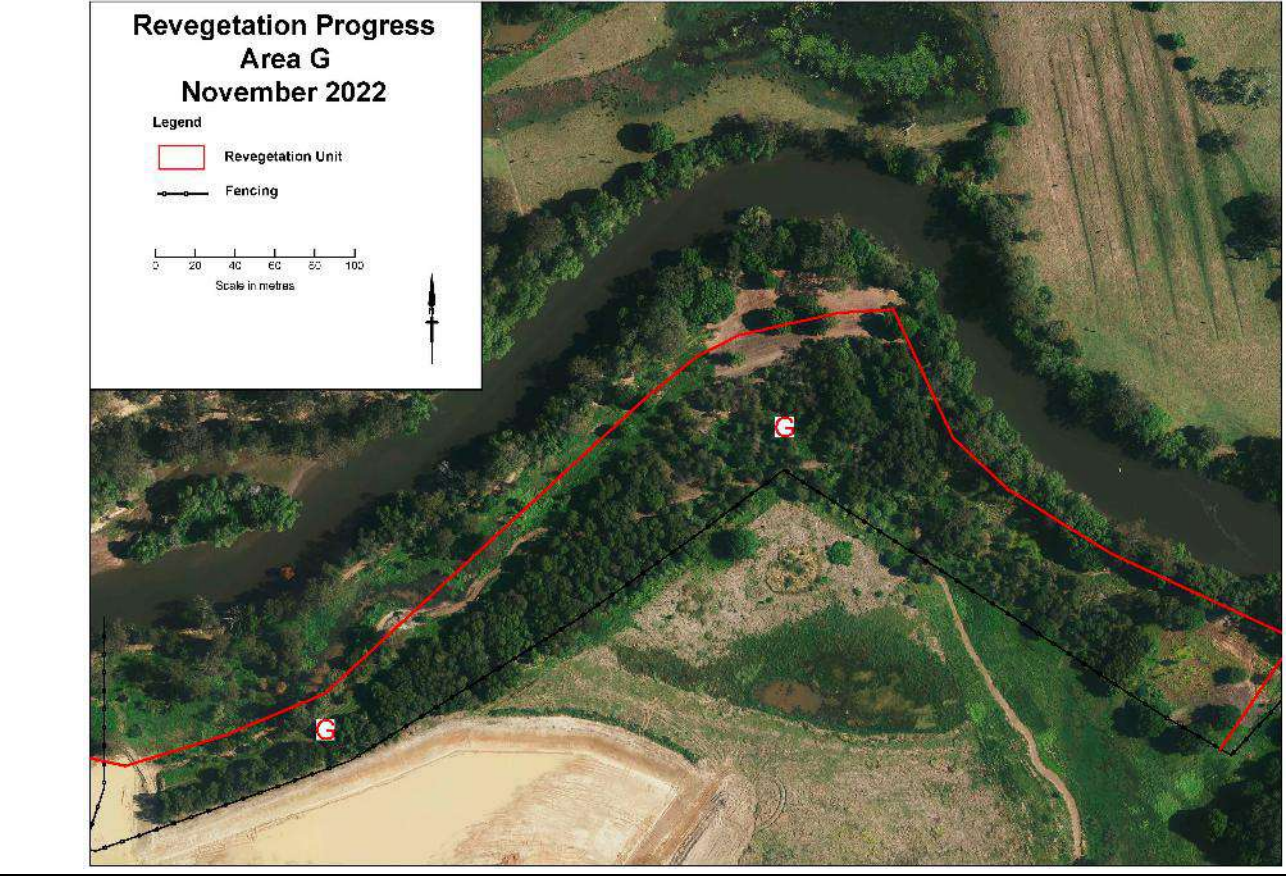


PLATE 66: Aerial of Revegetation progress of Area G - November 2022

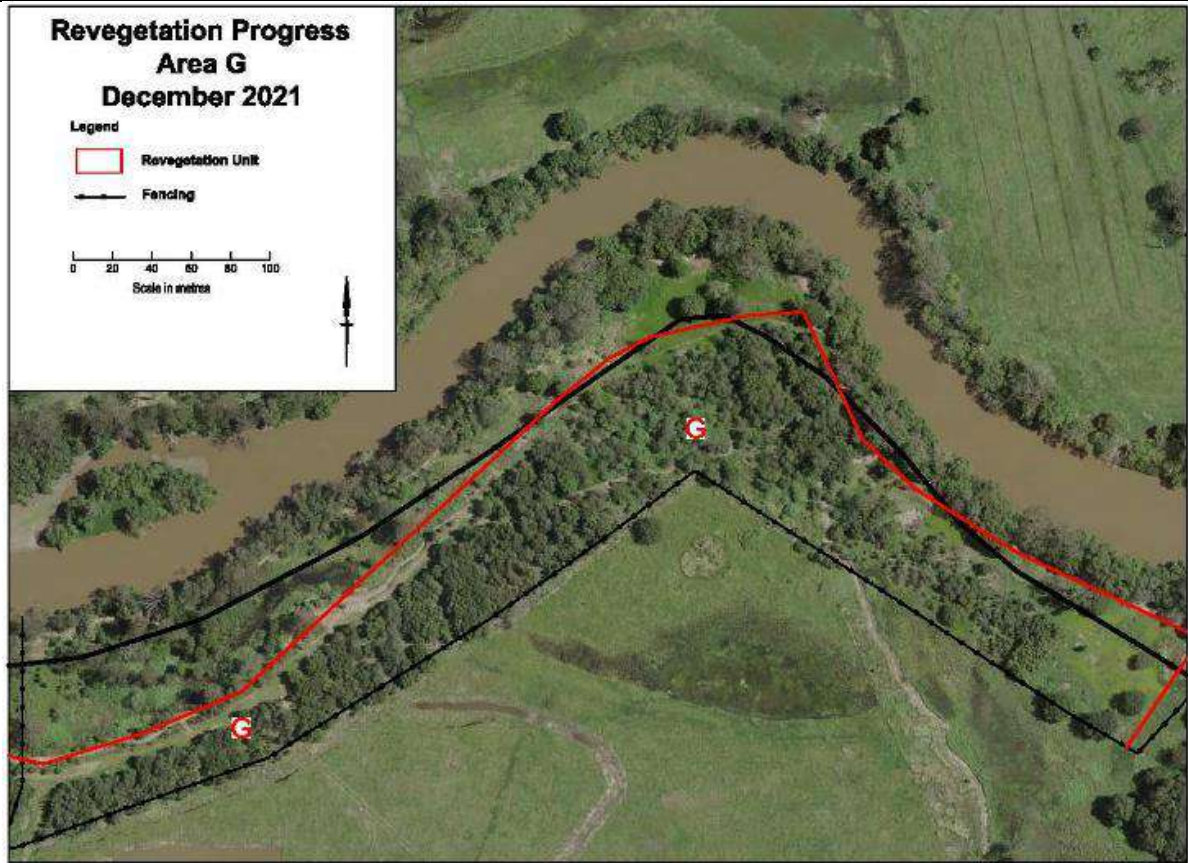


PLATE 67: Aerial of Revegetation progress of Area G - December 2021

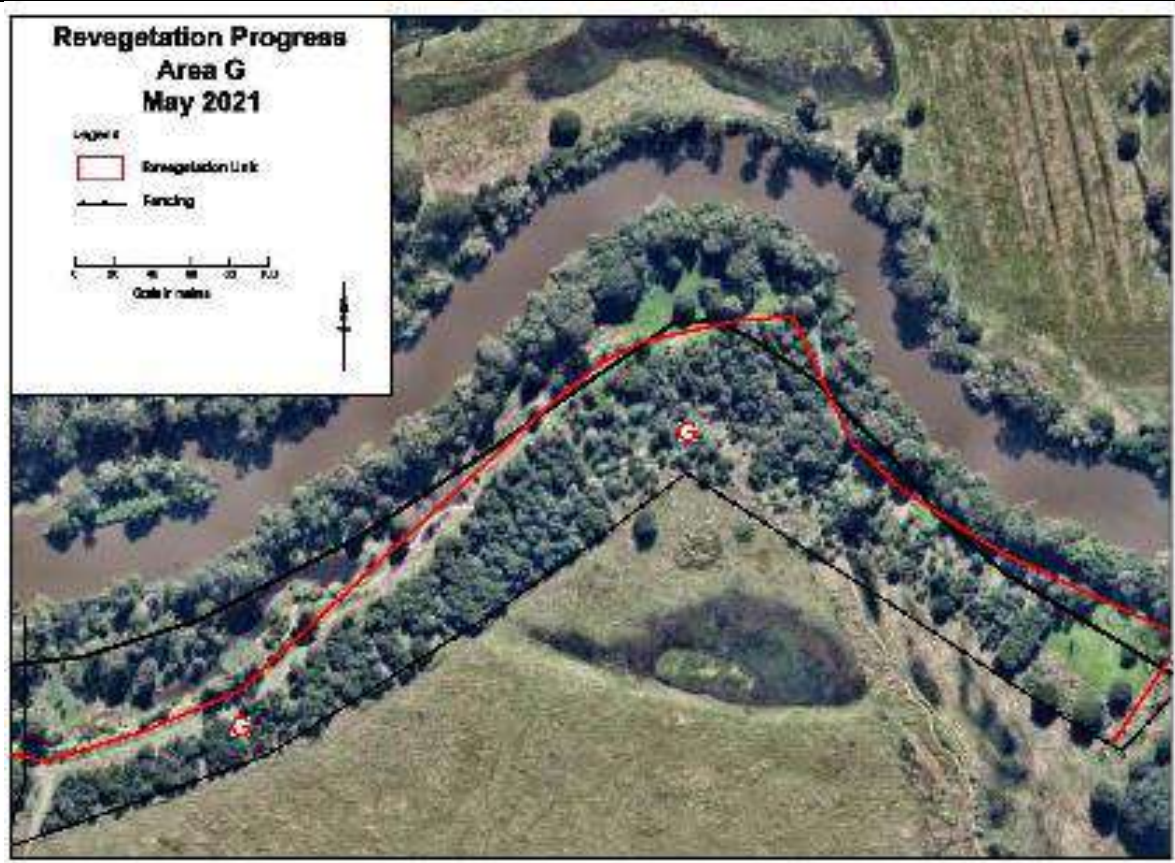


PLATE 68: Aerial of Revegetation progress of Area G - May 2021

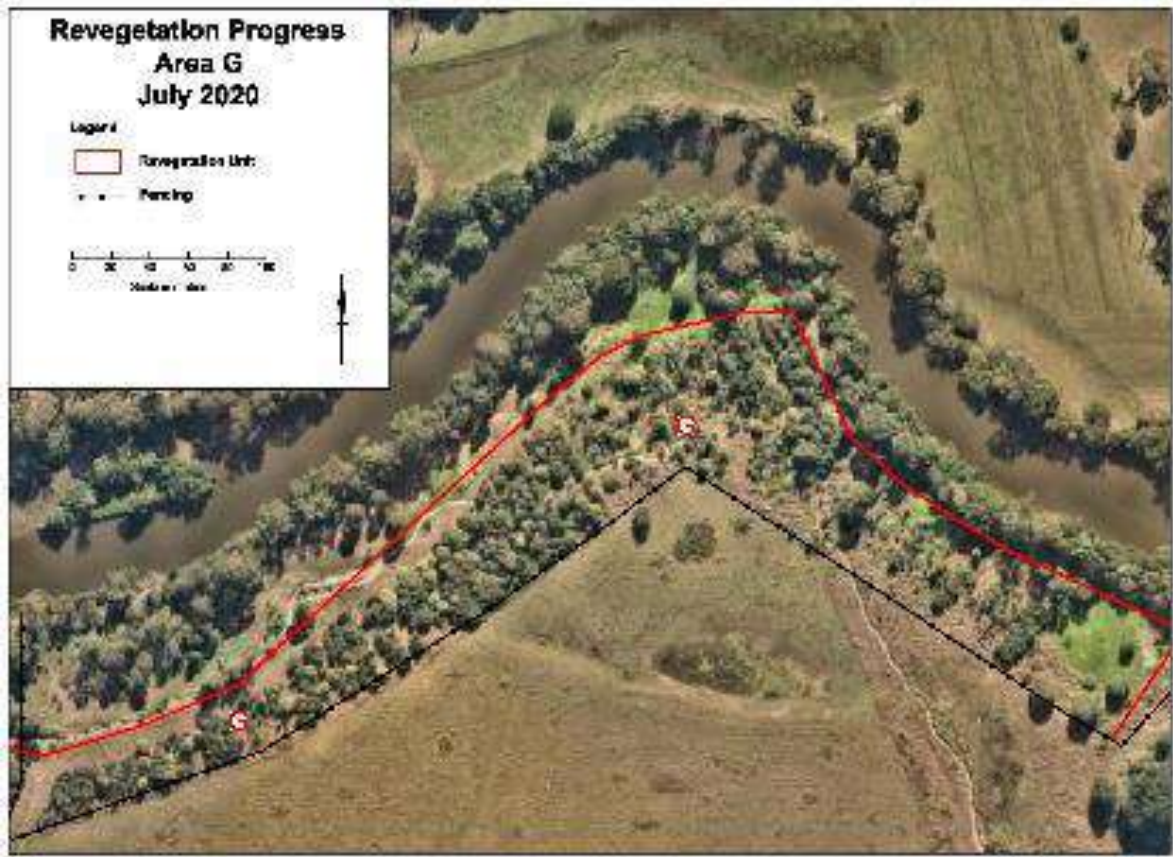


PLATE 69: Aerial of Revegetation progress of Area G - July 2020



PLATE 70: Aerial of Revegetation progress of Area G - July 2018



PLATE 71: Aerial of Revegetation progress of Area G - May 2012



PLATE 72: Revegetation Area G June 2025



PLATE 73: Revegetation Area G July 2024



PLATE 74: Revegetation Area G June 2023



PLATE 75: Revegetation Area G June 2022



PLATE 76: Revegetation Area G June 2021



PLATE 77: Revegetation Area G July 2020



PLATE 78: Revegetation Area G July 2018



PLATE 79: Revegetation Area G June 2017

9 Trials Involving Site Management Actions (Without Active Tree Planting)

In addition to the assisted regeneration involving active planting of seedlings, natural regeneration of area H has continued in the last 12 months. Initially, 5 areas were established to gauge the opportunity for natural regeneration through largely passive approaches whereby changes to management of the onsite farming operation may allow regeneration to occur without significant active planting and maintenance. These trials are summarised below:

- Area D was partly fenced to exclude stock in some sections of the trial. There has been some isolated natural recruitment of seedlings within the fenced area of the trial, however this has not been sufficiently successful to continuation of the trial. Area D will be included in the active revegetation planting activities in future (to be undertaken in future).
- Area F was fenced to exclude stock from the trial area. There has been some isolated natural recruitment of seedlings within the fenced area of the trial, however this was not sufficiently successful to warrant continuation of the trial. Area F has now been actively replanted with seedlings as part of the 2015 - 2016 revegetation works.
- Area G, which is alongside Area F was left unfenced as a trial for natural recruitment within an area in which stock were allowed continued access. No natural seedling recruitment was observed in this area. It has been fenced as part of the 2015 - 2016 revegetation works and continued active replanting with seedlings is ongoing.
- Area E, which is in close proximity to Area D, was left unfenced as a trial for natural recruitment within an area in which stock were allowed continued access. No natural seedling recruitment was observed in this area. The trial has been abandoned and this area will be fenced and actively replanted as part of future revegetation works.
- Area H is a different vegetation type to the other trials, composed of marine plants being mangrove and salt-water couch species. This trial area was partly fenced to observe the difference in seedling recruitment between areas grazed by stock and areas where stock was excluded. Following the success of this trial, additional fencing was erected in 2016. Since then, natural regeneration of casuarina on the land above highest astronomical tide has also been observed along with additional recruitment of mangrove species fringing the river and improvement in the health of salt couch in the occasionally inundated areas.

10 Revegetation Area H

This area is a trial establishing the natural regeneration capacity of marine plant vegetation units on the property. Commenced in February 2014, following success in the fenced trial area additional fencing was erected in 2016 to exclude stock from all parts of area H. In the latest July 2024 and July 205 monitoring, the gates to Revegetation Area H were open and cattle were present. Pasture grass was encroaching on areas of saltmarsh. Damage from cattle was evident in the saltmarsh areas in July 2025 monitoring. **PLATES 80 - 88** show aerial photos of the revegetation progress of Area H in November 2024 compared to previous years (May 2012 to June 2024). The progress of Revegetation Area H in June 2025 is shown in **PLATES 89 & 90** and compared to previous years (July 2018 to July 2024) in (**PLATES 91-102**).



PLATE 80: Aerial of Revegetation progress of Area H - November 2024



PLATE 81: Aerial of Revegetation progress of Area H - April 2024



PLATE 82: Aerial of Revegetation progress of Area H - April 2023



PLATE 83: Aerial of Revegetation progress of Area H - November 2022

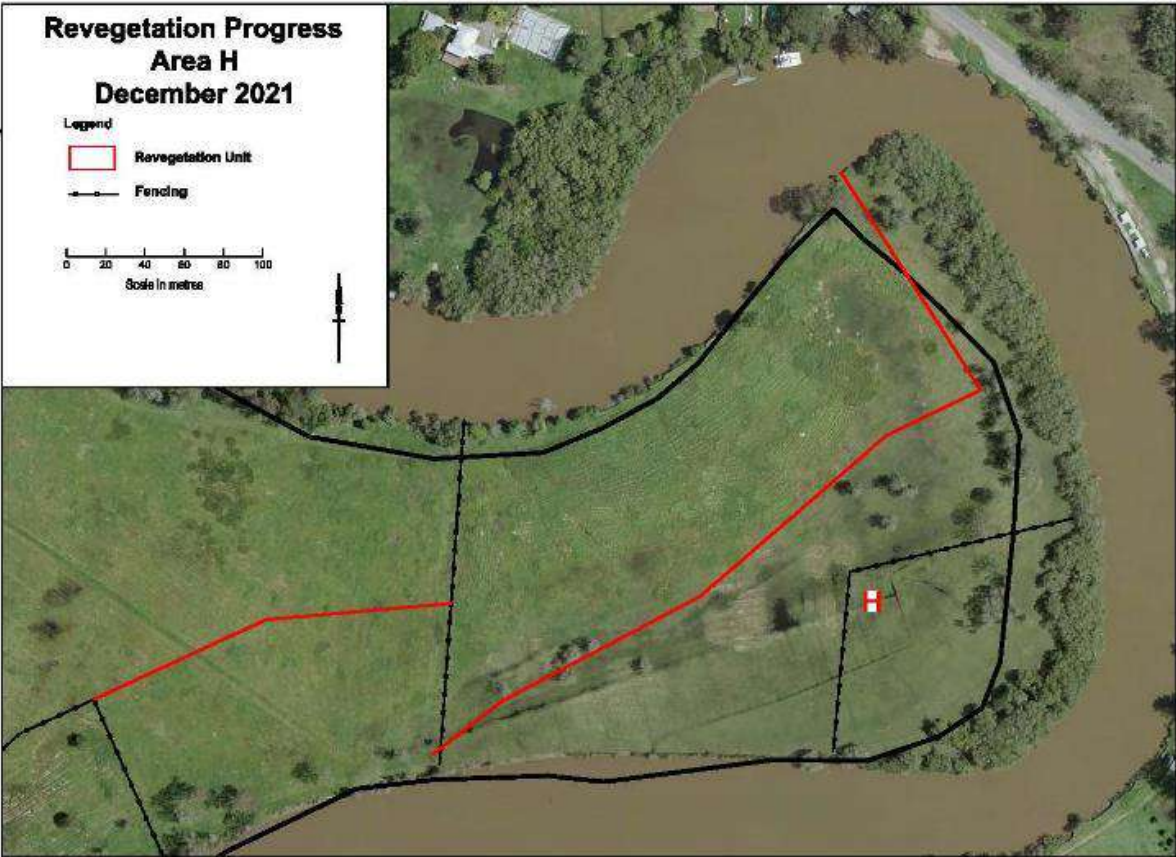


PLATE 84: Aerial of Revegetation progress of Area H - December 2021

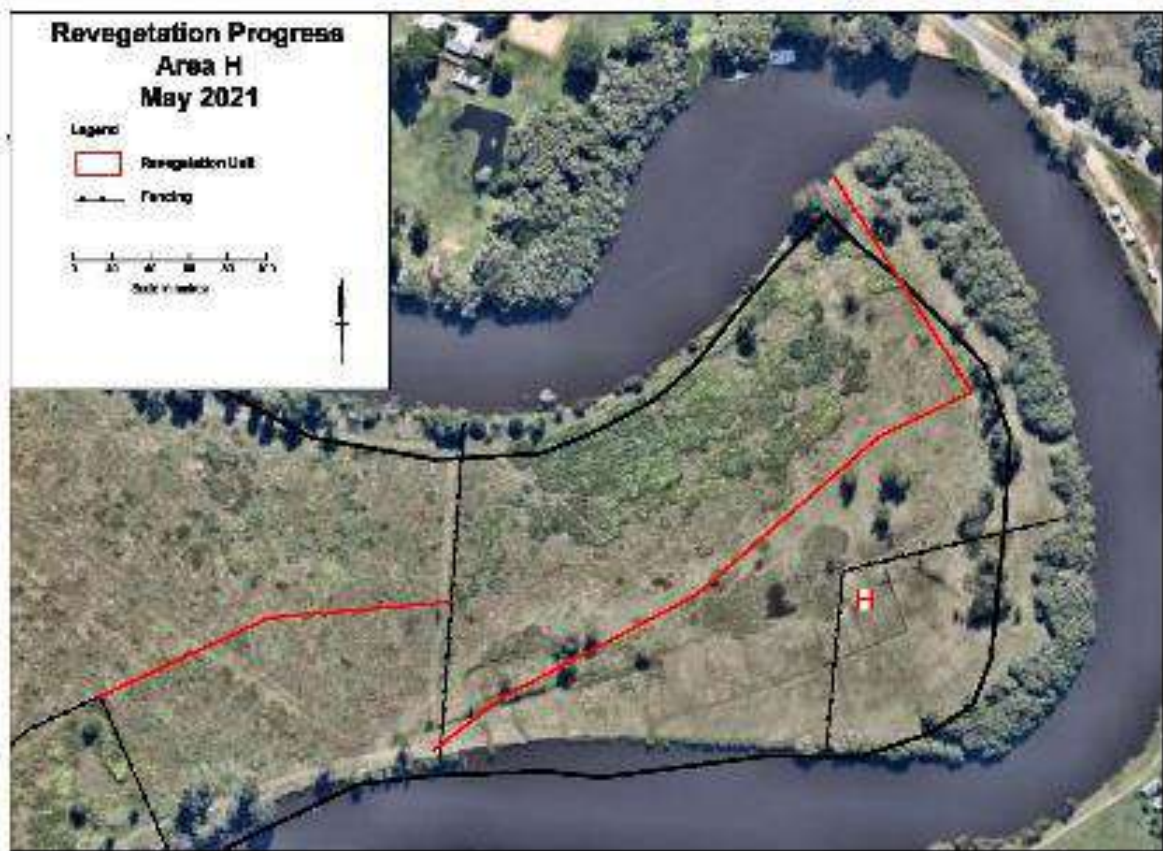


PLATE 85: Aerial of Revegetation progress of Area H - May 2021

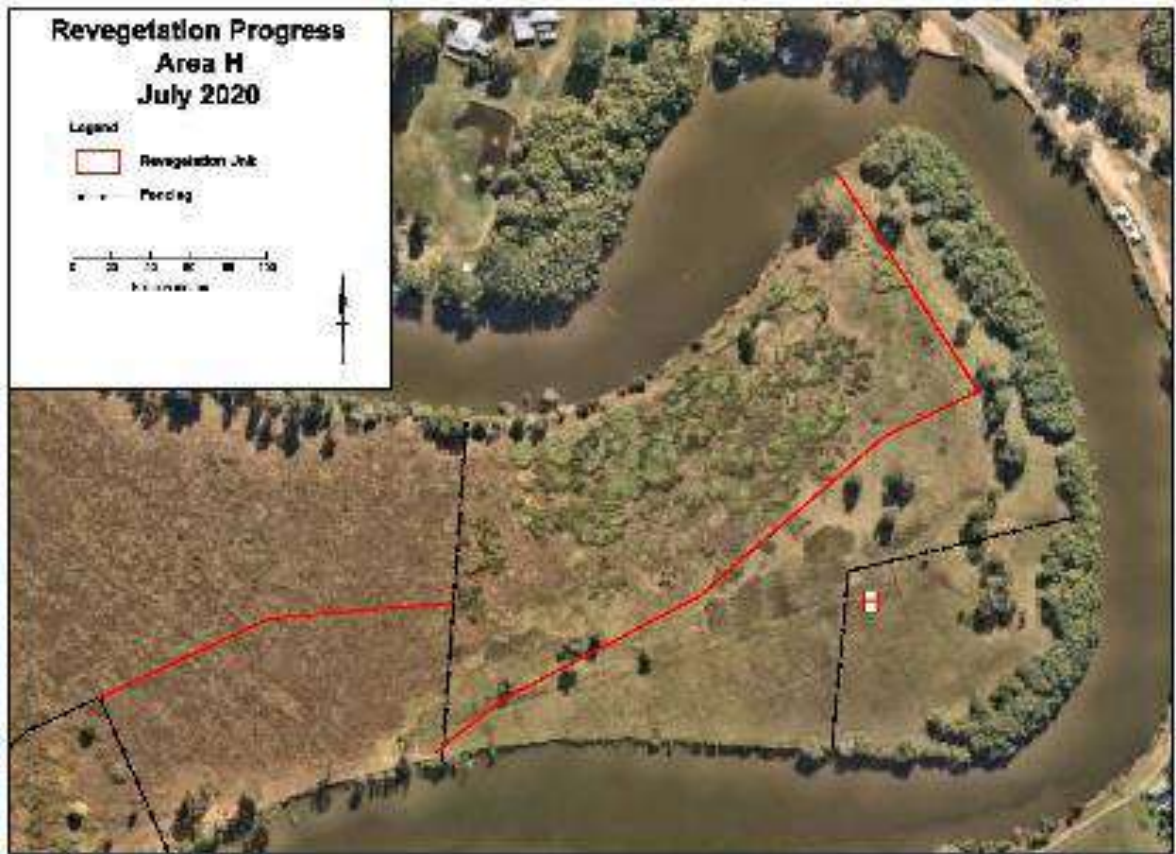


PLATE 86: Aerial of Revegetation progress of Area H - July 2020



PLATE 87: Aerial of Revegetation progress of Area H - July 2018





PLATE 89: Revegetation Area H June 2025



PLATE 90: Revegetation Area H June 2025



PLATE 91: Revegetation Area H July 2024



PLATE 92: Revegetation Area H July 2024



PLATE 93: Revegetation Area H June 2023



PLATE 94: Revegetation Area H June 2023



PLATE 95: Revegetation Area H June 2022



PLATE 96: Revegetation Area H June 2022



PLATE 97: Revegetation Area H June 2021



PLATE 98: Revegetation Area H June 2021



PLATE 99: Revegetation Area H July 2020



PLATE 100: Revegetation Area H July 2020



PLATE 101: Revegetation Area H July 2018



PLATE 102: Revegetation Area H July 2018

11 Photo Point Monitoring

Photo Point Monitoring has continued annually between 2017-2025. To limit the size of this summary report, only 1 photo from each monitoring point has been included in this section of the report. Should you require further photos or other information, please contact Northeast Business Park Pty Ltd. **PLATE 103** provides a plan showing the location of each Photo Point. **PLATE 104** provides a recent aerial (November 2024) showing the location of each current Photo Point.

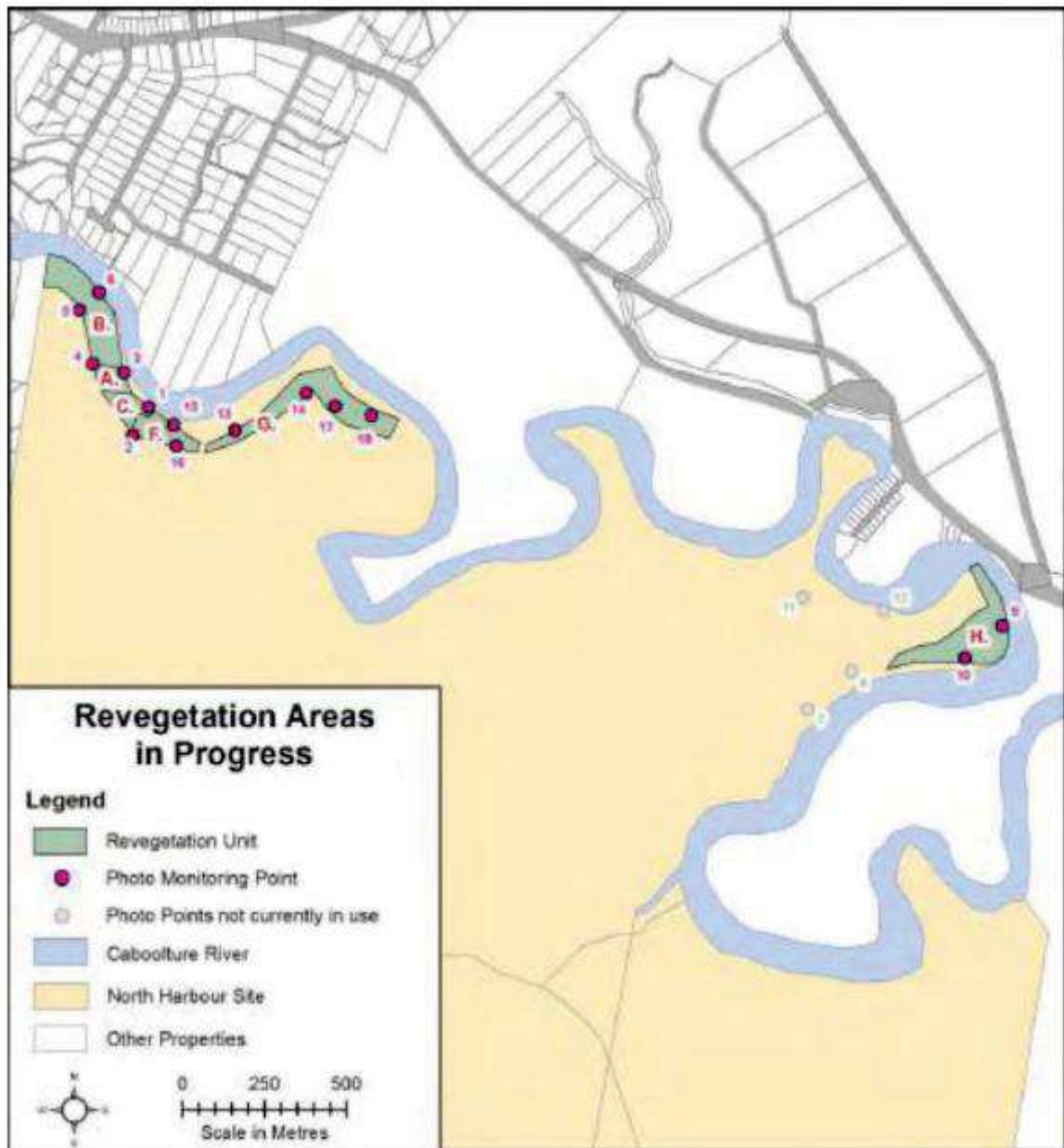


PLATE 103: Revegetation Areas in Progress.



PLATE 104: Recent aerial (November 2024) of Photo Point locations.

PHOTO POINT 1: Revegetation Area C. Blue billygoat weed (*Ageratum houstonianum*), exotic pasture grasses, Wild tobacco (*Solanum mauritianum*), exotic forbs and Brazilian nightshade (*Solanum seaforthianum*) growing within revegetation area - to be controlled by ongoing weed management.



PHOTO POINT 2: Revegetation Area F. Groundcover dominated by exotic grasses and forbs, Giant devil's fig (*Solanum chrysotrichum*), and Blue billygoat weed (*Ageratum houstonianum*), within revegetation area - to be controlled by ongoing weed management.



PHOTO POINT 3: Revegetation Area A. Some exotic grasses, Wild tobacco (*Solanum mauritianum*), Blue billygoat weed (*Ageratum houstonianum*) growing within revegetation area - to be controlled by ongoing weed management.



PHOTO POINT 4: Revegetation Area A. Primarily Singapore daisy (*Sphagneticola trilobata*), Blue billygoat weed (*Ageratum houstonianum*), exotic pasture grasses, Giant devil's fig (*Solanum chrysotrichum*), Broad-leaved pepper tree (*Schinus terebinthifolia*) - to be controlled by ongoing weed management.



PHOTO POINT 5: Revegetation Area B. Some exotic grasses, Mile-a-minute (*Ipomoea cairica*), Blue billygoat weed (*Ageratum houstonianum*), Broadleaved pepper tree (*Schinus terebinthifolia*), Wild tobacco (*Solanum mauritianum*), Thickhead (*Crassocephalum crepidioides*), Yellow bells (*Tecoma stans*), Camphor laurel (*Cinnamomum camphora*) and Devil's fig (*Solanum chrysotrichum*) growing within revegetation area - to be controlled by ongoing weed management.



PHOTO POINT 6: Revegetation Area B. Mile-a-minute (*Ipomoea cairica*), Blue billygoat weed (*Ageratum houstonianum*), Broadleaved pepper tree (*Schinus terebinthifolia*), Wild tobacco (*Solanum mauritianum*), and Giant devil's fig (*Solanum chrysotrichum*) growing within revegetation area - to be controlled by ongoing weed management.



PHOTO POINT 9: Revegetation Area H: Exotic pasture grasses encroaching into saltmarsh areas. Damage from cattle to saltmarsh areas.



PHOTO POINT 10: Revegetation Area H. Exotic pasture grasses encroaching into saltmarsh areas. Damage from cattle to saltmarsh areas.



PHOTO POINT 13: Revegetation Area G. Some pasture grass, Lantana (*Lantana camara*) and Wild tobacco (*Solanum mauritianum*) growing within rehab area - to be controlled by ongoing weed management.



PHOTO POINT 14: Revegetation Area G. Some pasture grasses, Singapore daisy (*Sphagneticola trilobata*), Blue billygoat weed (*Ageratum houstonianum*), Giant devil's fig (*Solanum chrysotrichum*), Wild tobacco (*Solanum mauritianum*), Lantana (*Lantana camara*), Broad-leaved pepper tree (*Schinus terebinthifolius*) growing - to be controlled by ongoing weed management.



PHOTO POINT 15: Revegetation Area F. Some pasture grasses, Lantana (*Lantana camara*), Wild tobacco (*Solanum mauritianum*), and Blue billy goat weed (*Ageratum houstonianum*) - to be controlled by ongoing weed management.



PHOTO POINT 16: Revegetation Area F. Some pasture grasses and Blue billy goat weed (*Ageratum houstonianum*) - to be controlled by ongoing weed management. There was evidence of recent weed control with cattle grazing



PHOTO POINT 17: Revegetation Area G. Pasture grasses, Giant devil's fig (*Solanum chrysotrichum*), Wild tobacco (*Solanum mauritianum*) and Lantana (*Lantana camara*) - to be controlled by ongoing weed management.



PHOTO POINT 18: Revegetation Area G. Pasture grasses, Singapore daisy (*Sphagneticola trilobata*), Giant devil's fig (*Solanum chrysotrichum*) Camphor laurel (*Cinnamomum camphora*) and Broad-leaved pepper tree (*Schinus terebinthifolius*) throughout area - to be controlled by ongoing weed management.



14 July 2025

Ref.: 19210-035-Rev0

North Harbour Holdings Pty Ltd
Attention: Michael McErlean
michael@northharbour.com.au

RE: ENVIRONMENTAL MONITORING SUMMARY – JUNE 2024 TO MAY 2025
NORTH HARBOUR DEVELOPMENT

Dear Michael,

1. Introduction

Tectonic was engaged by North Harbour Holdings Pty Ltd (NHH) to prepare this report summarising the acid sulfate soil (ASS) management and monitoring completed between June 2024 to May 2025 related with ongoing land development at North Harbour.

1.1 Background

Tectonic has provided ongoing ASS and groundwater management advice on behalf of North Harbour since 2017. Implementation of ASS management strategies during ongoing development (including ASS treatment, verification testing and other services pertaining to general site management) are undertaken by the Primary Contractor, Hall Civil (and their various subcontractors), the details of which have been provided to Tectonic for inclusion herein.

Soil and water management pertaining to ASS, for respective development components, has been completed in general accordance with the following approved management documents:

- *Acid Sulfate Soil Investigation and Management Plan*, North Harbour Mixed Industry and Business Area (MIBA), prepared by Tectonic (Report No. 19210-001-Rev0, dated 8 November 2019).
- *Addendum to Acid Sulfate Soil Management Plan*, Proposed Sports Fields Bulk Earthworks; North Harbour Mixed Industry and Business Area (MIBA), prepared by Tectonic (Report No. 19210-032-Rev0, dated 31 October 2023).

2. Summary of Site Development Activities

Development across North Harbour *Residential West* was completed prior to June 2024, with all associated works for this development zone now finished. All ASS management and monitoring associated with this development precinct were reported during the development, and at the time of completion.



Development works undertaken at North Harbour during the June 2024 to May 2025 reporting period have included:

- North Harbour Mixed Industry and Business Area (MIBA), including the Northern Sports Fields and Area H1/H2 bulk earthworks (Lot 2 on SP320619; west of Nolan Drive).
- External DTMR Road Upgrade, connecting North Harbour Boulevard to Buchanan Road.

These works, and associated ASS risk and mitigation measures completed, are described in further detail below.

2.1 North Harbour MIBA Works

Ongoing works within the MIBA have primarily involved earthworks and/or construction of civil infrastructure and roads, across areas which have either been identified as non-acidic, non-AASS/non-PASS, or within completed areas which have previously undergone management (as required) and have reached finished design level.

The only works undertaken within the reporting period, with potential to impact material characterised as containing acidic non-sulfuric (ANS) soil or ASS, involved construction of a Trunk Sewer in area RN8. Approximately 2500 m³ of trench spoil was excavated, along an approximate 800 m section of trunk sewer installed within RN8. Excavated material was treated with agricultural lime and spread adjacent to the northern side of the trench. Five (5) verification tests were collected from this material along the trunk sewer alignment, which confirmed that all acidity had been successfully neutralised.

Bulk earthworks associated with Area H1/H2 (west of Nolan Drive) commenced in May 2025 and have involved cut/fill earthworks in areas located above RL 5 m AHD. Consequently, the associated ASS risk is negligible and no specific management measures were warranted.

2.2 External DTMR Road Upgrade Works

The ASS risk associated with the external DTMR road upgrade was not characterised under the approved ASSMP. To manage ASS risk in this area disturbed soils were conservatively treated in line with the requirements for the Buchanan Road Drainage Corridor; i.e. neutralisation with fine grained agricultural lime at a rate of 13 kg/m³ and completing verification testing on the treated material. Approximately 10,000 m³ of soil was relocated as part of the external road upgrade, which was treated and spread across the northern sports field car park area. Twenty (20) verification tests were collected from this treated material, all of which confirmed that acidity had been successfully neutralised.

3. Groundwater Monitoring

Earthworks associated with development of Wetlands 1 to 4, and the Buchanan Road Drainage Reserve, were completed in November 2022, with associated groundwater monitoring completed in accordance with the approved ASSMP between November 2020 and October 2023.

The majority of works associated with MIBA development since 2023 have taken place within soils which have been characterised as non-acid sulfate soil (non-ASS) or ANS soil, where the environmental risk of acid migration is relatively low, with no ongoing requirement for groundwater monitoring. Thus, no further groundwater monitoring has been completed for the monitoring period.



4. ASS Validation Testing

Management of site works including soil treatment was undertaken by Hall, with verification testing provided by their subcontractor Qualtest Laboratory Pty Ltd.

Treatment of ASS was limited to excavated material associated with the RN8 Trunk Sewer, and relocation of material from the External DTMR Road Upgrade to the northern sports field car park area.

A summary of ASS verification testing completed between June 2024 and May 2025 is provided in Table 1.

Table 1: Summary of ASS Verification Test Results

Source Area	Approximate Bulk Earthworks Volume	Number of Samples/Tests	
		Passes	Fails
RN8 Trunk Sewer	2500 m ³	5	0
External DTMR Road Upgrade (Northern sports field)	10,000 m ³	20	0

The testing completed generally corresponds to the earthworks volume estimates provided by Hall, at the prescribed rate of 1 test per 500 m³. Testing completed indicated that the soils had been sufficiently limed to counteract the relative ASS hazard present. The frequency and outcome of the testing undertaken is considered acceptable to confirm that these soils have been appropriately treated and managed from an ASS perspective.

It is also noted that a substantial proportion of earthworks was completed during the subject period in areas located above RL 5 m AHD or where ASS was known to be absent. Disturbances of ANS materials were also understood to have been treated with agricultural lime in accordance with the ASSMP but did not require validation testing under the approved ASSMP.

4.1 Lime Delivery Records

Lime delivery records provided by Hall indicate a total of 633 tonne of agricultural lime was delivered to the North Harbour MIBA site for use between June 2024 and May 2025. Assuming these materials were applied in accordance with the ASSMP, this volume sufficiently accounts for the treatment of all disturbed materials as described by Hall, at the soil treatment rates defined in the ASSMP, plus an additional 470 tonne which is expected to have been applied to ANS soils across the site.

5. Conclusion

The information provided by Hall has been reviewed and indicates that, where disturbed, ASS has been effectively treated and managed during ongoing land development at North Harbour. It is understood that there have been no major adverse environmental impacts to local soils or groundwater conditions as a result of the construction activities undertaken within the summary period.

These results demonstrate that risks associated with disturbance of ASS during development of *North Harbour Residential West* and *MIBA* are being appropriately managed by North Harbour and Hall during works to date.



Your attention is drawn to the document *Limitations*, which is attached to this letter report.
Please contact the undersigned should you wish to discuss any of the above matters.

Yours faithfully,

Tectonic Geotechnical Pty Ltd

Mark Thomson B.Sc (Environmental) CPESC 7057
Senior Environmental Scientist

Attachments:

A. Limitations

Limitations

This document has been prepared for the purpose outlined in Tectonic's proposal and no responsibility is accepted for the use of this document, in whole or in part, for any other purpose.

The scope of Tectonic's Services are as described in Tectonic's proposal, and are subject to restrictions and limitations. Tectonic did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the report. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Tectonic in regards to it.

Conditions may exist which were undetectable given that economic and time constraints limit the practical extent of geotechnical investigation. Variations in conditions may occur between investigation locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the document. Where variations exist on site, additional studies and actions may be required.

Tectonic's opinions are based upon information that existed at the time that the work was performed. The passage of time, man-made or natural events, may alter the site conditions. It is understood that the Services undertaken allowed Tectonic to form an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

Any assessments made in the preparation of this document are based on the conditions indicated from published sources and the findings of the investigation described. Actual subsurface conditions may differ from those indicated in the document (e.g. between boreholes or test pits). No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this document.

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Project Reference Number: LP140120

21 July 2025

Attention: Michael McErlean
Planning & Approvals Manager
North Harbour Holding Pty Ltd
P O Box 99, Paddington, Qld 4064

From: James Hall-Brown
Principal Environmental Scientist/Director
Lithaqua Environmental Services
PO Box 136, Peregrine Beach, QLD 4573

M: 0417 884 155 E: michael@northharbour.com.au

M: 0401 671 624 E: james@lithaqua.com

Monitoring Summary Report

North Harbour – Surface Water Quality Monitoring Summary – 2024 / 2025 Reporting Period North Harbour Residential Development, Burpengary East, QLD

Dear Michael,

North Harbour Holdings Pty Ltd (North Harbour) requested that Lithaqua Pty Ltd (Lithaqua) undertake the 2024/2025 surface water quality monitoring program at the North Harbour development project located at Burpengary East, Queensland (the site).

The monitoring program was completed in general accordance with the Residential West Water Quality Monitoring Plan Version 7 (Cardno, 03/02/2015). Water quality monitoring has been conducted in general accordance with this document since July 2015. The water quality monitoring program conducted during the 2024 – 2025 reporting period aimed to gather water quality data to monitor the quality of surface water during the construction phase of the North Harbour residential and commercial development.

The objectives of this letter report are to succinctly present:

- Monitoring methodology used by Lithaqua to complete this monitoring program;
- Water quality monitoring data;
- Field parameters readings recorded and the analytical results of the water samples collected during this period; and
- Interpretation of the water quality data obtained.

Sampling Locations

Monthly in-situ and laboratory water quality sampling were conducted at 5 locations on-site (A, C, D, F and G) and 2 locations upstream and downstream of the development site on the Caboolture River (H and I). The locations of the sampling points are presented in Figures 1 and 2 and photographs of each sampling location are presented in Photographs 1-7 of the attached enclosures. The following headings provide a summary of the water quality monitoring program conducted at these sampling locations over the reporting period with the aim of achieving the above stated objectives.

Monitoring Methodology

The water quality monitoring was conducted by Lithaqua personnel in general accordance with the NEBP Residential West Water Quality Monitoring Plan (Version 7), the Australian Standard AS5667.1-1998 (Water Quality – Sampling Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques and the Preservation and Handling of Samples), the Australian Standard AS5667.6-1998 (Water Quality – Sampling Part 6: Guidance on the Sampling of Rivers and Streams), and Queensland regulatory requirements.

The following method was utilised by Lithaqua personnel to monitor water quality at each monitoring location:

- Upon arrival at the monitoring location, a visual assessment for potential presence of litter and surface sheen was conducted;
- Field parameters including turbidity, temperature, Dissolved Oxygen (DO), Electrical Conductivity (EC) and pH were measured using adequately calibrated water quality monitoring equipment;
- The analysis of the physico-chemical properties of water from each location was conducted by collecting the samples using a telescopic sampling pole. Appropriately labelled, laboratory supplied sample containers were immersed upside down beneath the water surface then turned right way up to collect the sample. Sample containers were sealed, placed on ice and transferred to a National Association of Testing Authorities (NATA) accredited laboratory - Australian Laboratory Services (ALS) in Stafford, Queensland or Eurofins Environment Testing (Eurofins) in Murarrie, Queensland, using appropriate sample preservation procedures and Chain-of-Custody (CoC) documentation for the analysis of physico-chemical water quality parameters including turbidity, DO, EC and pH.
- An additional water sample for biological analysis was collected at each location using the same methodology for analysis of Chlorophyll-‘a’ concentrations by ALS or Eurofins.

Results

The field measurements and observations obtained from all monitoring locations (A, C, D, F, G, H and I) over the reporting period are summarised in Tables 1-7. Analytical data provided by ALS and Eurofins from samples collected from all monitoring locations over the reporting period are presented in Tables 1-7. Laboratory reports including the Certificate of Analysis (COA), COC and Sample Receipt Notification (SRN) reports are presented in the attached enclosures.

Due to insufficient water depth to immerse the sensors of the water quality monitoring instruments and a lack of water for sample collection/analysis, the availability of data has been limited at location F. Over the reporting period, Location F (upstream Raff Creek tributary) has been observed to be dry on 2 sampling events (August, and October 2024). The lack of surface water at Location F is consistent with seasonal variations in rainfall and subsequent overland flow that has been observed and recorded during previous reporting periods and the baseline data observations that were recorded prior to commencement of construction.

Data Interpretation

Field and laboratory measured parameters including Turbidity, DO, pH and Chlorophyll-a were compared against the Recommended Water Quality Objectives (WQOs) from the Department of Environment and Heritage Protection (EHP) ‘*Queensland Water Quality Guidelines 2009*’ dated July 2013 and the Department of Environment and Resource Management (DERM) ‘*Environmental Protection (Water) Policy 2009 Caboolture River environmental values and water quality objectives Basin No. 142 (part), including all tributaries of Caboolture River*’ dated July 2010. All results recorded during sampling events conducted at the

7 locations during the 2024-2025 reporting period are presented in the water quality monitoring data summary Tables (1 - 7) of this report.

As temperature and conductivity results are consistent with historical monitoring results, further interpretation of these parameters is not considered necessary.

With reference to Tables 1 - 7 and the recommended water quality objective values listed, the following conclusions are drawn with respect to the key water quality parameters (Dissolved Oxygen, Chlorophyll-a, Turbidity and pH).

Dissolved Oxygen

The DO measurements during the monthly in-situ sampling events were consistently below the recommended WQOs at all locations except location I. The points below summarise the results for DO over the reporting period at each location.

- DO measurements at location A were below the lowland freshwater WQO (85-110% saturation) over the reporting period except for one event in September 2024.
- DO measurements at location C were below the Middle Estuary WQO (85-105%) for all sampling events except for one event in September 2024.
- DO measurements at location D were below the middle estuary WQO for all sampling events except for three events in July and September 2024 and March 2025.
- DO measurements at location F were below the lowland freshwater WQO for all sampling events except for one event in September 2024.
- DO measurements at location G were below the middle estuary WQO for all sampling events except for three events in July and September 2024 and March 2025.
- DO measurements at location H were below the middle estuary WQO for all sampling events three events in August and September 2024 and March 2025.
- DO measurements at location I were within the middle estuary WQO for all sampling events except for 3 events in August 2024 and February and May 2025.

These measurements are consistent with the values recorded in previous reporting periods including pre-construction baseline monitoring.

Chlorophyll-a

During the 2024-2025 monthly in-situ sampling events, a sample of water was collected from each location then transported to the NATA accredited laboratory (ALS or Eurofins) for analysis of chlorophyll-a concentrations. The points below summarise the analytical results over the reporting period at each location.

- Chlorophyll-a results at location A were below the lowland freshwater WQO concentration threshold (8mg/m³) over the reporting period.
- Chlorophyll-a results at location C were below the Middle Estuary WQO concentration threshold (4mg/m³) for all sampling events except for two events that were marginally in excess of the WQO in October 2024 (4mg/m³) and February 2025 (5.1mg/m³).

- Chlorophyll-a results at location D were below the middle estuary WQO concentration threshold for all sampling events except for four events in December 2024 (41mg/m³) and January (5mg/m³), February (6.5mg/m³) and March (7.1mg/m³) 2025.
- Chlorophyll-a results at location F were below the lowland freshwater WQO concentration threshold for all sampling events except for two events in February (54mg/m³) and March (39mg/m³) 2025.
- Chlorophyll-a results at location G were in excess or equal to the middle estuary WQO concentration threshold for six sampling events in July (4mg/m³) and October (5mg/m³) 2024, and February (16mg/m³), March (9.9mg/m³), May (4mg/m³) and June (5mg/m³) 2025.
- Chlorophyll-a results at location H were in excess or equal to the middle estuary WQO concentration threshold for four sampling events in July (4 mg/m³) and August (14mg/m³) 2024, and February (9mg/m³) and June (11mg/m³) 2025.
- Chlorophyll-a results at location I were below the middle estuary WQO concentration threshold for all sampling events except for two events in December 2024 (13mg/m³) and January 2025 (4mg/m³).

The concentrations of Chlorophyll-a in water samples collected from freshwater locations upstream of the development (A and F) were in most cases similar to the concentrations detected from the tidally influenced downstream locations (C and D).

This suggests that the development activities within the watershed above locations C and D are not contributing to significant nutrient entrainment. This suggests that the erosion and sediment control measures and artificial wetlands that have been established at the site are effective in preventing significant nutrient entrainment into the surface waterways intersecting the site. By limiting the amount of nutrients entering Raff Creek and its tributary, algal blooms and the subsequent deterioration of physico-chemical water quality parameters has been controlled to aid in the preservation of the condition of the local aquatic and downstream marine ecosystems.

The concentrations of Chlorophyll-a from this reporting period are relatively consistent with the values recorded in previous reporting periods.

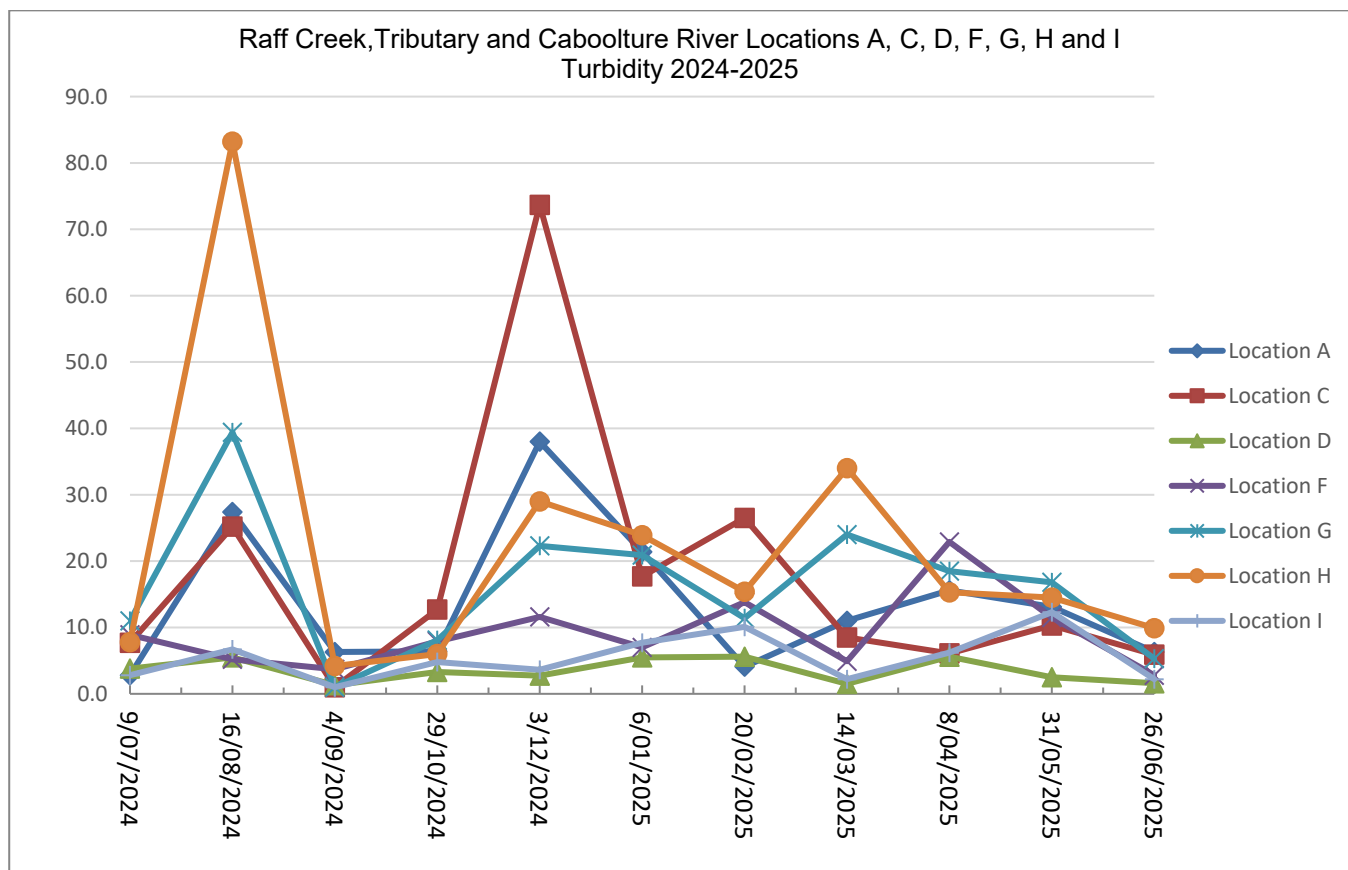
Turbidity

Turbidity readings taken during the 2024-2025 reporting period from the tidally influenced monitoring locations C, G and H exceeded the recommended middle estuary WQO (<8NTU) in over half of the sampling events. Turbidity readings exceeded the Turbidity WQO at location C on 7 events, on 9 events at location G and 8 events at location H. At the furthestmost downstream location (I), turbidity results were above the recommended WQO for two sampling events. Location D had no exceedances of the turbidity WQO during the reporting period.

The turbidity values recorded during this reporting period at freshwater locations A (upstream of location C) and F (upstream of location D) were all below the lowland freshwater WQO (<50NTU). Turbidity readings from locations A and F were comparable to the concentrations detected from the on-site tidally influenced downstream locations (C and D).

The results from the 2024-2025 reporting period at locations A, C, D, F, G, H and I are comparable to the baseline results collected in 2014-2016 from these locations. Graph 1 below presents the turbidity readings for all monitoring locations over the current reporting period.

Graph 1. Turbidity Readings – Locations A, C, D, F, G, H and I



pH

The results from sampling events conducted at upstream freshwater locations (A and F) were within the acceptable range for pH (pH 6.5 – 8.0) in all instances except for June 2025 at location F (pH 8.00). This is consistent with previous sampling rounds conducted at these locations during and pre-construction monitoring.

The pH values from monitoring locations G, H and I on the Caboolture River were all recorded to be within the acceptable WQO range (pH 7.0 – 8.4).

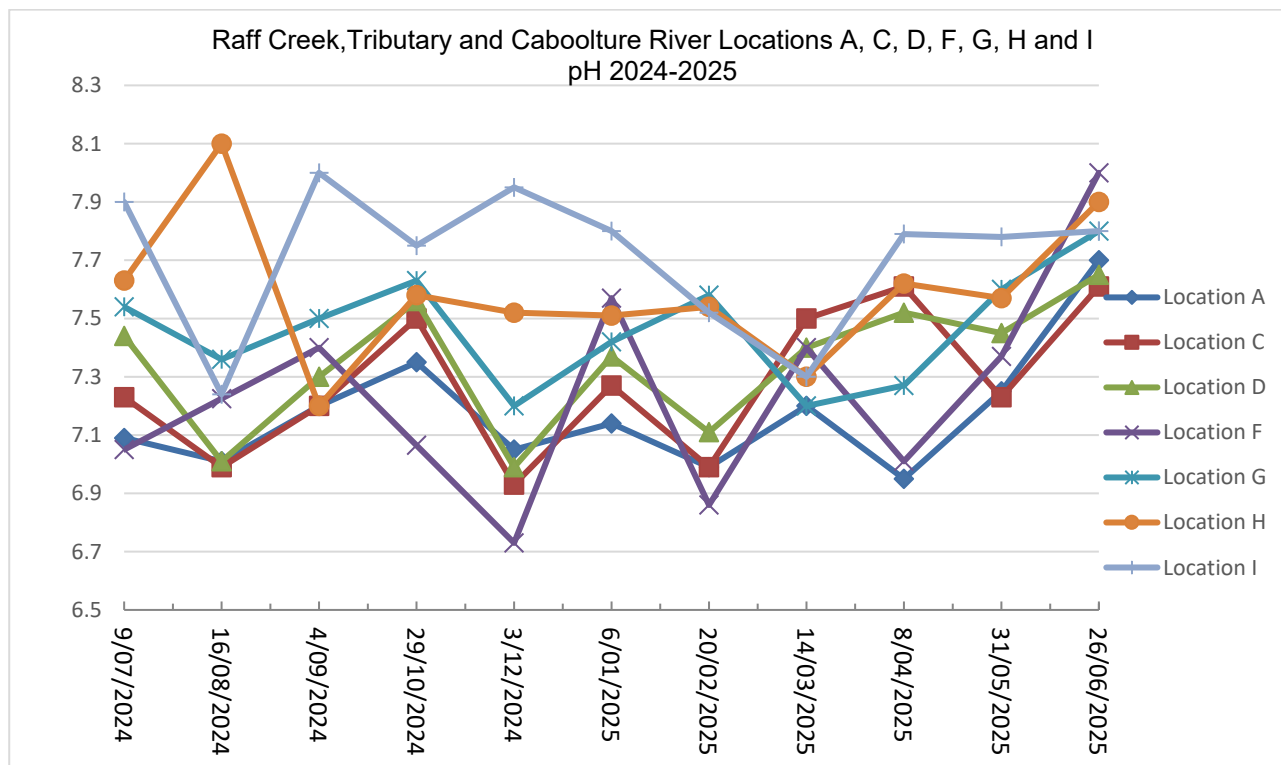
pH values recorded at the tidally influenced monitoring location on Raff Creek (location C) were recorded to be within the recommended WQOs for all but 3 sampling events in August 2024 (pH 6.99), December 2024 (pH 6.93) and February 2025 (pH 6.99). pH values recorded at the tidally influenced monitoring location on the Raff Creek tributary (location D) were recorded to be within the recommended WQOs for all but 1 sampling events in December 2024 (pH 6.99).

The exceedances of the pH WQO at locations C and D during this reporting period are of a lesser magnitude when compared to previous reporting periods and the baseline data collected pre-construction. For the upstream freshwater locations (A and F) and the Caboolture River upstream, midstream and downstream tidal locations (H, G and I), the pH data collected over the reporting period is consistent with the values obtained for these locations during the pre-construction monitoring and the previous reporting periods.

The pH results obtained over the reporting period indicate that disturbance of Acid Sulphate Soils (ASS) resulting from construction activities is unlikely to have occurred and construction activities has not impacted

the pH of the downstream surface water. Graph 2 below presents pH readings for each monitoring location over the reporting period.

Graph 2. pH Readings – Locations A, C, D, F, G, H and I.



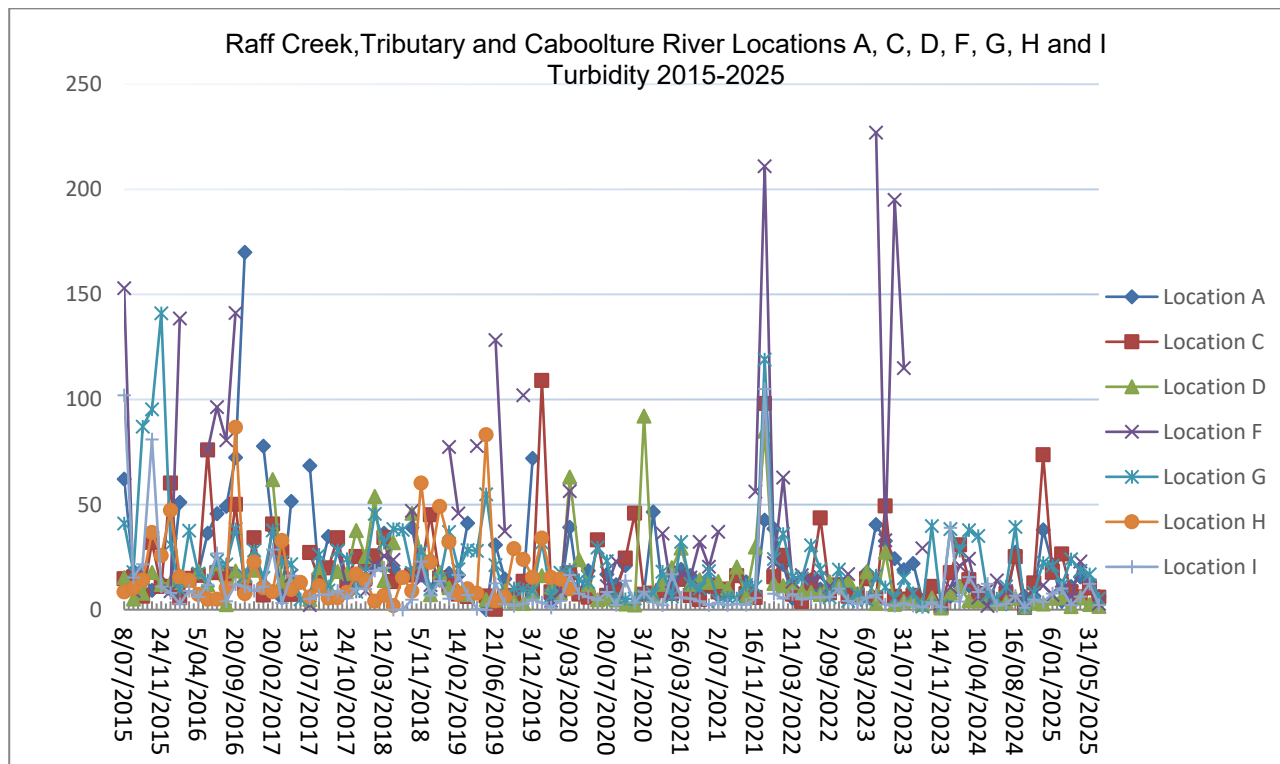
Historical Data Trends

A comparison of the field and analytical data presented in Tables 1 to 7 with the results from previous reporting periods indicates the results from samples collected during the 2024 -2025 reporting period were consistent with the data obtained during previous reporting periods. The number of exceedances of key WQOs identified at the tidally influenced locations were noted to be less frequent over the current reporting period compared to previous reporting periods and were generally consistent with the data obtained upstream of the construction works at locations A and F.

Historical Turbidity Trends

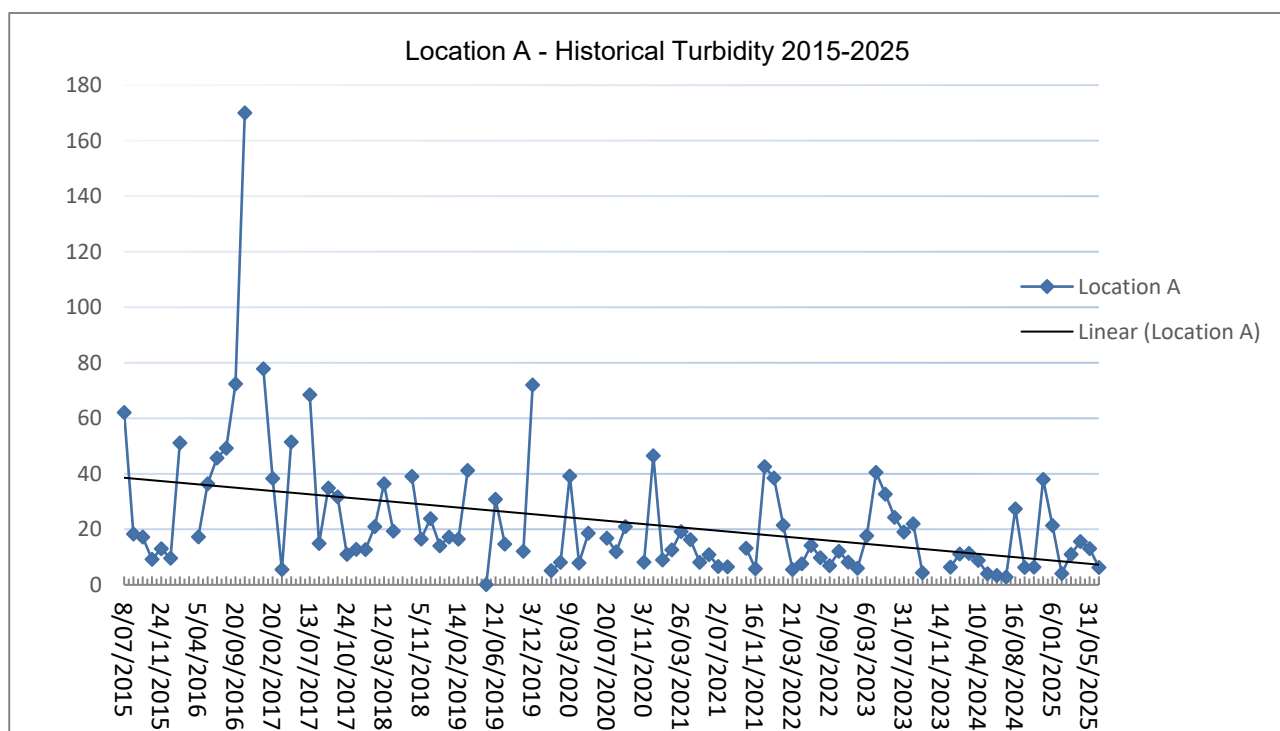
Historical turbidity measurements from all sampling locations (A, C, D, F, G, H and I) have been plotted to show the trend of turbidity over the total period of the development in Graph 3.

Graph 3. Historical Turbidity Readings and Linear Trend – Locations A, C D, F, G, H and I

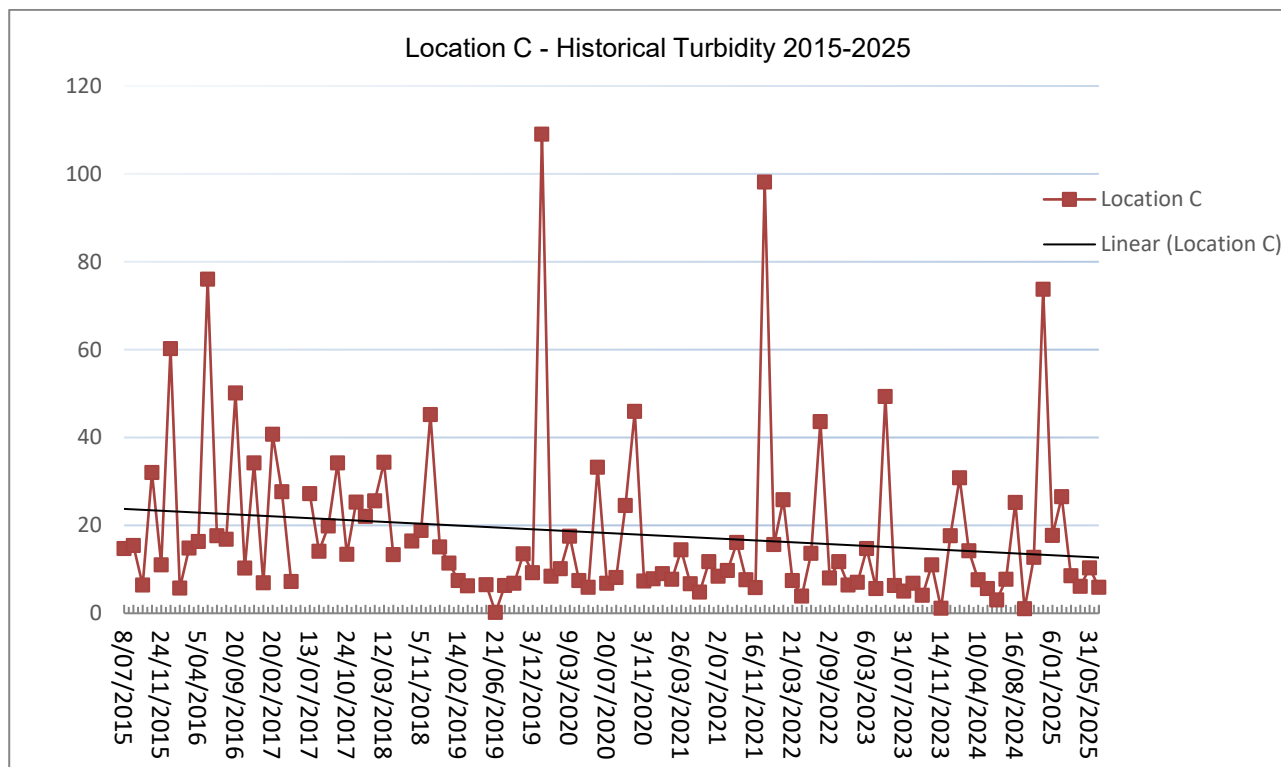


Historical turbidity measurements from each sampling location (A, C, D, F, G, H and I) have been plotted to show the trend of turbidity over the monitoring period of the development (2015-2025) in Graphs 4, 5, 6, 7, 8, 9 and 10 below.

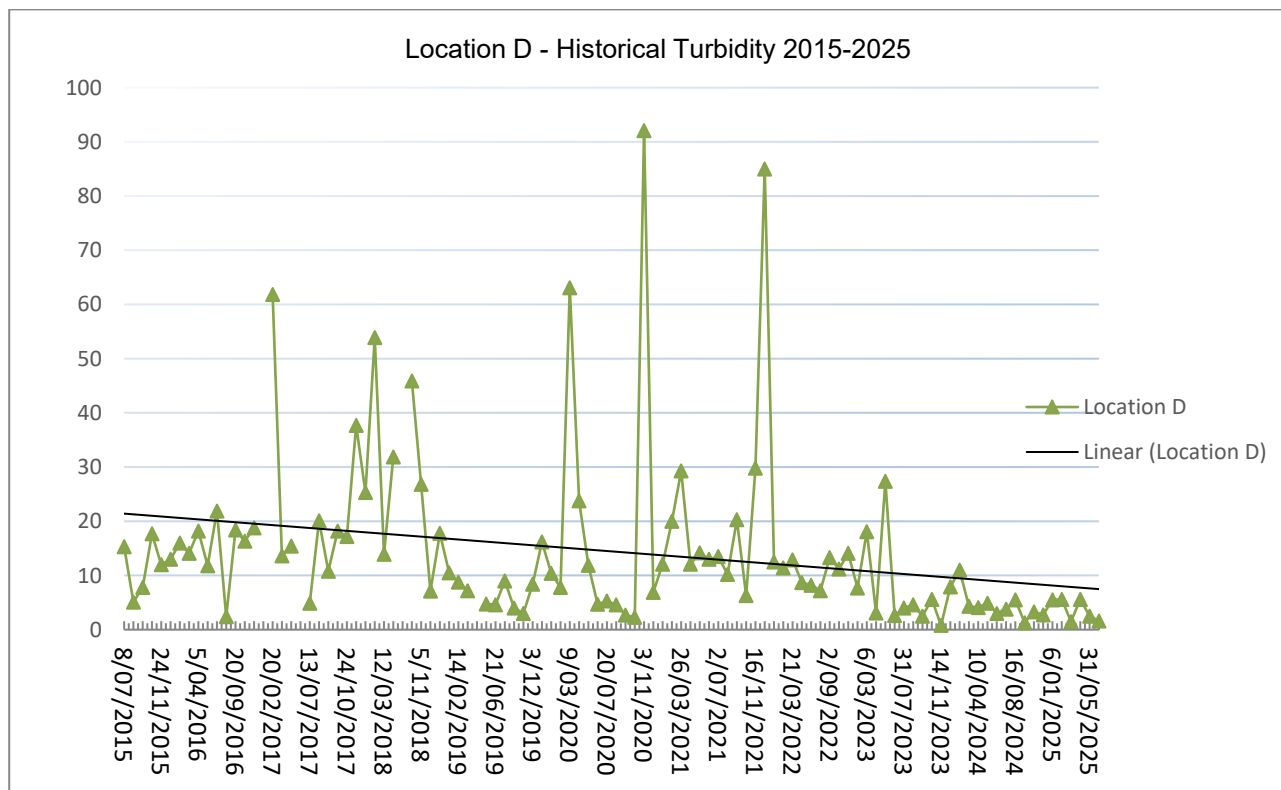
Graph 4. Historical Turbidity Readings and Linear Trend – Location A.



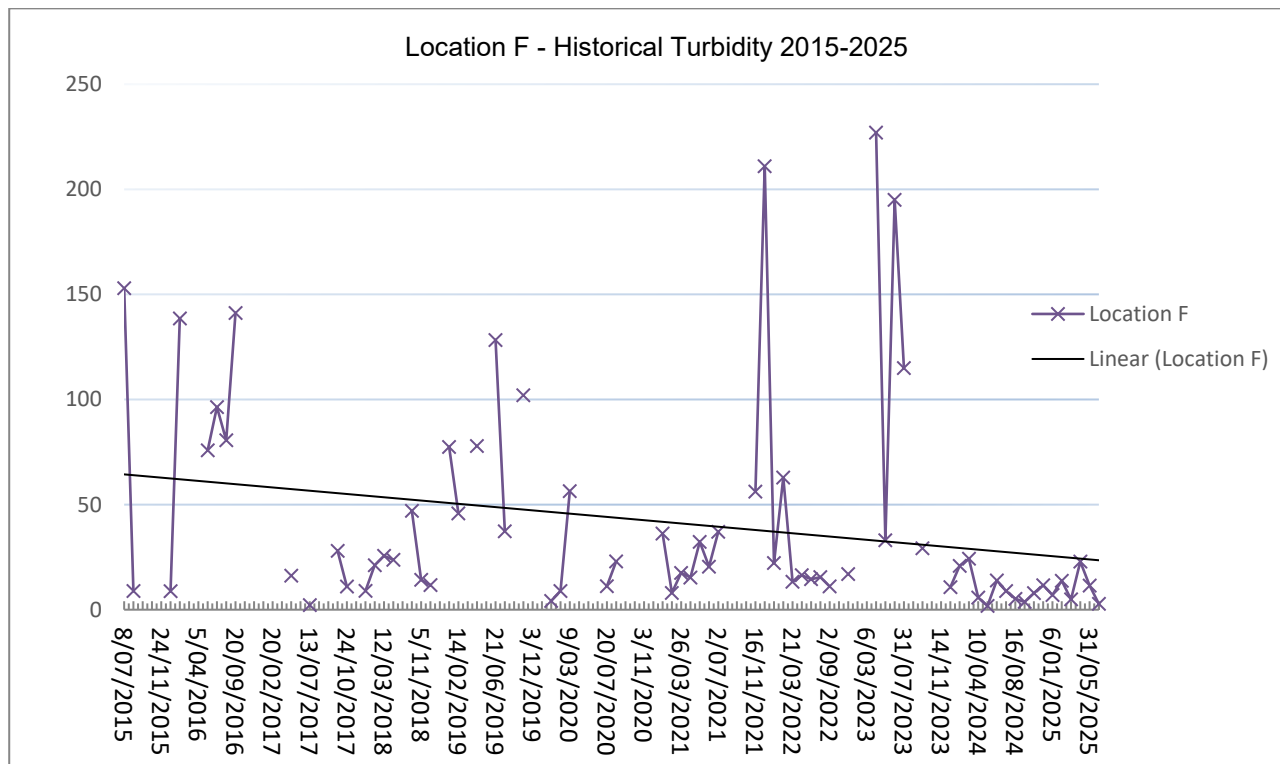
Graph 5. Historical Turbidity Readings and Linear Trend – Location C.



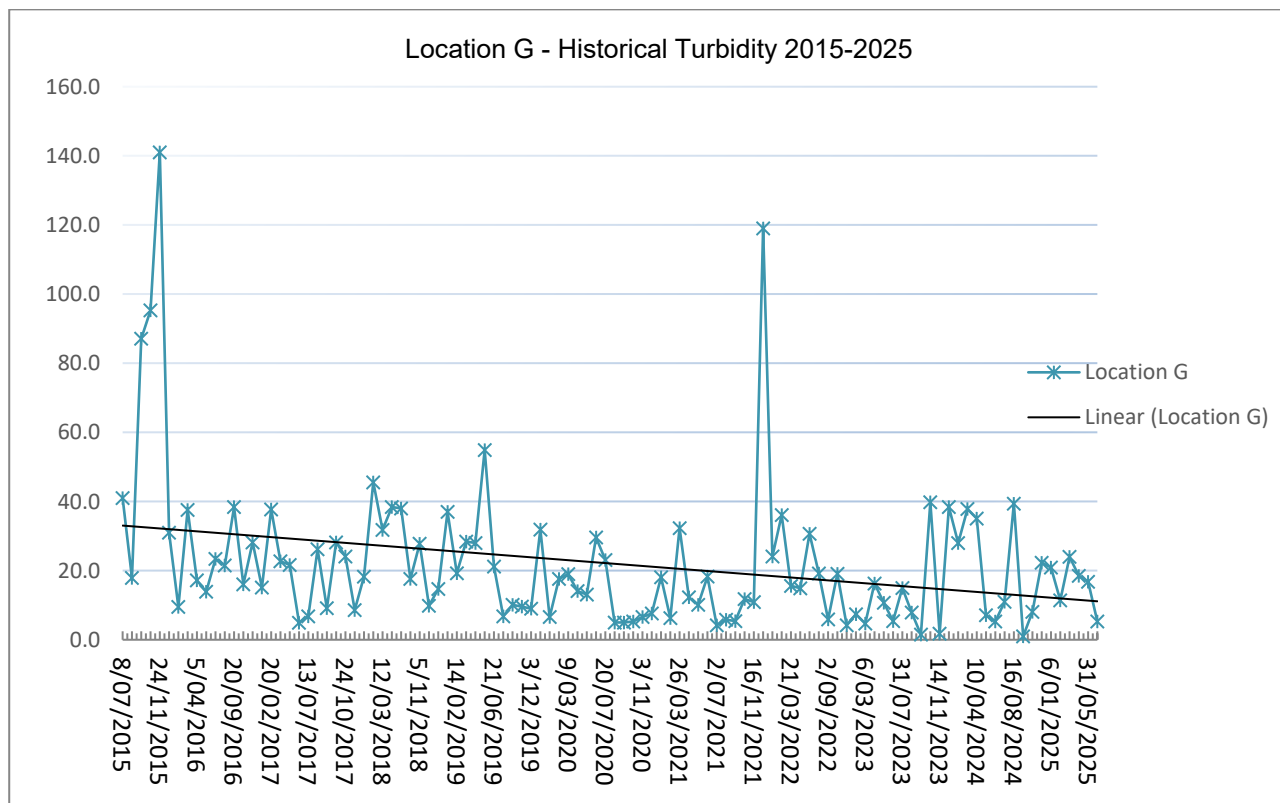
Graph 6. Historical Turbidity Readings and Linear Trend – Location D.



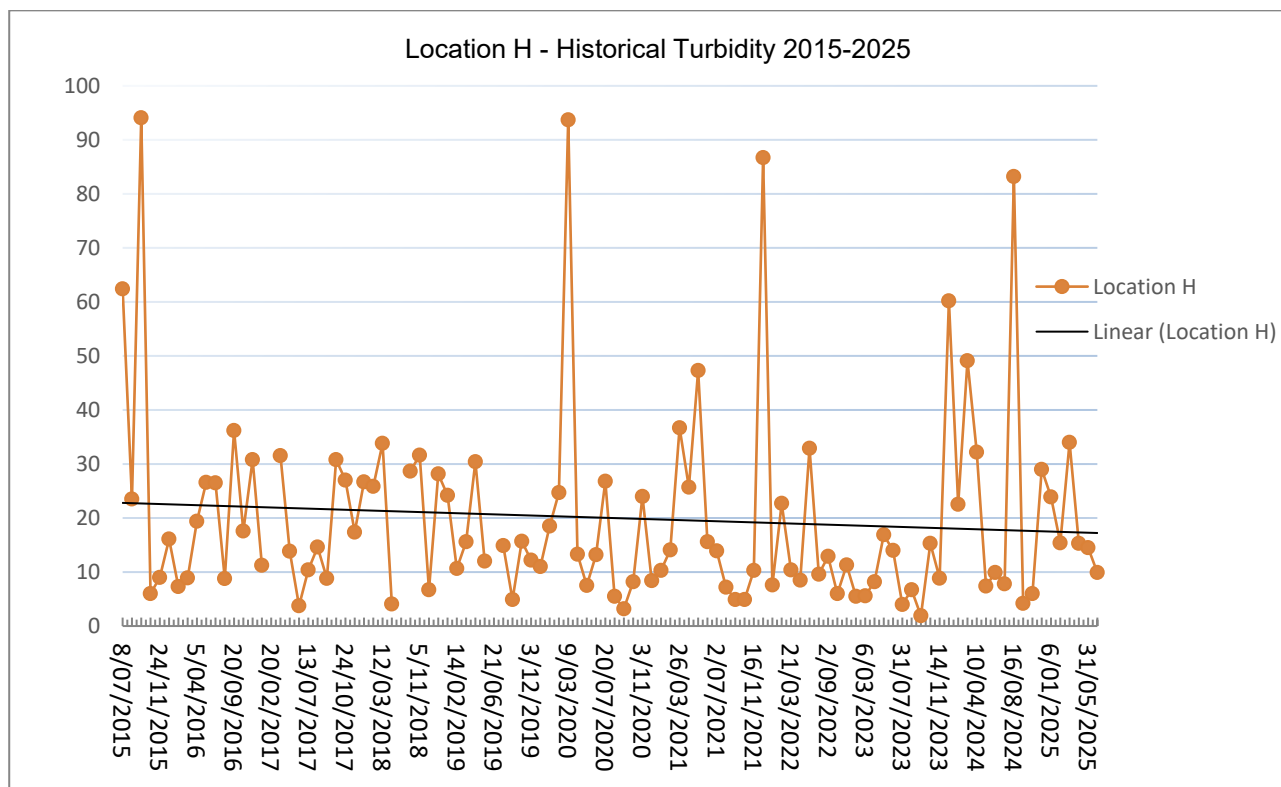
Graph 7. Historical Turbidity Readings and Linear Trend – Location F.



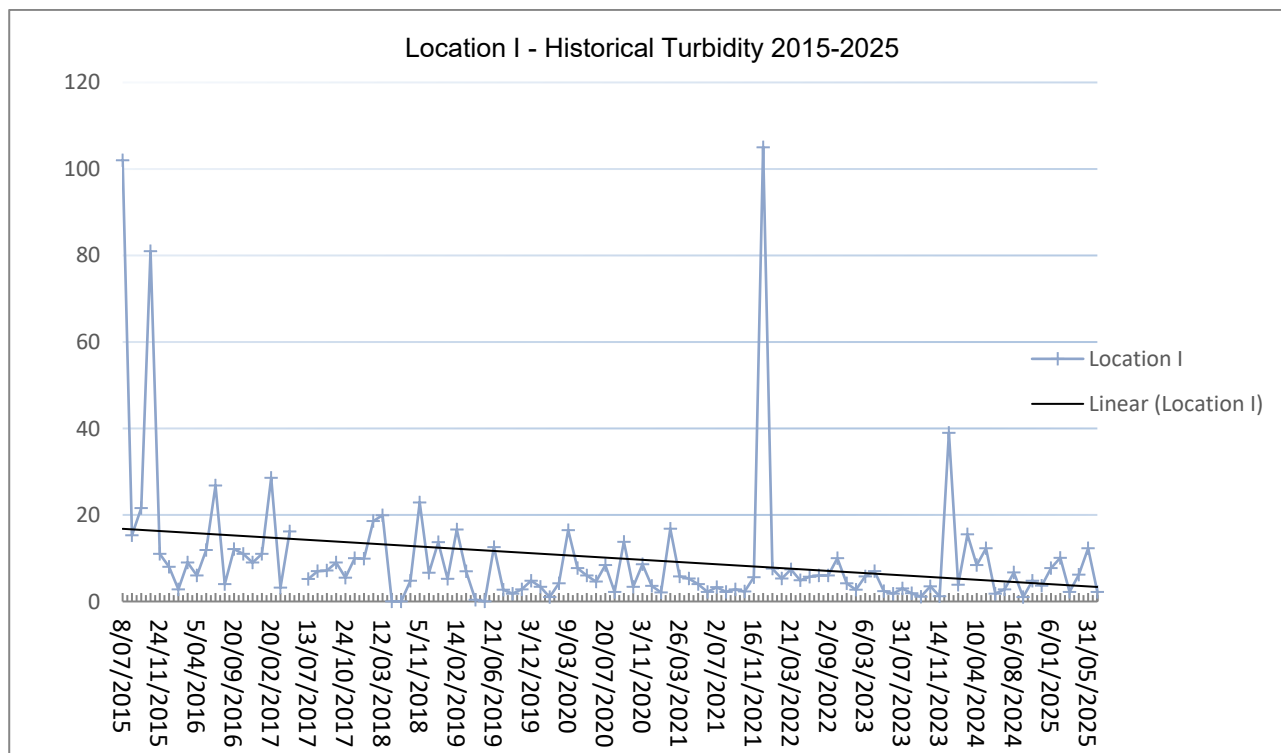
Graph 8. Historical Turbidity Readings and Linear Trend – Location G.



Graph 9. Historical Turbidity Readings and Linear Trend – Location H.



Graph 10. Historical Turbidity Readings and Linear Trend – Location I.

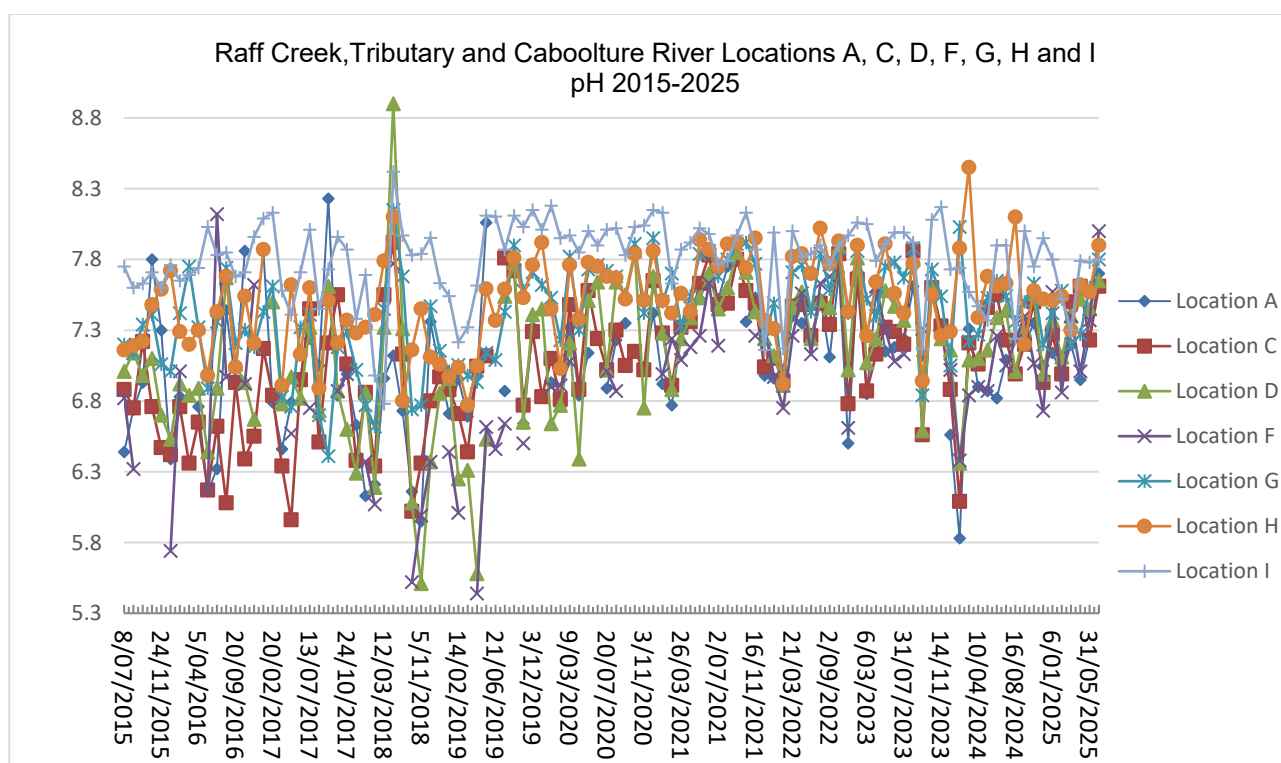


Graphs 3-10 demonstrate that turbidity readings taken prior to and during construction from all sampling locations (A, C, D, F, G, H and I) have decreased. The negative linear trend at Locations C and D demonstrate that the sediment and erosion control measures used during construction have been successful in improving or maintaining water clarity within Raff Creek and its tributary.

Historical Turbidity Trends

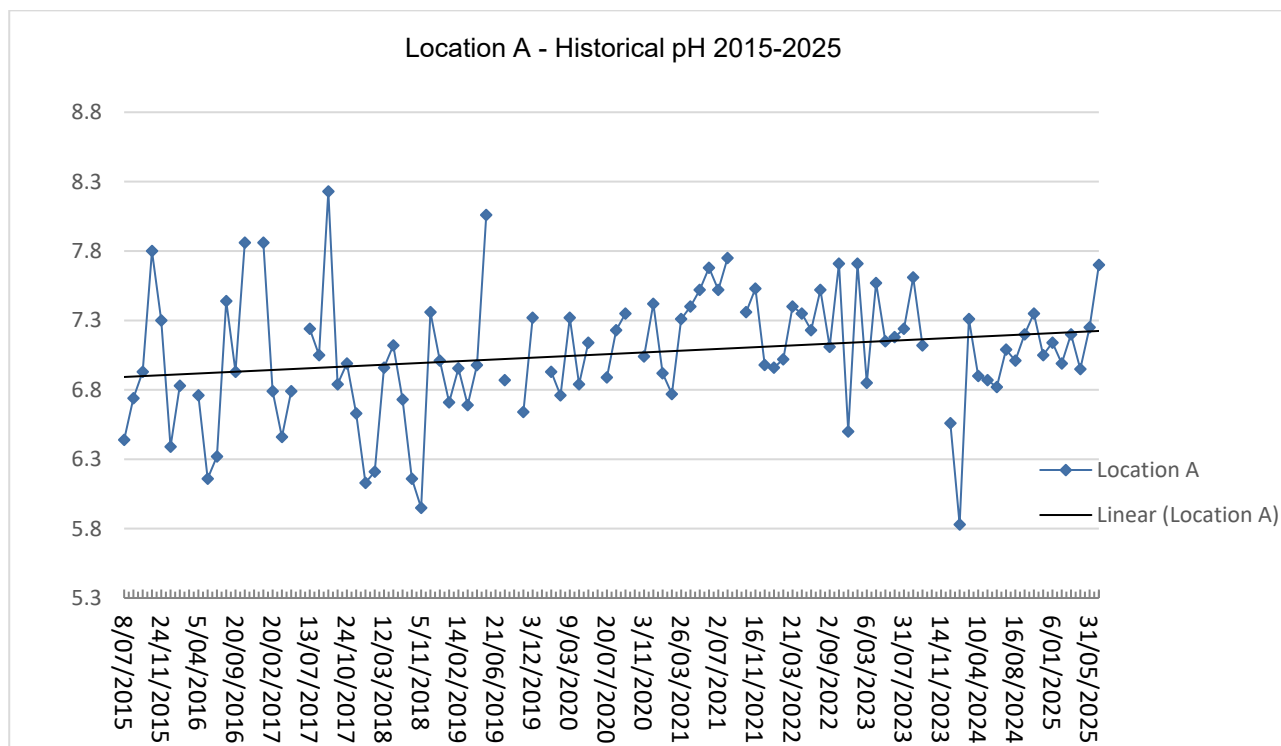
Historical pH measurements from all sampling locations (A, C, D, F, G, H and I) have been plotted to show the trend of pH prior to and during construction below in Graph 11.

Graph 11. Historical pH Readings and Linear Trend – Locations A, C, D, F, G, H and I.

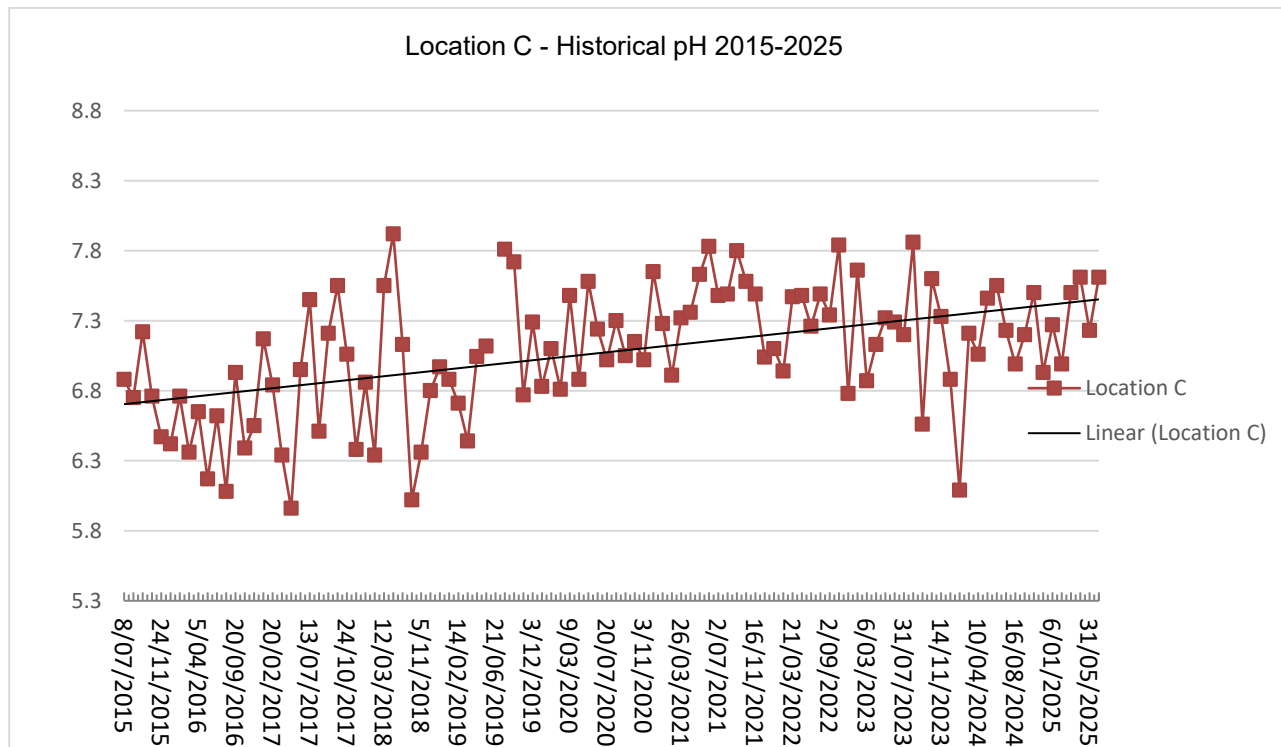


Historical pH measurements from each sampling location (A, C, D, F, G, H and I) have been plotted to show the trend of pH between 2015 and 2025 in Graphs 12, 13, 14, 15, 16, 17, and 18 below.

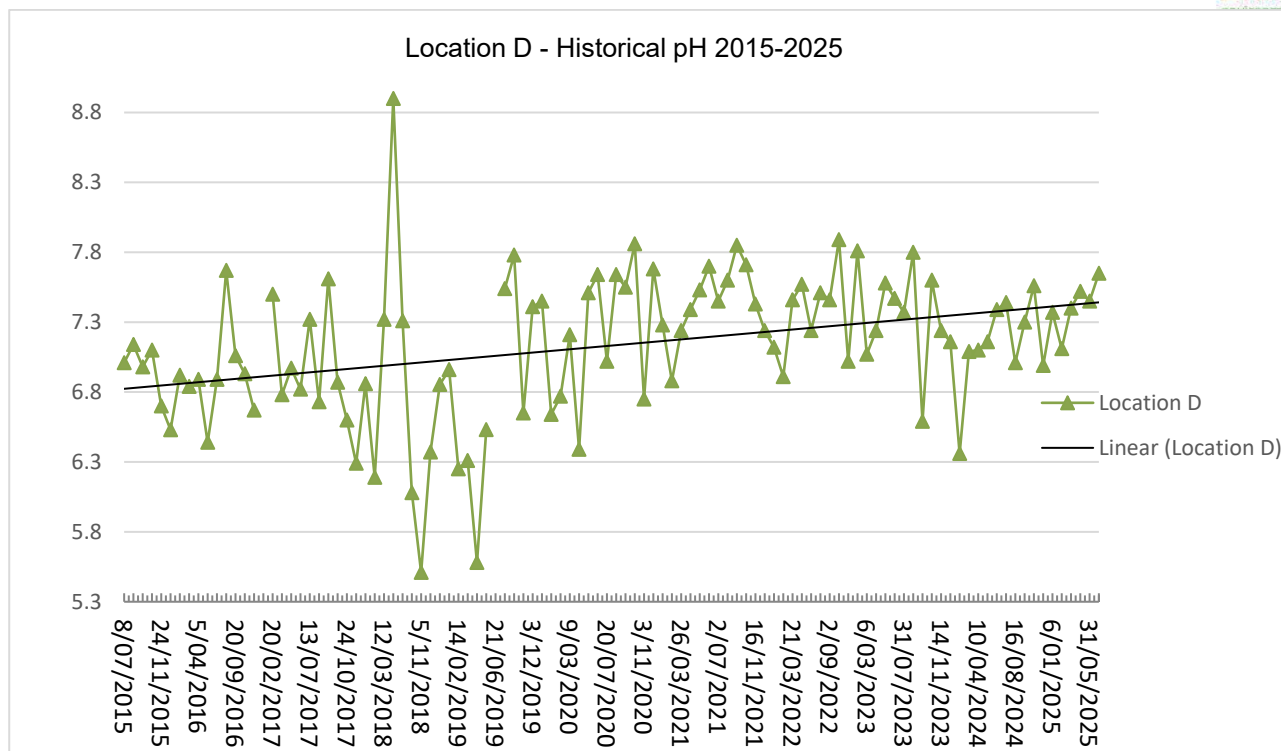
Graph 12. Historical pH Readings and Linear Trend – Location A.



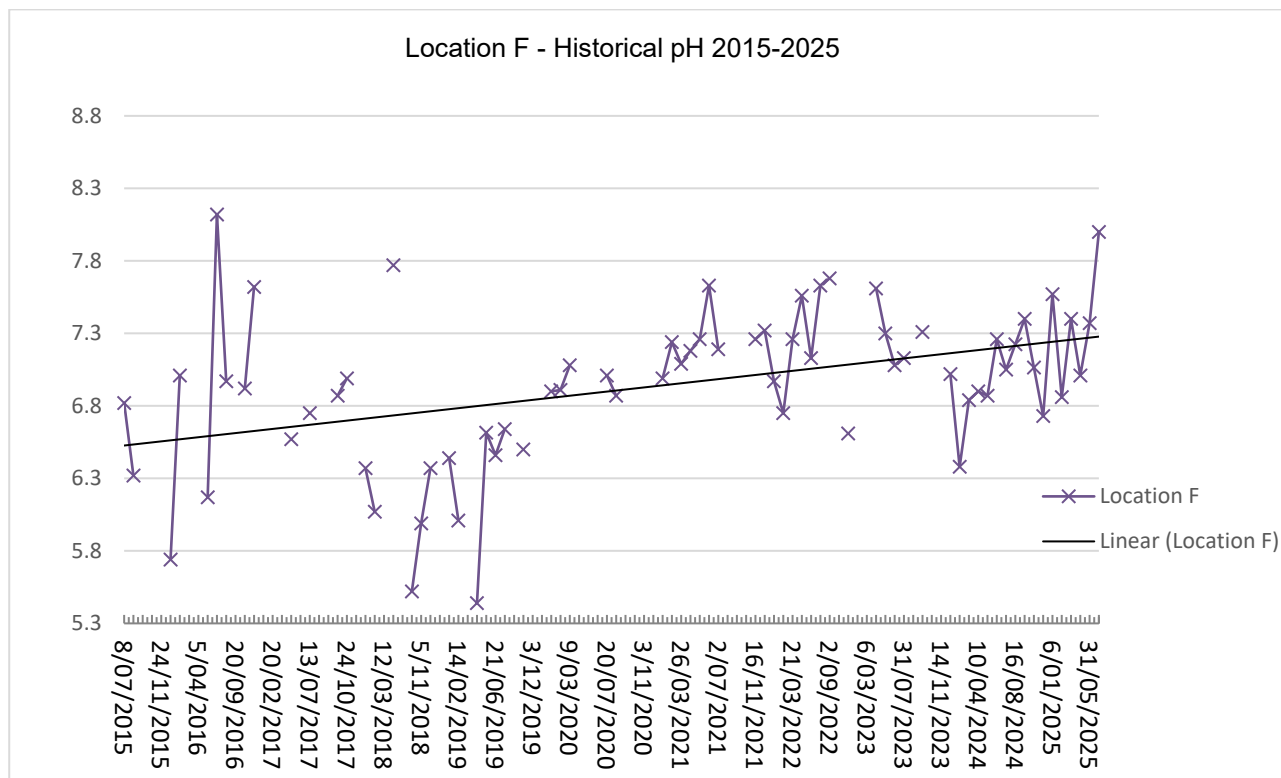
Graph 13. Historical pH Readings and Linear Trend – Location C.



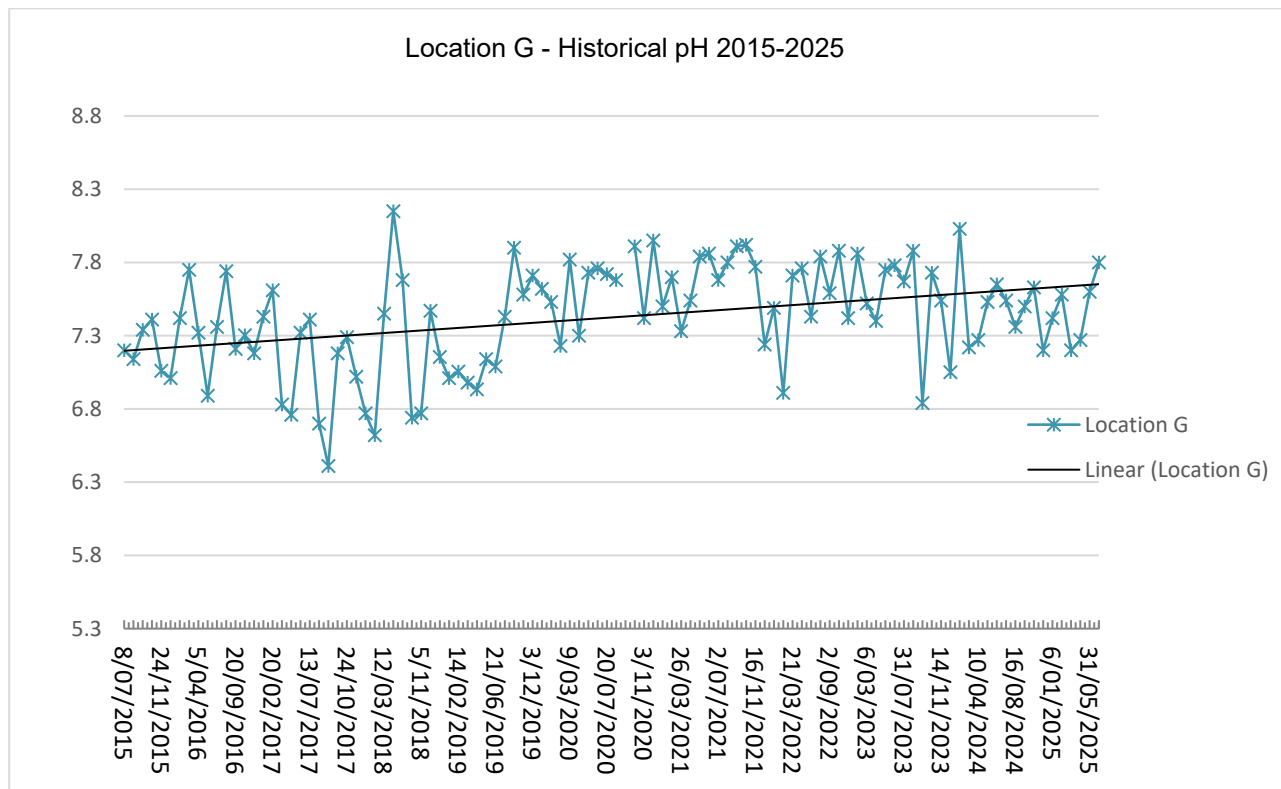
Graph 14. Historical pH Readings and Linear Trend – Location D.



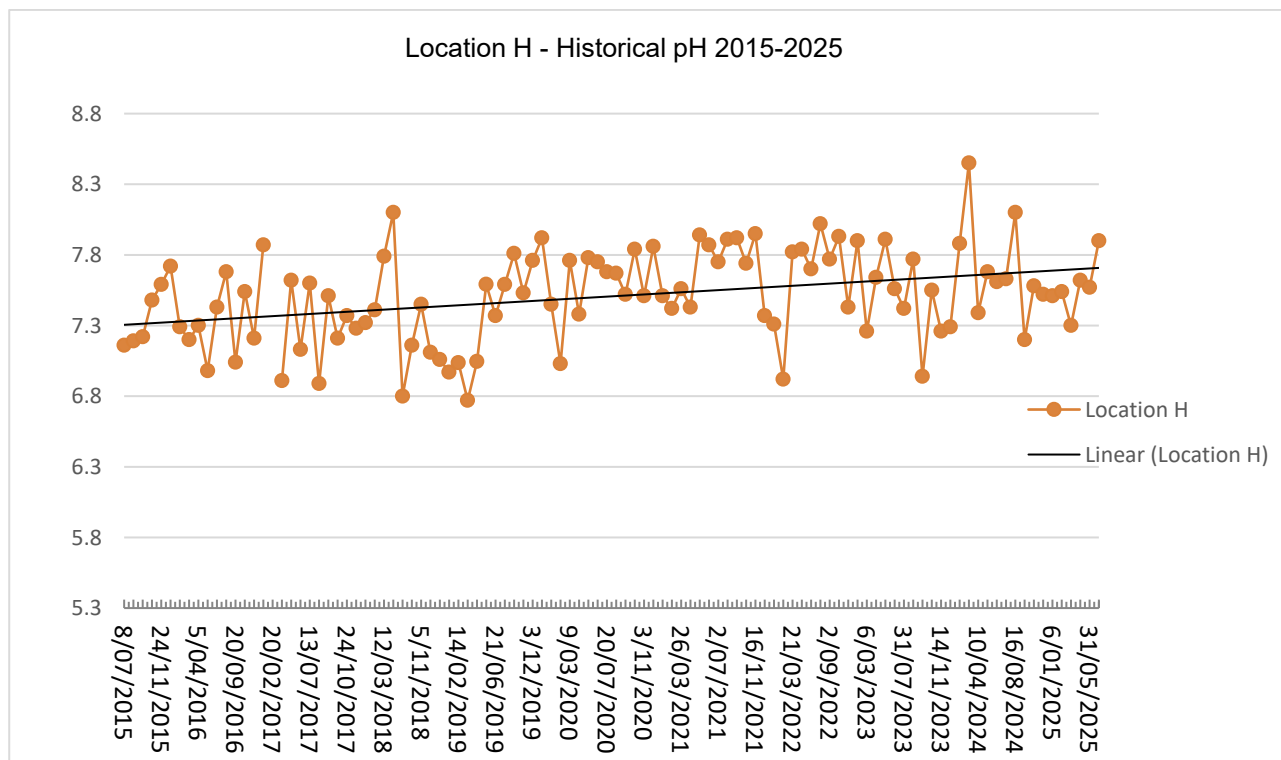
Graph 15. Historical pH Readings and Linear Trend – Location F.



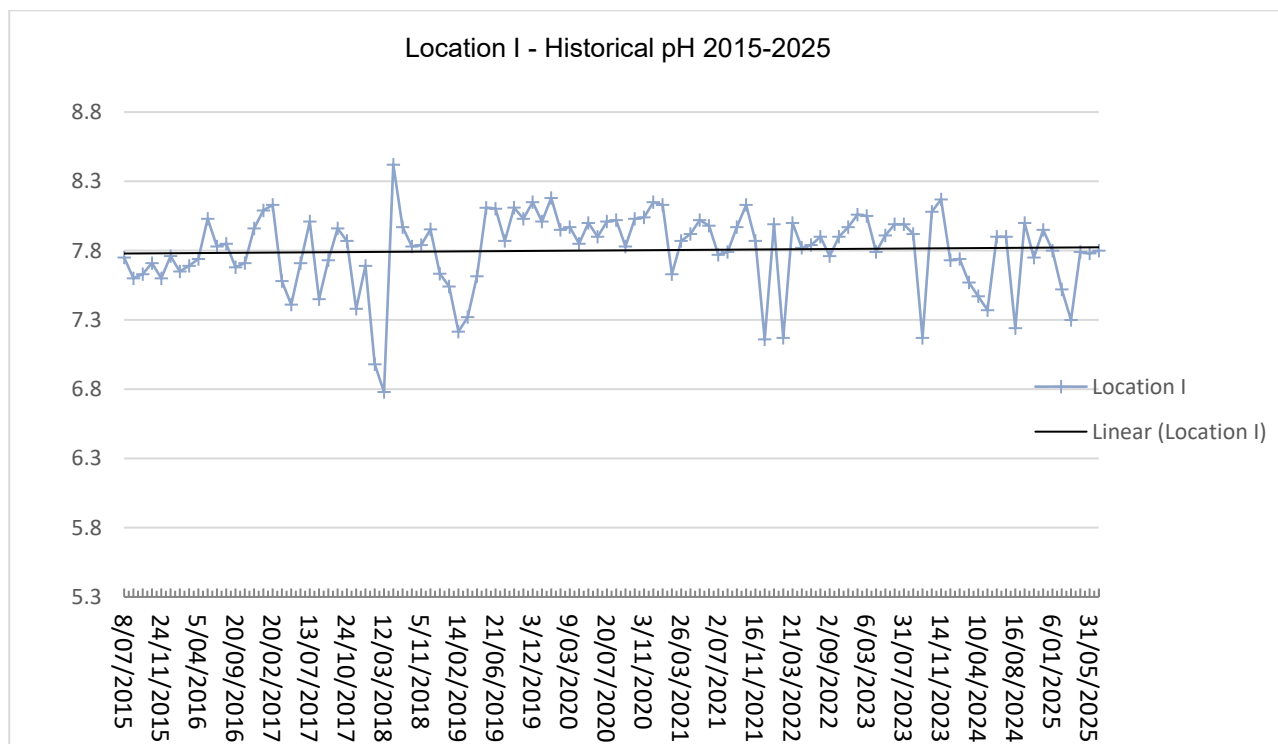
Graph 16. Historical pH Readings and Linear Trend – Location G.



Graph 17. Historical pH Readings and Linear Trend – Location H.



Graph 18. Historical pH Readings and Linear Trend – Location I.



Graphs 11 - 18 demonstrate the overall trend of increasing pH values at sampling locations A, C, D, F, G, H and I. The trend of increasing pH values in locations C and D provides evidence that if any disturbance of ASS has occurred during the development of the project, it has not impacted the pH of Raff Creek or its tributary. The trend of increasing pH from water samples collected from sampling locations C and D also suggests the management of ASS at the development site has been successful in mitigating any acidification of Raff Creek and its tributary over the duration of the project.

Conclusions

Based on the results presented in this report, it is evident that any impact to the quality of surface water, on and downstream of the site from past and current construction works has been mitigated. There is no evidence of any significant impact to surface water quality at or downstream of the site since the commencement of the North Harbour construction activities.

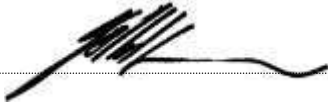
The number of exceedances of the pH WQO at locations C and D during this reporting period appear to be less frequent and to a lesser magnitude when compared to previous reporting periods and the baseline data collected pre- construction, suggesting an improvement of this key water quality indicator. The sediment and erosion control measures and the amelioration of any ASS/PASS disturbance employed by the bulk earthworks contractor are deemed satisfactory to minimise impact on surface water quality

Turbidity readings taken prior to and during construction from sampling locations within the site (A, C, D and F) have shown a decreasing trend. This suggests that the sediment and erosion control measures used during construction have been successful in reducing sediment entrainment into the local waterways which has improved or at minimum, maintained water clarity within Raff Creek and its tributary. pH measurements show an overall trend of increasing pH values at sampling locations A, C, D, F, G, H and I. The trend of increasing

pH values in locations C and D provides evidence that if any disturbance of ASS or PASS soils has occurred during the development of the project, it has not impacted the pH of Raff Creek or its tributary.

If you have any questions regarding this letter report, please contact the undersigned on 0401 671 624 or james@lithaqua.com

Yours sincerely,



James Hall-Brown

BSc (Environment)

Senior Environmental Scientist

Enclosures:

Tables

Table 1 – Location A – Water Quality Monitoring Data Summary

Table 2 – Location C – Water Quality Monitoring Data Summary

Table 3 – Location D – Water Quality Monitoring Data Summary

Table 4 – Location F – Water Quality Monitoring Data Summary

Table 5 – Location G – Water Quality Monitoring Data Summary

Table 6 – Location H – Water Quality Monitoring Data Summary

Table 7 – Location I – Water Quality Monitoring Data Summary

Figures

Figure 1 – On-Site Monitoring Locations

Figure 2 – External Water Quality Monitoring Locations

Photographs

Photograph 1 – Monitoring Location A

Photograph 2 – Monitoring Location C

Photograph 3 – Monitoring Location D

Photograph 4 – Monitoring Location F

Photograph 5 – Monitoring Location G

Photograph 6 – Monitoring Location H

Photograph 7 – Monitoring Location I

Laboratory Reports

EB2423346

1130024

1135997

EB2437378

1167203

EB2500269

E1180519

1198466

EB2518685

EB2522103



Tables

Table 1
Water Quality Monitoring Data Summary
Location A - Upstream Raff Creek
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Upstream Raff Creek	A	9/07/2024	2.8	18.1	53.5	226	7.09	Plastic wrapper	4
	A	16/08/2024	27.4	18.5	46.1	203.9	7.01	No	<5
	A	4/09/2024	6.3	20.9	95.91	260	7.20	No	<5
	A	29/10/2024	6.4	21.2	--	217	7.35	Foam beads	<2
	A	3/12/2024	38.0	26.3	24.1	180.1	7.05	No	<5
	A	6/01/2025	21.4	26.9	51	197	7.14	No	2
	A	20/02/2025	4.1	26.3	38.9	269.8	6.99	No	<5
	A	14/03/2025	11.0	24.2	77	180	7.20	Plastic bottle	<5
	A	8/04/2025	15.6	21	79.1	215	6.95	No	--
	A	31/05/2025	13.1	19.9	36.3	267	7.25	No	<1
	A	26/06/2025	6.3	19.1	57.9	268	7.70	No	3

Notes:

- "*" Recommended Water Quality Objectives from the Department of Environment and Heritage Protection (EHP) 'Queensland Water Quality Guidelines 2009' dated July 2013 and the Department of Environment and Resource Management (DERM) 'Environmental Protection (Water) Policy 2009 Caboolture River environmental values and water quality objectives Basin No. 142 (part), including all tributaries of Caboolture River' dated July 2010;
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Table 2
Water Quality Monitoring Data Summary
Location C - Midstream Raff Creek
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Midstream Raff Creek	C	9/07/2024	7.7	19.8	81	10400	7.23	No	1
	C	16/08/2024	25.2	19.0	78.3	355.4	6.99	Glass bottle	<5
	C	4/09/2024	1.0	21.4	98.1	24000	7.20	No	<5
	C	29/10/2024	12.7	25.6	--	13900	7.50	No	4
	C	3/12/2024	73.7	29.6	44.4	222.2	6.93	No	<5
	C	6/01/2025	17.7	28.4	55.1	323	7.27	Cardboard box	<1
	C	20/02/2025	26.5	30.2	59.2	15536	6.99	No	5.1
	C	14/03/2025	8.5	24.1	80	360	7.50	No	<5
	C	8/04/2025	6.1	21.3	79.4	4320	7.61	No	--
	C	31/05/2025	10.3	22.2	69.1	4760	7.23	No	<1
	C	26/06/2025	5.9	20.0	83.3	10600	7.61	No	1

Notes:

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Table 3
Water Quality Monitoring Data Summary
Location D - Midstream Raff Creek Tributary
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES	Lowland Freshwater		<50 NTU	-	85-110%	-	6.5-8.0	-	5
	Middle Estuary		<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Midstream Raff Creek Tributary	D	9/07/2024	3.8	19.2	86.4	973	7.44	No	1
	D	16/08/2024	5.5	18.6	60.4	248.6	7.01	No	<5
	D	4/09/2024	1.3	22.6	98.1	9900	7.30	Plastic bottle	<5
	D	29/10/2024	3.3	25.3	--	5770	7.56	Plastic bottle	3
	D	3/12/2024	2.7	28.2	32.2	210	6.99	No	41
	D	6/01/2025	5.5	27.1	57.5	250	7.37	No	5
	D	20/02/2025	5.6	25.7	43.6	981	7.11	No	6.5
	D	14/03/2025	1.5	25.6	89	410	7.40	No	7.1
	D	8/04/2025	5.6	21	78.6	1240	7.52	No	--
	D	3/105/2025	2.5	20.8	64.5	656	7.45	No	1
	D	26/06/2025	1.6	18.3	73.8	1630	7.65	No	<1

Notes:

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Table 4
Water Quality Monitoring Data Summary
Location F - Upstream Raff Creek Tributary
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Upstream Raff Creek Tributary	F	9/07/2024	8.9	19.0	58.9	333	7.05	No	4
	F	16/08/2024	Dry - sample not collected						
	F	4/09/2024	3.7	23.1	98.1	430	7.40	No	<5
	F	29/10/2024	Dry - sample not collected						
	F	3/12/2024	11.6	28.6	21.1	178	6.73	No	<5
	F	6/01/2025	7.0	28.2	48.7	384.0	7.57	No	2
	F	20/02/2025	13.8	27.0	37.1	471	6.86	No	54
	F	14/03/2025	4.9	23.9	70	210	7.40	No	39
	F	8/04/2025	22.9	20.6	68.1	270	7.01	No	--
	F	31/05/2025	11.5	19.1	37.6	343	7.37	No	<1
	F	26/06/2025	2.8	18.9	63.3	369	8.00	Plastic bottle	1

Notes:

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Table 5
Water Quality Monitoring Data Summary
Location G - Caboolture River
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS				Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Caboolture River	G	9/07/2024	11.0	19.3	85.4	37900	7.54	No	4
	G	16/08/2024	39.4	18.5	83.7	7093	7.36	No	<5
	G	4/09/2024	<1	22.9	99.1	42000	7.50	No	<5
	G	29/10/2024	8.1	26.2	--	34900	7.63	No	5
	G	3/12/2024	22.3	27.0	56.8	6273	7.20	No	<5
	G	6/01/2025	20.9	27.3	74.7	6340	7.42	No	2
	G	20/02/2025	11.4	29.1	84.0	16466	7.58	No	16
	G	14/03/2025	24.0	25.3	97	790	7.20	No	9.9
	G	8/04/2025	18.5	20.4	81.4	17510	7.27	No	--
	G	31/05/2025	16.8	20.1	69.5	24000	7.60	No	4
	G	26/06/2025	5.3	19.4	88.2	22600	7.80	No	5

Notes:

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Table 6
Water Quality Monitoring Data Summary
Location H - Caboolture River
North Harbour - Water Quality Monitoring - 2024/2025 Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Caboolture River	H	9/07/2024	7.8	18.4	74.8	6890	7.63	Wooden chair	4
	H	16/08/2024	83.2	17.9	92.8	278.7	8.10	No	14
	H	4/09/2024	4.2	19.9	99.1	6700	7.20	Plastic bags and bottles	<5
	H	29/10/2024	6.0	23.1	--	7300	7.58	No	3
	H	3/12/2024	29.0	26.7	71.5	252	7.52	Plastic bag	<5
	H	6/01/2025	23.9	27.8	73.6	270	7.51	Broken glass	3
	H	20/02/2025	15.4	28.8	63.1	819	7.54	Glass bottles	9
	H	14/03/2025	34.0	24.1	98	170	7.30	Glass bottle and aluminium cans	<5
	H	8/04/2025	15.3	21.8	82.4	2240	7.62	Glass bottles and plastic bags	--
	H	31/05/2025	14.5	20.1	68	10200	7.57	Plastic bottle	2
	H	26/06/2025	9.9	19.6	77.9	2280	7.90	Wodden pallet	11

Notes:

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Table 7
Water Quality Monitoring Data Summary
Location I - Caboolture River
North Harbour - Water Quality Monitoring - 2024/2025
Reporting Period
North Harbour, 44 Brooke Crescent, Burpengary East QLD

°WATER QUALITY PARAMETERS			Turbidity (NTU)	Temperature (C°)	Dissolved Oxygen (% Saturation)	Conductivity (µS/cm)	pH (-log[H+])	^Litter (>5mm)	Chlorophyll-a (mg/m³)
Laboratory Limit of Reporting (LOR)			0.1	-	0.1	1	0.01	-	1 mg/m³
*RECOMMENDED WATER QUALITY OBJECTIVES		Lowland Freshwater	<50 NTU	-	85-110%	-	6.5-8.0	-	5
		Middle Estuary	<8NTU	-	85-105%	-	7.0 - 8.4	-	4
Location	Sample ID	Date							
Caboolture River	I	9/07/2024	2.8	18.9	95	48700	7.90	Fishing line and plastic wrapper	2
	I	16/08/2024	6.7	19.2	84.6	16653	7.24	plastic bottles	<5
	I	4/09/2024	1	20.1	100.2	53000	8.00	Bait packet and glass bottles	<5
	I	29/10/2024	4.8	25.7	-	46400	7.75	No	3
	I	3/12/2024	3.6	28.6	99.7	27491	7.95	No	13
	I	6/01/2025	7.7	29	101	31000	7.80	Fishing line	4
	I	20/02/2025	10.1	27.9	66.7	43205	7.52	No	<5
	I	14/03/2025	2.2	26.8	99	9000	7.30	Glass bottles and plastic bag	<5
	I	8/04/2025	6.2	23.6	89.4	34590	7.79	No	-
	I	31/05/2025	12.3	20.8	84.5	45500	7.78	plastic bottles	2
	I	26/06/2025	2.2	18.4	99	49400	7.80	No	<1

Notes:

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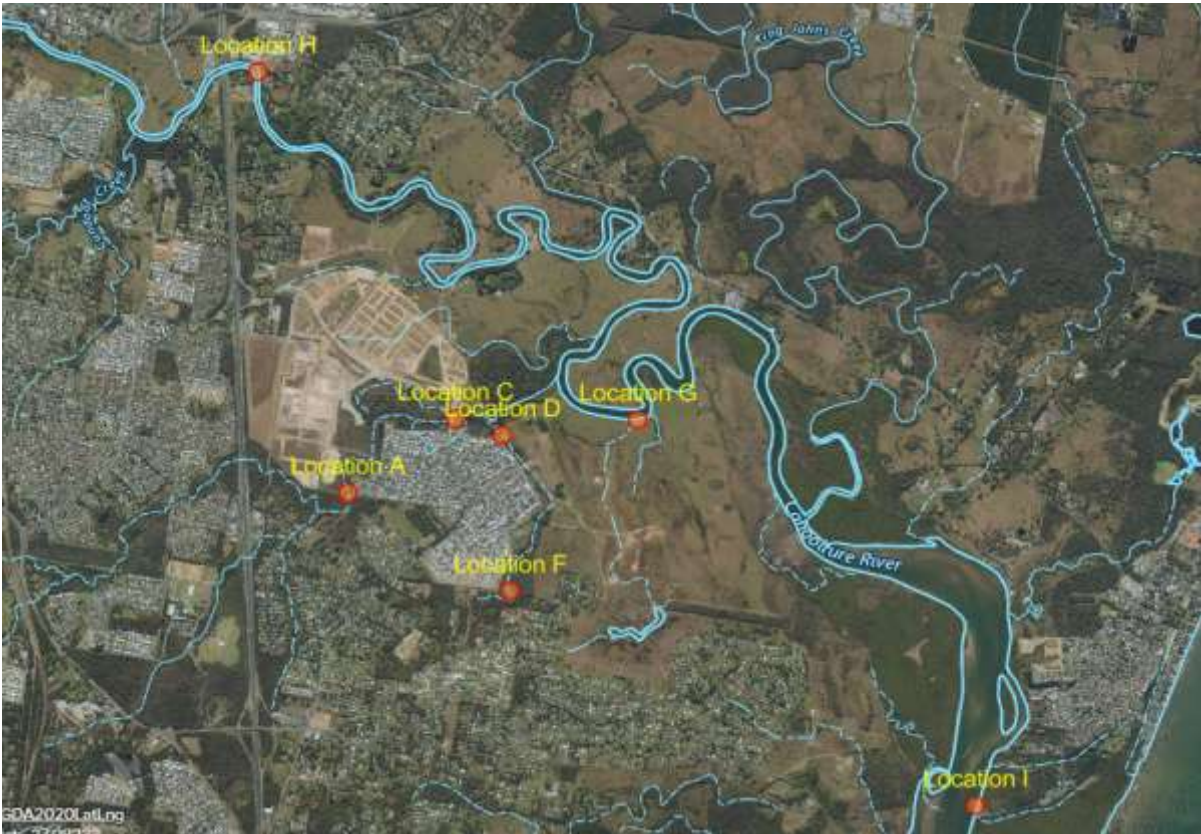


Figures

Figure 1: Site Water Quality Monitoring Locations



Figure 2: External and Site Water Quality Monitoring Locations



Photographs

Photograph 1: A photograph of Location A in September 2024



Photograph 2: Location C taken in August 2024.



Photograph 3: Location D in February 2025.



Photograph 4: A photograph of Location F taken in December 2023.



Photograph 6: This photograph was taken from Location G in August 2024.



Photograph 7: Location H taken in May 2025.



Photograph 8: This photograph was taken in January 2025 showing Location I.





Laboratory Reports



CERTIFICATE OF ANALYSIS

Work Order : **EB2423346**
Client : **LITHAQUA ENVIRONMENTAL SERVICES**
Contact : **MR JAMES HALL-BROWN**
Address :
PEREGIAN BEACH
Telephone : 07 3191 9038
Project : NHH SURFACE WATER
Order number : ----
C-O-C number : ----
Sampler : JAMES HALL-BROWN
Site : NHH
Quote number : EN/222
No. of samples received : 7
No. of samples analysed : 7

Page : 1 of 4
Laboratory : Environmental Division Brisbane
Contact : Customer Services EB
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3243 7222
Date Samples Received : 09-Jul-2024 15:03
Date Analysis Commenced : 09-Jul-2024
Issue Date : 24-Jul-2024 11:26



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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. are fully validated and are often at the client request.

In house developed procedures

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.

- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	A	C	D	F	G
Sampling date / time					09-Jul-2024 00:00	09-Jul-2024 00:00	09-Jul-2024 00:00	09-Jul-2024 00:00	09-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		EB2423346-001	EB2423346-002	EB2423346-003	EB2423346-004	EB2423346-005
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.09	7.23	7.44	7.05	7.54
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		226	10400	973	333	37900
EA045: Turbidity									
Turbidity	----	0.1	NTU		2.8	7.7	3.8	8.9	11.0
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		4	1	1	4	4
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen - % Saturation	----	0.1	% saturation		53.5	81.0	86.4	58.9	85.4



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	H	I	----	----	----
Sampling date / time					09-Jul-2024 00:00	09-Jul-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2423346-006	EB2423346-007	-----	-----	-----
				Result	Result		----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.63	7.90	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		6890	48700	----	----	----
EA045: Turbidity									
Turbidity	----	0.1	NTU		7.8	2.8	----	----	----
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		4	2	----	----	----
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen - % Saturation	----	0.1	% saturation		74.8	95.0	----	----	----

Mandatory Fields		CHAIN OF CUSTODY										Page <u>1</u> of <u>1</u>																																																																																																																																																																																																																																																																																																																	
CLIENT CODE: <u>LITENV</u>		*PROJECT MANAGER: <u>JAMES HALL-BROWN</u>		SAMPLER: <u>JAMES HALL-BROWN</u>						CoC #: (if applicable)																																																																																																																																																																																																																																																																																																																			
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*INVOICE TO: (client default if nil) <u>james@lithaqua.com</u>		☐ CC Invoice to PM										BIOSECURITY																																																																																																																																																																																																																																																																																																																	
*EMAIL REPORTS TO: (default to PM if blank) <u>"</u>		*ANALYSIS REQUIRED (NHH ALS Quote No. and/or Analysis Safe Codes must be listed to attract subquoted price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.																																																																																																																																																																																																																																																																																																																											
*STORAGE REQUIREMENTS Please check box ☒ Standard Storage ☐ Extended Storage Standard Storage time from receipt of samples: Waters - 3 weeks Soils - 2 months Specify Disposal Dates: Note: Extended storage incurs a fee and requires a signed agreement.		*TURNAROUND Please check box ☒ 5+ days (no surcharge) ☐ 3 day (+15%) ☐ 2 day (+30%) ☐ 1 day (+50%) (Not all tests can be expedited, contact Client Services for more information)		MATRIX: Soil/Solid(S), Water(W), Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS) <u>PH</u> <u>F.C.</u> <u>DO (% OXY)</u> <u>TURBIDITY</u> <u>CALCOPHYLLIN</u>										Country of Origin: (if not Australia) Environmental Division Brisbane Work Order Reference EB2423346 Telephone: +61-7-3243 7229																																																																																																																																																																																																																																																																																																															
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Receipt Detail (Lab Use ONLY) Chilling Method: <u>Frozen / Melted</u> Ice: <u>Frozen / Thawed</u> Ice Bricks: <u>None</u> Sample Temp at Receipt: <u> </u> °C		Security Seal Intact (circle) <u>Yes / No / N/A(None)</u>		Carrier Details: <u> </u> Con Note #: <u> </u>		☐ Courier/Post ☒ Client		Packaging: (Circle) Count: <u> </u>		Hard Esky: <u> </u> Foam Esky: <u> </u> BowBag/Other: <u> </u>																																																																																																																																																																																																																																																																																																																			
Relinquished by: <u>J. HALL-BROWN</u> Signature: <u>[Signature]</u> Date/Time: <u>15:00 9/7/24</u>		Relinquished by: <u>NW</u> Signature: <u>[Signature]</u> Date/Time: <u> </u>		Relinquished by: <u> </u> Signature: <u> </u> Date/Time: <u> </u>		Relinquished by: <u> </u> Signature: <u> </u> Date/Time: <u> </u>		Relinquished by: <u> </u> Signature: <u> </u> Date/Time: <u> </u>		Relinquished by: <u> </u> Signature: <u> </u> Date/Time: <u> </u>																																																																																																																																																																																																																																																																																																																			



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2423346**

Client : **LITHAQUA ENVIRONMENTAL SERVICES**

Laboratory : Environmental Division Brisbane

Contact : **MR JAMES HALL-BROWN**

Contact : Customer Services EB

Address :
PEREGIAN BEACH

Address : 2 Byth Street Stafford QLD Australia
4053

E-mail : james@lithaqua.com

E-mail : ALSEnviro.Brisbane@alsglobal.com

Telephone : 07 3191 9038

Telephone : +61-7-3243 7222

Facsimile : ----

Facsimile : +61-7-3243 7218

Project : NHH SURFACE WATER

Page : 1 of 2

Order number : ----

Quote number : EB2017LITENV0001 (EN/222)

C-O-C number : ----

QC Level : NEPM 2013 B3 & ALS QC Standard

Site : NHH

Sampler : JAMES HALL-BROWN

Dates

Date Samples Received : 09-Jul-2024 15:03

Issue Date : 09-Jul-2024

Client Requested Due Date : 16-Jul-2024

Scheduled Reporting Date : **16-Jul-2024**

Delivery Details

Mode of Delivery : Client Drop Off

Security Seal : Not Available

No. of coolers/boxes : 1

Temperature : 10.1, 8.3, 11.0°C - Ice
present

Receipt Detail : ESKY

No. of samples received / analysed : 7 / 7

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months $\pm$ 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**



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 - EA005P pH (Auto Titrator)	WATER - EA010P Electrical Conductivity (Auto Titrator)	WATER - EA045 Turbidity	WATER - EP008 Chlorophyll a	WATER - EP025 DO and Saturation% DO and DO Saturation%
EB2423346-001	09-Jul-2024 00:00	A	✓	✓	✓	✓	✓
EB2423346-002	09-Jul-2024 00:00	C	✓	✓	✓	✓	✓
EB2423346-003	09-Jul-2024 00:00	D	✓	✓	✓	✓	✓
EB2423346-004	09-Jul-2024 00:00	F	✓	✓	✓	✓	✓
EB2423346-005	09-Jul-2024 00:00	G	✓	✓	✓	✓	✓
EB2423346-006	09-Jul-2024 00:00	H	✓	✓	✓	✓	✓
EB2423346-007	09-Jul-2024 00:00	I	✓	✓	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

JAMES HALL-BROWN

- *AU Certificate of Analysis - NATA (COA)	Email	james@lithaqua.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	james@lithaqua.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	james@lithaqua.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	james@lithaqua.com
- A4 - AU Tax Invoice (INV)	Email	james@lithaqua.com
- Chain of Custody (CoC) (COC)	Email	james@lithaqua.com
- EDI Format - XTab (XTAB)	Email	james@lithaqua.com



QUALITY CONTROL REPORT

Work Order	: EB2423346	Page	: 1 of 3
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: PEREGIAN BEACH	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 3191 9038	Telephone	: +61-7-3243 7222
Project	: NHH SURFACE WATER	Date Samples Received	: 09-Jul-2024
Order number	: ----	Date Analysis Commenced	: 09-Jul-2024
C-O-C number	: ----	Issue Date	: 24-Jul-2024
Sampler	: JAMES HALL-BROWN		
Site	: NHH		
Quote number	: EN/222		
No. of samples received	: 7		
No. of samples analysed	: 7		



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
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 5912775)									
EB2423354-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.37	6.44	1.1	0% - 20%
EB2423178-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.40	7.37	0.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 5912776)									
EB2423354-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1790	1800	0.4	0% - 20%
EB2423178-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	5930	5980	0.9	0% - 20%
EA045: Turbidity (QC Lot: 5912366)									
EB2423346-001	A	EA045: Turbidity	----	0.1	NTU	2.8	2.8	0.0	0% - 20%
EP025: Oxygen - Dissolved (DO) (QC Lot: 5912359)									
EB2423122-001	Anonymous	EP025: Dissolved Oxygen - % Saturation	----	0.1	% saturation	112	112	0.0	0% - 20%



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) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5912775)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.0	102
				----	7 pH Unit	100	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 5912776)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	220 µS/cm	99.4	90.0	106
				<1	12890 µS/cm	96.4	90.0	106
EA045: Turbidity (QCLot: 5912366)								
EA045: Turbidity	----	0.1	NTU	<0.1	4 NTU	104	90.0	110
				<0.1	40 NTU	102	90.0	110
				<0.1	400 NTU	102	90.0	110
EP008: Chlorophyll (QCLot: 5915777)								
EP008: Chlorophyll a	----	1	mg/m³	<1	19 mg/m³	97.9	95.0	105

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2423346	Page	: 1 of 5
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Telephone	: +61-7-3243 7222
Project	: NHH SURFACE WATER	Date Samples Received	: 09-Jul-2024
Site	: NHH	Issue Date	: 24-Jul-2024
Sampler	: JAMES HALL-BROWN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

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.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: WATER

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	10-Jul-2024	09-Jul-2024	1
D,	F,						
G,	H,						
I							

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	
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P) A, D, G, I	C, F, H,	09-Jul-2024	----	----	----	10-Jul-2024	09-Jul-2024	✖
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P) A, D, G, I	C, F, H,	09-Jul-2024	----	----	----	10-Jul-2024	06-Aug-2024	✔
EA045: Turbidity								
Clear Plastic Bottle - Natural (EA045) A, D, G, I	C, F, H,	09-Jul-2024	----	----	----	09-Jul-2024	11-Jul-2024	✔

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
EP008: Chlorophyll a & Pheophytin a								
White Plastic Bottle - Unpreserved (EP008)		09-Jul-2024	----	----	----	10-Jul-2024	11-Jul-2024	✓
A,	C,							
D,	F,							
G,	H,							
I								
EP025: Oxygen - Dissolved (DO)								
Clear Plastic Bottle - Natural (EP025)		09-Jul-2024	----	----	----	09-Jul-2024	09-Jul-2024	✓
A,	C,							
D,	F,							
G,	H,							
I								



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)							
Conductivity by Auto Titrator	EA010-P	2	16	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	8	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chlorophyll a and Pheophytin a	EP008	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	16	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	3	8	37.50	15.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chlorophyll a and Pheophytin a	EP008	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	8	12.50	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Turbidity	EA045	WATER	In house: Referenced to APHA 2130 B. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oxygen - Dissolved	EP025	WATER	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)

Lithaqua Environmental Services
45 Lowry Street
Peregrin Beach
QLD 4573



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Hall Brown**

Report **1130024-W**
Project name **WH4 SURFACE WATER**
Project ID **LP140120**
Received Date **Aug 16, 2024**

Client Sample ID			A	C	D	G
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B24- Au0049914	B24- Au0049915	B24- Au0049916	B24- Au0049917
Date Sampled			Aug 16, 2024	Aug 16, 2024	Aug 16, 2024	Aug 16, 2024
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5

Client Sample ID			H	I
Sample Matrix			Water	Water
Eurofins Sample No.			B24- Au0049918	B24- Au0049919
Date Sampled			Aug 16, 2024	Aug 16, 2024
Test/Reference	LOR	Unit		
Chlorophyll a	5	ug/L	14	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Chlorophyll a

- Method: LTM-INO-4340 Chlorophyll a in Waters

Testing Site

Melbourne

Extracted

Aug 23, 2024

Holding Time

28 Days



web: www.eurofins.com.au
email: EnviroSales@eurofins.com

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
---	--	--	--	--	--

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ABN: 47 009 120 549

Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
--

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---	--	--	--

Company Name: Lithaqua Environmental Services
Address: 45 Lowry Street
Peregrin Beach
QLD 4573

Project Name: WH4 SURFACE WATER
Project ID: LP140120

Order No.: PO240816
Report #: 1130024
Phone: 0401671624
Fax:

Received: Aug 16, 2024 1:40 PM
Due: Aug 23, 2024
Priority: 5 Day
Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Aug 16, 2024		Water	B24-Au0049914	X
2	C	Aug 16, 2024		Water	B24-Au0049915	X
3	D	Aug 16, 2024		Water	B24-Au0049916	X
4	G	Aug 16, 2024		Water	B24-Au0049917	X
5	H	Aug 16, 2024		Water	B24-Au0049918	X
6	I	Aug 16, 2024		Water	B24-Au0049919	X
Test Counts						6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B24-Au0049919	CP	ug/L	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Zoe Flynn
Caitlin Breeze

Analytical Services Manager
Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 065 521

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02 9900 8400 EnviroSampleNSW@eurofins.com

☒ Brisbane Laboratory
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☐ Perth Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monersey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company			LITHAQUA			Project No			LP140120			Project Manager			J. HALL-BROWN			Sampler(s)			J. HALL-BROWN											
Address			PO BOX 138 PERRINIAN BEACH QLD 4573			Project Name			NH4 SURFACE WATER			EDD Format			ES01AT			Handed over by			"											
Contact Name			JAMES HALL-BROWN			Analyses Where results are requested, please specify "Total" or "Filtered" SUITE code must be used to allow SUITE pricing			CHLOROPHYL-a			1600			300mL Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4884, WA Guidelines)			Required Turnaround Time (TAT) Default will be 5 days if not ticked. *Surcharge will apply ☐ Overnight (reporting by 9am)* ☐ Same day* ☐ 1 day* ☐ 2 days* ☐ 3 days* ☒ 5 days (Standard) ☐ Other()														
Phone No			0401671624																		Email for Invoice			james@lithaqua.com			Email for Results			"		
Special Directions																																
Purchase Order			PO240816																													
Quote ID No																																
No	Client Sample ID		Sampled Date/Time dd/mm/yy hh:mm		Matrix Solid (S) Water (W)																											
11	A		16/8/24		W		X																									
12	C		"		W		X																									
13	D		"		W		X																									
14	G		"		W		X																									
15	H		"		W		X																									
16	I		"		W		X																									
17																																
18																																
19																																
20																																
Total Counts																																
Method of Shipment			☐ Courier (#) ☒ Hand Delivered ☐ Postal			Name			J. Hall-Brown			Signature						Date			16/8/24											
Laboratory Use Only			Received By			SYD BNE MEL PER ADL NTL DRW			Signature			Eleni Hovos			Date			16/08/24			Time			1:40pm								
			Received By			SYD BNE MEL PER ADL NTL DRW			Signature						Date						Report No			40								

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

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Eurofins Environment Testing NZ Ltd

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Sample Receipt Advice

Company name:	Lithaqua Environmental Services
Contact name:	James Hall Brown
Project name:	WH4 SURFACE WATER
Project ID:	LP140120
Turnaround time:	5 Day
Date/Time received	Aug 16, 2024 1:40 PM
Eurofins reference	1130024

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Zoe Flynn on phone : 0499 572 666 or by email: ZoeFlynn@eurofins.com

Results will be delivered electronically via email to James Hall Brown - james@lithaqua.com.



web: www.eurofins.com.au
email: EnviroSales@eurofins.com

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Lithaqua Environmental Services
Address: 45 Lowry Street
Peregrin Beach
QLD 4573

Project Name: WH4 SURFACE WATER
Project ID: LP140120

Order No.: PO240816
Report #: 1130024
Phone: 0401671624
Fax:

Received: Aug 16, 2024 1:40 PM
Due: Aug 23, 2024
Priority: 5 Day
Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Aug 16, 2024		Water	B24-Au0049914	X
2	C	Aug 16, 2024		Water	B24-Au0049915	X
3	D	Aug 16, 2024		Water	B24-Au0049916	X
4	G	Aug 16, 2024		Water	B24-Au0049917	X
5	H	Aug 16, 2024		Water	B24-Au0049918	X
6	I	Aug 16, 2024		Water	B24-Au0049919	X
Test Counts						6

Lithaqua Environmental Services
45 Lowry Street
Peregian Beach
QLD 4573



NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Hall Brown**

Report **1135997-W**
 Project name **NHH SURFACE WATER**
 Project ID **LP140120**
 Received Date **Sep 04, 2024**

Client Sample ID			A	C	D	F
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B24- Se0011721	B24- Se0011722	B24- Se0011723	B24- Se0011724
Date Sampled			Sep 04, 2024	Sep 04, 2024	Sep 04, 2024	Sep 04, 2024
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25 °C)	10	uS/cm	260	24000	9900	430
Dissolved Oxygen	0.01	mg/L	8.9	9.1	9.1	9.1
pH (at 25 °C)	0.1	pH Units	7.2	7.2	7.3	7.4
Turbidity	1	NTU	6.3	1.0	1.3	3.7

Client Sample ID			G	H	I
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B24- Se0011725	B24- Se0011726	B24- Se0011727
Date Sampled			Sep 04, 2024	Sep 04, 2024	Sep 04, 2024
Test/Reference	LOR	Unit			
Chlorophyll a	5	ug/L	< 5	< 5	< 5
Conductivity (at 25 °C)	10	uS/cm	42000	6700	53000
Dissolved Oxygen	0.01	mg/L	9.2	9.1	9.3
pH (at 25 °C)	0.1	pH Units	7.5	7.2	8.0
Turbidity	1	NTU	< 1	4.2	1.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	Sep 10, 2024	28 Days
Conductivity (at 25 °C) - Method: APHA 2510B	Brisbane	Sep 09, 2024	28 Days
Dissolved Oxygen - Method: APHA 4500-O B/G	Brisbane	Sep 10, 2024	1 Days
pH (at 25 °C) - Method: LTM-GEN-7090 pH in water by ISE	Brisbane	Sep 09, 2024	6 Hours
Turbidity - Method: LTM-INO-4140 Turbidity by Nephelometric Method	Brisbane	Sep 06, 2024	2 Days



web: www.eurofins.com.au
email: EnviroSales@eurofins.com

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
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ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370

ABN: 47 009 120 549

Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
--

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--

Company Name: Lithaqua Environmental Services
Address: 45 Lowry Street
Peregrin Beach
QLD 4573

Project Name: NHH SURFACE WATER
Project ID: LP140120

Order No.:
Report #: 1135997
Phone: 0401671624
Fax:

Received: Sep 4, 2024 5:07 PM
Due: Sep 11, 2024
Priority: 5 Day
Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a	Conductivity (at 25 °C)	Dissolved Oxygen	pH (at 25 °C)	Turbidity
Melbourne Laboratory - NATA # 1261 Site # 1254						X				
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780							X	X	X	X
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	A	Sep 04, 2024		Water	B24-Se0011721	X	X	X	X	X
2	C	Sep 04, 2024		Water	B24-Se0011722	X	X	X	X	X
3	D	Sep 04, 2024		Water	B24-Se0011723	X	X	X	X	X
4	F	Sep 04, 2024		Water	B24-Se0011724	X	X	X	X	X
5	G	Sep 04, 2024		Water	B24-Se0011725	X	X	X	X	X
6	H	Sep 04, 2024		Water	B24-Se0011726	X	X	X	X	X
7	I	Sep 04, 2024		Water	B24-Se0011727	X	X	X	X	X
Test Counts						7	7	7	7	7

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
Turbidity			NTU	< 1			1	Pass	
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
LCS - % Recovery									
Conductivity (at 25 °C)			%	100			70-130	Pass	
Turbidity			%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B24-Se0011722	CP	ug/L	< 5	< 5	<1	30%	Pass	
Conductivity (at 25 °C)	B24-Se0011722	CP	uS/cm	24000	24000	<1	30%	Pass	
pH (at 25 °C)	B24-Se0011722	CP	pH Units	7.2	7.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Dissolved Oxygen	B24-Se0011726	CP	mg/L	9.1	9.1	<1	30%	Pass	
Turbidity	B24-Se0011726	CP	NTU	4.2	4.2	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Zoe Flynn	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Jonathon Angell	Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory

179 Magowar Road, Gurrteen, NSW 2145
+61 2 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory

Unit 1/21 Smallwood Place, Murarrie, QLD 4172
+61 7 3902 4600 EnviroSampleQLD@neurofins.com

☐ Perth Laboratory

46-48 Banksia Road, Welshpool, WA 6106
+61 8 6253 4444 EnviroSampleWA@neurofina.com

☐ Melbourne Laboratory

6 Monterey Road Dandenong South VIC 3175
+61 3 8564 5000 EnviroSampleVic@neurofins.com

Company LITHAQUA		Project No LP140120		Project Manager J. HALL-BROWN		Sampler(s) J. Hall-Brown	
Address PO BOX 136 PSECEIAN BEACH		Project Name NHH SURFACE WATER		EDD Format ESolat, EQualS etc.		Handed over by "	
Contact Name JAMES HALL-BROWN		Analyses When multiple analyses are requested please specify "Total or Element" NOTE code must be used to amend SUTTE pricing CHLOROPHYLL-a pH EC DO TURBIDITY		Email for invoice james@lithaqua.com		Email for Results "	
Phone No 0401671624							
Special Directions							
Purchase Order							
Quote ID No 14065LIT						Containers Change container type & size if necessary.	
						Required Turnaround Time (TAT) Default will be 5 days if not noted.	
						☒ Overnight (reporting by 9am) ♦ ☐ Same day ♦ ☐ 1 day ♦ ☐ 2 days ♦ ☐ 3 days ♦ ☒ 5 days (Standard) ☐ Other()	
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)			Sample Comments / Dangerous Goods Hazard Warning	
1	A	4/9/24		X	X	X	
2	C	"		X	X	X	
3	D	"		X	X	X	
4	F	"		X	X	X	
5	G	"		X	X	X	
6	H	"		X	X	X	
7	I	"		X	X	X	
8							
9							
10							
Total Counts							
Method of Shipment		☐ Courier (#) ☒ Hand Delivered ☐ Postal		Name	Signature	Date	Time
				JAMES HALL-BROWN	[Signature]	4/9/24	17:00
Laboratory Use Only		Received By MUSTKAAN		SYD BNE MEL PER ADL NTL DRW	Signature me	Date 4/9	Temperature 1.5M
		Received By		SYD BNE MEL PER ADL NTL DRW	Signature	Date	Report No

#113 5997

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

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Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name: Lithaqua Environmental Services
Contact name: James Hall Brown
Project name: NHH SURFACE WATER
Project ID: LP140120
Turnaround time: 5 Day
Date/Time received: Sep 4, 2024 5:07 PM
Eurofins reference: 1135997

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Zoe Flynn on phone : 0499 572 666 or by email: ZoeFlynn@eurofins.com

Results will be delivered electronically via email to James Hall Brown - james@lithaqua.com.



web: www.eurofins.com.au
email: EnviroSales@eurofins.com

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
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ABN: 91 05 0159 898

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ABN: 47 009 120 549

Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
--

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: Lithaqua Environmental Services
Address: 45 Lowry Street
Peregrin Beach
QLD 4573

Project Name: NHH SURFACE WATER
Project ID: LP140120

Order No.:
Report #: 1135997
Phone: 0401671624
Fax:

Received: Sep 4, 2024 5:07 PM
Due: Sep 11, 2024
Priority: 5 Day
Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a	Conductivity (at 25 °C)	Dissolved Oxygen	pH (at 25 °C)	Turbidity
Melbourne Laboratory - NATA # 1261 Site # 1254						X				
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780							X	X	X	X
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	A	Sep 04, 2024		Water	B24-Se0011721	X	X	X	X	X
2	C	Sep 04, 2024		Water	B24-Se0011722	X	X	X	X	X
3	D	Sep 04, 2024		Water	B24-Se0011723	X	X	X	X	X
4	F	Sep 04, 2024		Water	B24-Se0011724	X	X	X	X	X
5	G	Sep 04, 2024		Water	B24-Se0011725	X	X	X	X	X
6	H	Sep 04, 2024		Water	B24-Se0011726	X	X	X	X	X
7	I	Sep 04, 2024		Water	B24-Se0011727	X	X	X	X	X
Test Counts						7	7	7	7	7



CERTIFICATE OF ANALYSIS

Work Order : **EB2437378**
Client : **LITHAQUA ENVIRONMENTAL SERVICES**
Contact : **MR JAMES HALL-BROWN**
Address :
PEREGIAN BEACH
Telephone : 07 3191 9038
Project : NHH SURFACE WATER - LP140120
Order number : ----
C-O-C number : ----
Sampler : JAMES HALL-BROWN
Site : ----
Quote number : EN/222
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 4
Laboratory : Environmental Division Brisbane
Contact : Customer Services EB
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3552-8685
Date Samples Received : 30-Oct-2024 08:07
Date Analysis Commenced : 30-Oct-2024
Issue Date : 13-Nov-2024 12:53



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
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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. are fully validated and are often at the client request.

In house developed procedures

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.

- EP008 (Chlorophyll a & Pheophytin a): Sample A (EB2437378-001) was diluted due to matrix interference. LOR adjusted accordingly.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	A	C	D	G	H
Sampling date / time					29-Oct-2024 00:00	29-Oct-2024 00:00	29-Oct-2024 00:00	29-Oct-2024 00:00	29-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2437378-001	EB2437378-002	EB2437378-003	EB2437378-004	EB2437378-005
				Result	Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.35	7.50	7.56	7.63	7.58
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		217	13900	5770	34900	7300
EA045: Turbidity									
Turbidity	----	0.1	NTU		6.4	12.7	3.3	8.1	6.0
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<2	4	3	5	3



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	I	----	----	----	----
				Sampling date / time	29-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB2437378-006	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit	7.75	----	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm	46400	----	----	----	----	----
EA045: Turbidity									
Turbidity	----	0.1	NTU	4.8	----	----	----	----	----
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³	3	----	----	----	----	----



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2437378**

Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: PEREGIAN BEACH	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: james@lithaqua.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 07 3191 9038	Telephone	: +61-7-3552-8685
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: NHH SURFACE WATER - LP140120	Page	: 1 of 2
Order number	: ----	Quote number	: EB2017LITENV0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: JAMES HALL-BROWN		

Dates

Date Samples Received	: 30-Oct-2024 08:07	Issue Date	: 30-Oct-2024
Client Requested Due Date	: 06-Nov-2024	Scheduled Reporting Date	: 06-Nov-2024

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 1.1, 2.3, 1.6°C
Receipt Detail	: ESKY	No. of samples received / analysed	: 6 / 6

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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

- No sample container / preservation non-compliance exists.

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.

Matrix: WATER

Laboratory sample ID	Sampling date / time	Sample ID	WATER pH (Auto)	WATER Electrical	WATER Turbidity	WATER Chloroph
EB2437378-001	29-Oct-2024 00:00	A	✓	✓	✓	✓
EB2437378-002	29-Oct-2024 00:00	C	✓	✓	✓	✓
EB2437378-003	29-Oct-2024 00:00	D	✓	✓	✓	✓
EB2437378-004	29-Oct-2024 00:00	G	✓	✓	✓	✓
EB2437378-005	29-Oct-2024 00:00	H	✓	✓	✓	✓
EB2437378-006	29-Oct-2024 00:00	I	✓	✓	✓	✓

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by Auto Titrator							
A	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----
C	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----
D	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----
G	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----
H	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----
I	Clear Plastic Bottle - Natural	----	29-Oct-2024	30-Oct-2024	✗	----	----

JAMES HALL-BROWN

- [illegible]



QUALITY CONTROL REPORT

Work Order	: EB2437378	Page	: 1 of 3
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: PEREGIAN BEACH	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 3191 9038	Telephone	: +61-7-3552-8685
Project	: NHH SURFACE WATER - LP140120	Date Samples Received	: 30-Oct-2024
Order number	: ----	Date Analysis Commenced	: 30-Oct-2024
C-O-C number	: ----	Issue Date	: 13-Nov-2024
Sampler	: JAMES HALL-BROWN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 6		
No. of samples analysed	: 6		



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
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6156106)									
EB2437238-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.61	7.68	0.9	0% - 20%
EB2437396-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.14	8.21	0.9	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6156108)									
EB2437238-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	42900	43900	2.2	0% - 20%
EB2437396-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	315	321	1.7	0% - 20%
EA045: Turbidity (QC Lot: 6155442)									
EB2436969-001	Anonymous	EA045: Turbidity	----	0.1	NTU	0.4	0.4	0.0	No Limit
EB2437238-006	Anonymous	EA045: Turbidity	----	0.1	NTU	0.1	0.1	0.0	No Limit
EA045: Turbidity (QC Lot: 6155443)									
EB2437378-002	C	EA045: Turbidity	----	0.1	NTU	12.7	12.6	0.8	0% - 20%
EB2437400-005	Anonymous	EA045: Turbidity	----	0.1	NTU	0.2	0.2	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) Report	Laboratory Control Spike (LCS) Report				
Method: Compound		CAS Number	LOR		Unit	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
EA005P: pH by PC Titrator (QCLot: 6156106)									
EA005-P: pH Value		----	----	pH Unit	----	4 pH Unit	99.5	98.0	102
					----	7 pH Unit	99.8	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 6156108)									
EA010-P: Electrical Conductivity @ 25°C		----	1	µS/cm	<1	4000 µS/cm	96.5	90.0	106
					<1	12890 µS/cm	100	90.0	106
EA045: Turbidity (QCLot: 6155442)									
EA045: Turbidity		----	0.1	NTU	<0.1	4 NTU	101	90.0	110
					<0.1	40 NTU	98.8	90.0	110
					<0.1	400 NTU	99.8	90.0	110
EA045: Turbidity (QCLot: 6155443)									
EA045: Turbidity		----	0.1	NTU	<0.1	4 NTU	101	90.0	110
					<0.1	40 NTU	98.8	90.0	110
					<0.1	400 NTU	99.8	90.0	110
EP008: Chlorophyll (QCLot: 6155177)									
EP008: Chlorophyll a		----	1	mg/m³	<1	37 mg/m³	105	95.0	105

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2437378	Page	: 1 of 4
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Telephone	: +61-7-3552-8685
Project	: NHH SURFACE WATER - LP140120	Date Samples Received	: 30-Oct-2024
Site	: ----	Issue Date	: 13-Nov-2024
Sampler	: JAMES HALL-BROWN	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

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.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	31-Oct-2024	29-Oct-2024	2
D,	G,						
H,	I						

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	
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P) A, D, H,	C, G, I	29-Oct-2024	----	----	----	31-Oct-2024	29-Oct-2024	✖
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P) A, D, H,	C, G, I	29-Oct-2024	----	----	----	31-Oct-2024	26-Nov-2024	✔
EA045: Turbidity								
Clear Plastic Bottle - Natural (EA045) A, D, H,	C, G, I	29-Oct-2024	----	----	----	30-Oct-2024	31-Oct-2024	✔
EP008: Chlorophyll a & Pheophytin a								
Opaque Plastic Bottle - Unpreserved (EP008) A, D, H,	C, G, I	29-Oct-2024	----	----	----	30-Oct-2024	31-Oct-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)							
Conductivity by Auto Titrator	EA010-P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	4	33	12.12	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chlorophyll a and Pheophytin a	EP008	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	6	33	18.18	15.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chlorophyll a and Pheophytin a	EP008	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	2	33	6.06	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Turbidity	EA045	WATER	In house: Referenced to APHA 2130 B. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.

Lithaqua Environmental Services
45 Lowry Street
Peregrin Beach
QLD 4573



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Hall Brown**

Report **1167203-W**
 Project name **NHH SURFACE WATER**
 Project ID **LP140120**
 Received Date **Dec 03, 2024**

Client Sample ID			A	C	D	F
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B24-De0007010	B24-De0007012	B24-De0007013	B24-De0007014
Date Sampled			Dec 03, 2024	Dec 03, 2024	Dec 03, 2024	Dec 03, 2024
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	< 5	41	< 5

Client Sample ID			G	H	I
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B24-De0007015	B24-De0007016	B24-De0007017
Date Sampled			Dec 03, 2024	Dec 03, 2024	Dec 03, 2024
Test/Reference	LOR	Unit			
Chlorophyll a	5	ug/L	< 5	< 5	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Chlorophyll a

Testing Site

Melbourne

Extracted

Dec 14, 2024

Holding Time

28 Days

- Method: LTM-INO-4340 Chlorophyll a in Waters



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--	---	--	--	---	--	--	--

Company Name:

Address:

Project Name:

Project ID:

Lithaqua Environmental Services

45 Lowry Street

Peregrine Beach

QLD 4573

NHH SURFACE WATER

LP140120

Order No.:

Report #:

Phone:

Fax:

1167203

0401671624

Received:

Due:

Priority:

Contact Name:

Dec 3, 2024 5:30 PM

Dec 11, 2024

5 Day

James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Dec 03, 2024		Water	B24-De0007010	X
2	C	Dec 03, 2024		Water	B24-De0007012	X
3	D	Dec 03, 2024		Water	B24-De0007013	X
4	F	Dec 03, 2024		Water	B24-De0007014	X
5	G	Dec 03, 2024		Water	B24-De0007015	X
6	H	Dec 03, 2024		Water	B24-De0007016	X
7	I	Dec 03, 2024		Water	B24-De0007017	X
Test Counts						7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B24-De0007010	CP	ug/L	< 5	< 5	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Emily O'Neill
Caitlin Breeze

Analytical Services Manager
Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory

Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofrs.com

☒ Brisbane Laboratory

Unit 1 21 Smallwood Place Muramba QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory

Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@neurofins.com

☐ Melbourne Laboratory

6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

[illegible]

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name:	Lithaqua Environmental Services
Contact name:	James Hall Brown
Project name:	NHH SURFACE WATER
Project ID:	LP140120
Turnaround time:	5 Day
Date/Time received	Dec 3, 2024 5:30 PM
Eurofins reference	1167203

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Zoe Flynn on phone : 0499 572 666 or by email: ZoeFlynn@eurofins.com

Results will be delivered electronically via email to James Hall Brown - james@lithaqua.com.



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--	---	--	--	---	--	--	--

Company Name:

Address:

Project Name:

Project ID:

Lithaqua Environmental Services

45 Lowry Street

Peregrin Beach

QLD 4573

NHH SURFACE WATER

LP140120

Order No.:

Report #:

Phone:

Fax:

1167203

0401671624

Received:

Due:

Priority:

Contact Name:

Dec 3, 2024 5:30 PM

Dec 11, 2024

5 Day

James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Dec 03, 2024		Water	B24-De0007010	X
2	C	Dec 03, 2024		Water	B24-De0007012	X
3	D	Dec 03, 2024		Water	B24-De0007013	X
4	F	Dec 03, 2024		Water	B24-De0007014	X
5	G	Dec 03, 2024		Water	B24-De0007015	X
6	H	Dec 03, 2024		Water	B24-De0007016	X
7	I	Dec 03, 2024		Water	B24-De0007017	X
Test Counts						7



CERTIFICATE OF ANALYSIS

Work Order : **EB2500269**
Client : **LITHAQUA ENVIRONMENTAL SERVICES**
Contact : **MR JAMES HALL-BROWN**
Address :
PEREGIAN BEACH
Telephone : 07 3191 9038
Project : NHH SURFACE WATER
Order number : ----
C-O-C number : ----
Sampler : JAMES HALL-BROWN
Site : NORTH HARBOUR
Quote number : EN/222
No. of samples received : 7
No. of samples analysed : 7

Page : 1 of 4
Laboratory : Environmental Division Brisbane
Contact : Customer Services EB
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3552-8685
Date Samples Received : 06-Jan-2025 15:11
Date Analysis Commenced : 06-Jan-2025
Issue Date : 25-Mar-2025 11:58



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
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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. are fully validated and are often at the client request.

In house developed procedures

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

				A	C	D	F	G
Sampling date / time				06-Jan-2025 00:00	06-Jan-2025 00:00	06-Jan-2025 00:00	06-Jan-2025 00:00	06-Jan-2025 00:00
Compound	CAS Number	LOR	Unit	EB2500269-001	EB2500269-002	EB2500269-003	EB2500269-004	EB2500269-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.14	7.27	7.37	7.57	7.42
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	197	323	250	384	6340
EA045: Turbidity								
Turbidity	----	0.1	NTU	21.4	17.7	5.5	7.0	20.9
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	2	<1	5	2	2
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen - % Saturation	----	0.1	% saturation	51.0	55.1	57.5	48.7	74.7



Analytical Results

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

Sample ID

				H	I	----	----	----
Sampling date / time				06-Jan-2025 00:00	06-Jan-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2500269-006	EB2500269-007	-----	-----	-----
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.51	7.80	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	270	31000	----	----	----
EA045: Turbidity								
Turbidity	----	0.1	NTU	23.9	7.7	----	----	----
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	3	4	----	----	----
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen - % Saturation	----	0.1	% saturation	73.6	101	----	----	----



QUALITY CONTROL REPORT

Work Order	: EB2500269	Page	: 1 of 3
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: PEREGIAN BEACH	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: 07 3191 9038	Telephone	: +61-7-3552-8685
Project	: NHH SURFACE WATER	Date Samples Received	: 06-Jan-2025
Order number	: ----	Date Analysis Commenced	: 06-Jan-2025
C-O-C number	: ----	Issue Date	: 25-Mar-2025
Sampler	: JAMES HALL-BROWN		
Site	: NORTH HARBOUR		
Quote number	: EN/222		
No. of samples received	: 7		
No. of samples analysed	: 7		



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
Beatriz Llarinas	Senior Chemist - Inorganics	Brisbane Inorganics, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6296162)									
EB2500235-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.76	7.77	0.1	0% - 20%
EB2500269-007	I	EA005-P: pH Value	----	0.01	pH Unit	7.80	7.84	0.5	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6296164)									
EB2500235-001	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	243	249	2.5	0% - 20%
EB2500269-007	I	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	31000	31100	0.5	0% - 20%
EA045: Turbidity (QC Lot: 6295728)									
EB2500269-001	A	EA045: Turbidity	----	0.1	NTU	21.4	21.4	0.0	0% - 20%
EP025: Oxygen - Dissolved (DO) (QC Lot: 6295727)									
EB2500269-001	A	EP025: Dissolved Oxygen - % Saturation	----	0.1	% saturation	51.0	51.0	0.0	0% - 20%



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) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA005P: pH by PC Titrator (QCLot: 6296162)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.2	98.0	102
				----	7 pH Unit	99.6	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 6296164)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	2100 µS/cm	98.7	90.0	106
				<1	12890 µS/cm	99.6	90.0	106
EA045: Turbidity (QCLot: 6295728)								
EA045: Turbidity	----	0.1	NTU	<0.1	4 NTU	101	90.0	110
				<0.1	40 NTU	97.8	90.0	110
				<0.1	400 NTU	97.5	90.0	110
EP008: Chlorophyll (QCLot: 6306781)								
EP008: Chlorophyll a	----	1	mg/m³	<1	16 mg/m³	95.6	95.0	105

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2500269	Page	: 1 of 5
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Telephone	: +61-7-3552-8685
Project	: NHH SURFACE WATER	Date Samples Received	: 06-Jan-2025
Site	: NORTH HARBOUR	Issue Date	: 25-Mar-2025
Sampler	: JAMES HALL-BROWN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

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.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	07-Jan-2025	06-Jan-2025	1
D,	F,						
G,	H,						
I							
EP008: Chlorophyll a & Pheophytin a							
White Plastic Bottle - Unpreserved							
A,	C,	----	----	----	13-Jan-2025	08-Jan-2025	5
D,	F,						
G,	H,						
I							

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
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)		06-Jan-2025	----	----	----	07-Jan-2025	06-Jan-2025	✘
A,	C,							
D,	F,							
G,	H,							
I								
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)		06-Jan-2025	----	----	----	07-Jan-2025	03-Feb-2025	✔
A,	C,							
D,	F,							
G,	H,							
I								

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	
EA045: Turbidity									
Clear Plastic Bottle - Natural (EA045)	A, D, G, I	C, F, H,	06-Jan-2025	----	----	----	06-Jan-2025	08-Jan-2025	✓
EP008: Chlorophyll a & Pheophytin a									
White Plastic Bottle - Unpreserved (EP008)	A, D, G, I	C, F, H,	06-Jan-2025	----	----	----	13-Jan-2025	08-Jan-2025	✗
EP025: Oxygen - Dissolved (DO)									
Clear Plastic Bottle - Natural (EP025)	A, D, G, I	C, F, H,	06-Jan-2025	----	----	----	06-Jan-2025	06-Jan-2025	✓



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)							
Conductivity by Auto Titrator	EA010-P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chlorophyll a and Pheophytin a	EP008	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	3	7	42.86	15.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chlorophyll a and Pheophytin a	EP008	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	7	14.29	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Turbidity	EA045	WATER	In house: Referenced to APHA 2130 B. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oxygen - Dissolved	EP025	WATER	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)

Lithaqua Environmental Services
45 Lowry Street
Peregian Beach
QLD 4573



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Hall Brown**

Report **1190519-W**
 Project name **WHH SURFACE WATER**
 Project ID **LP140120**
 Received Date **Feb 20, 2025**

Client Sample ID			A	C	D	F
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B25-Fe0054098	B25-Fe0054099	B25-Fe0054100	B25-Fe0054101
Date Sampled			Feb 20, 2025	Feb 20, 2025	Feb 20, 2025	Feb 20, 2025
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	5.1	6.5	54

Client Sample ID			G	H	I
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B25-Fe0054102	B25-Fe0054103	B25-Fe0054104
Date Sampled			Feb 20, 2025	Feb 20, 2025	Feb 20, 2025
Test/Reference	LOR	Unit			
Chlorophyll a	5	ug/L	16	9.0	< 5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Chlorophyll a

Testing Site

Melbourne

Extracted

Mar 05, 2025

Holding Time

28 Days

- Method: LTM-INO-4340 Chlorophyll a in Waters



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: Lithaqua Environmental Services

Address: 45 Lowry Street
Peregrin Beach
QLD 4573

Project Name: WHH SURFACE WATER

Project ID: LP140120

Order No.:

Report #: 1190519

Phone: 0401671624

Fax:

Received: Feb 20, 2025 4:05 PM

Due: Feb 27, 2025

Priority: 5 Day

Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Feb 20, 2025		Water	B25-Fe0054098	X
2	C	Feb 20, 2025		Water	B25-Fe0054099	X
3	D	Feb 20, 2025		Water	B25-Fe0054100	X
4	F	Feb 20, 2025		Water	B25-Fe0054101	X
5	G	Feb 20, 2025		Water	B25-Fe0054102	X
6	H	Feb 20, 2025		Water	B25-Fe0054103	X
7	I	Feb 20, 2025		Water	B25-Fe0054104	X
Test Counts						7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B25-Fe0054102	CP	ug/L	16	16	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Zoe Flynn
Mary Makarios

Analytical Services Manager
Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

[illegible]

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name: Lithaqua Environmental Services
Contact name: James Hall Brown
Project name: WHH SURFACE WATER
Project ID: LP140120
Turnaround time: 5 Day
Date/Time received: Feb 20, 2025 4:05 PM
Eurofins reference: 1190519

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Zoe Flynn on phone : 0499 572 666 or by email: Zoe.Flynn@eurofinsanz.com

Results will be delivered electronically via email to James Hall Brown - james@lithaqua.com.



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: Lithaqua Environmental Services

Address: 45 Lowry Street
Peregrine Beach
QLD 4573

Project Name: WHH SURFACE WATER

Project ID: LP140120

Order No.:

Report #: 1190519

Phone: 0401671624

Fax:

Received: Feb 20, 2025 4:05 PM

Due: To Be Advised

Priority: 5 Day

Contact Name: James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	A	Feb 20, 2025		Water	B25-Fe0054098	X
2	C	Feb 20, 2025		Water	B25-Fe0054099	X
3	D	Feb 20, 2025		Water	B25-Fe0054100	X
4	F	Feb 20, 2025		Water	B25-Fe0054101	X
5	G	Feb 20, 2025		Water	B25-Fe0054102	X
6	H	Feb 20, 2025		Water	B25-Fe0054103	X
7	I	Feb 20, 2025		Water	B25-Fe0054104	X
Test Counts						7

Lithaqua Environmental Services
45 Lowry Street
Peregian Beach
QLD 4573



NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Hall Brown**

Report **1198466-W**
 Project name **NHH SURFACE WATER**
 Project ID **LP140120**
 Received Date **Mar 14, 2025**

Client Sample ID			A	C	D	F
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B25- Ma0036731	B25- Ma0036733	B25- Ma0036734	B25- Ma0036736
Date Sampled			Mar 14, 2025	Mar 14, 2025	Mar 14, 2025	Mar 14, 2025
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	< 5	7.1	39
Conductivity (at 25 °C)	10	uS/cm	180	360	410	210
Dissolved Oxygen (% Saturation)		%	77	80	89	70
pH (at 25 °C)	0.1	pH Units	7.2	7.5	7.4	7.4
Turbidity	1	NTU	11	8.5	1.5	4.9

Client Sample ID			G	H	I
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B25- Ma0036737	B25- Ma0036738	B25- Ma0036739
Date Sampled			Mar 14, 2025	Mar 14, 2025	Mar 14, 2025
Test/Reference	LOR	Unit			
Chlorophyll a	5	ug/L	9.9	< 5	< 5
Conductivity (at 25 °C)	10	uS/cm	790	170	9000
Dissolved Oxygen (% Saturation)		%	97	98	99
pH (at 25 °C)	0.1	pH Units	7.2	7.3	7.3
Turbidity	1	NTU	24	34	2.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	Mar 29, 2025	28 Days
Conductivity (at 25 °C) - Method: APHA 2510B	Brisbane	Mar 18, 2025	28 Days
Dissolved Oxygen (% Saturation) - Method: APHA 4500-O B, C, G using Dissolved Oxygen analyser	Brisbane	Mar 18, 2025	24 Hours
pH (at 25 °C) - Method: LTM-GEN-7090 pH in water by ISE	Brisbane	Mar 18, 2025	6 Hours
Turbidity - Method: LTM-INO-4140 Turbidity by Nephelometric Method	Brisbane	Mar 18, 2025	2 Days



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name:
Address:

Project Name:
Project ID:

Lithaqua Environmental Services
45 Lowry Street
Peregrine Beach
QLD 4573

NHH SURFACE WATER
LP140120

Order No.:
Report #:
Phone:
Fax:

LP140120
1198466
0401671624

Received:
Due:
Priority:
Contact Name:

Mar 14, 2025 1:15 PM
Mar 21, 2025
5 Day
James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a	Conductivity (at 25 °C)	Dissolved Oxygen (% Saturation)	pH (at 25 °C)	Turbidity
Melbourne Laboratory - NATA # 1261 Site # 1254						X				
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780							X	X	X	X
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	A	Mar 14, 2025		Water	B25-Ma0036731	X	X	X	X	X
2	C	Mar 14, 2025		Water	B25-Ma0036733	X	X	X	X	X
3	D	Mar 14, 2025		Water	B25-Ma0036734	X	X	X	X	X
4	F	Mar 14, 2025		Water	B25-Ma0036736	X	X	X	X	X
5	G	Mar 14, 2025		Water	B25-Ma0036737	X	X	X	X	X
6	H	Mar 14, 2025		Water	B25-Ma0036738	X	X	X	X	X
7	I	Mar 14, 2025		Water	B25-Ma0036739	X	X	X	X	X
Test Counts						7	7	7	7	7

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
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- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
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- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
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Holding Times

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Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

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org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

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Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chlorophyll a			ug/L	< 5			5	Pass	
Turbidity			NTU	< 1			1	Pass	
LCS - % Recovery									
Conductivity (at 25 °C)			%	100			70-130	Pass	
Turbidity			%	90			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25 °C)	B25-Ma0036731	CP	uS/cm	180	180	<1	30%	Pass	
Dissolved Oxygen (% Saturation)	B25-Ma0036731	CP	%	77	77	<1	30%	Pass	
pH (at 25 °C)	B25-Ma0036731	CP	pH Units	7.2	7.3	1.2	30%	Pass	
Turbidity	B25-Ma0036731	CP	NTU	11	11	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Dissolved Oxygen (% Saturation)	B25-Ma0036737	CP	%	97	97	<1	30%	Pass	
Turbidity	B25-Ma0036737	CP	NTU	24	24	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Jacinta Baker	Analytical Services Manager
Jonathon Angell	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
179 Magowar Road, Gtswain, NSW 2145
+61 2 9900 8400 EnviroSampleNSW@eurofins.com

☒ Brisbane Laboratory
Unit 1/21 Smallwood Place, Murarie, QLD 4172
+61 7 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
48-48 Banksia Road, Welshpool, WA 6106
+61 8 6253 4444 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
+61 3 8554 5000 EnviroSampleVic@eurofins.com

Company	Lithaqua	Project No	LP140120	Project Manager	James Hall-Brown	Sampler(s)	James Hall-Brown				
Address	PO BOX 136 Peregrine Beach QLD 4573	Project Name	NHH Surface Water	EDD Format	Esdat	Handed over by	James Hall-Brown				
Contact Name	James Hall-Brown	Analyses Where analysis is requested, please specify 'In-out' or 'Phase' NOTE: only what is listed is analysed. BUTTE phasing	B19D	Chlorophyll A	pH	EC	DO (%)	Turbidity	Email for Invoice	lithaqua@gmail.com, james@lithaqua.com	
Phone No	0401671624								Email for Results	lithaqua@gmail.com, james@lithaqua.com	
Special Directions											
Purchase Order	LP140120										
Quote ID No											
						Containers Change container type & size if necessary		Required Turnaround Time (TAT) Default will be 5 days if not boxed			
						500mL Plastic		• Surcharge will apply			
						250mL Plastic		☐ Overnight (reporting by 9am)			
						125mL Plastic		☐ Same day ☐ 1 day			
						200mL Amber Glass		☐ 2 days ☐ 3 days			
						40mL VOA vial		☒ 5 days (Standard)			
						500mL PFAS Bottle		☐ Other ()			
						Jar (Glass or HDPE)					
						Other (Asbestos AS4044, WA Guidelines)					
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)						Sample Comments / Dangerous Goods Hazard Warning		
1	A	14/03/25	W	X	X	X	X	X	1	1	
2	C	14/3/25	W	X	X	X	X	X	1	1	
3	D	14/3/25	W	X	X	X	X	X	1	1	
4	F	14/3/25	W	X	X	X	X	X	1	1	
5	G	14/3/25	W	X	X	X	X	X	1	1	
6	H	14/3/25	W	X	X	X	X	X	1	1	
7	I	14/3/25	W	X	X	X	X	X	1	1	
8											
9											
10											
Total Counts				7	7	7	7	7	7	7	
Method of Shipment	☐ Courier (#) ☒ Hand Delivered ☐ Postal		Name	James Hall-Brown	Signature			Date	14/3/25	Time	13:57
Laboratory Use Only	Received By		SYD BNE MEL PER ADL NTL DRW	Signature		Date	14/3/25	Time	1:15pm	Temperature	8.8
	Received By		SYD BNE MEL PER ADL NTL DRW	Signature		Date		Time		Report No	

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name: Lithaqua Environmental Services
Contact name: James Hall Brown
Project name: NHH SURFACE WATER
Project ID: LP140120
Turnaround time: 5 Day
Date/Time received: Mar 14, 2025 1:15 PM
Eurofins reference: 1198466

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Zoe Flynn on phone : 0499 572 666 or by email: Zoe.Flynn@eurofinsanz.com

Results will be delivered electronically via email to James Hall Brown - james@lithaqua.com.



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079
---	--	--	--	--	--

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554
--

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
--	--	---	--

Company Name:

Address:

Project Name:

Project ID:

Lithaqua Environmental Services

45 Lowry Street

Peregrin Beach

QLD 4573

NHH SURFACE WATER

LP140120

Order No.:

Report #:

Phone:

Fax:

LP140120

1198466

0401671624

Received:

Due:

Priority:

Contact Name:

Mar 14, 2025 1:15 PM

Mar 21, 2025

5 Day

James Hall Brown

Eurofins Analytical Services Manager : Zoe Flynn

Sample Detail						Chlorophyll a	Conductivity (at 25 °C)	Disolved Oxygen (% Saturation)	pH (at 25 °C)	Turbidity
Melbourne Laboratory - NATA # 1261 Site # 1254						X				
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780							X	X	X	X
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	A	Mar 14, 2025		Water	B25-Ma0036731	X	X	X	X	X
2	C	Mar 14, 2025		Water	B25-Ma0036733	X	X	X	X	X
3	D	Mar 14, 2025		Water	B25-Ma0036734	X	X	X	X	X
4	F	Mar 14, 2025		Water	B25-Ma0036736	X	X	X	X	X
5	G	Mar 14, 2025		Water	B25-Ma0036737	X	X	X	X	X
6	H	Mar 14, 2025		Water	B25-Ma0036738	X	X	X	X	X
7	I	Mar 14, 2025		Water	B25-Ma0036739	X	X	X	X	X
Test Counts						7	7	7	7	7



CERTIFICATE OF ANALYSIS

Work Order : **EB2518685**
Client : **LITHAQUA ENVIRONMENTAL SERVICES**
Contact : **MR JAMES HALL-BROWN**
Address : **45 LOWRY STREET**
PEREGIAN BEACH 4573
Telephone : **07 3191 9038**
Project : **LP140120 - NHH SURFACE WATER**
Order number : **----**
C-O-C number : **----**
Sampler : **JAMES HALL-BROWN**
Site : **NHH**
Quote number : **EN/222**
No. of samples received : **7**
No. of samples analysed : **7**

Page : **1 of 4**
Laboratory : **Environmental Division Brisbane**
Contact : **Customer Services EB**
Address : **2 Byth Street Stafford QLD Australia 4053**
Telephone : **+61-7-3552-8685**
Date Samples Received : **31-May-2025 14:15**
Date Analysis Commenced : **31-May-2025**
Issue Date : **11-Jul-2025 10:57**



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD



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. are fully validated and are often at the client request.

In house developed procedures

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

				A	C	D	F	G
Sampling date / time				31-May-2025 00:00	31-May-2025 00:00	31-May-2025 00:00	31-May-2025 00:00	31-May-2025 00:00
Compound	CAS Number	LOR	Unit	EB2518685-001	EB2518685-002	EB2518685-003	EB2518685-004	EB2518685-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.25	7.23	7.45	7.37	7.60
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	267	4760	656	343	24000
EA045: Turbidity								
Turbidity	----	0.1	NTU	13.1	10.3	2.5	11.5	16.8
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	<1	<1	1	<1	4
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen - % Saturation	----	0.1	% saturation	36.3	69.1	64.5	37.6	69.5



Analytical Results

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

				Sample ID	H	I			
Sampling date / time					31-May-2025 00:00	31-May-2025 00:00			
Compound	CAS Number	LOR	Unit		EB2518685-006	EB2518685-007			
				Result	Result				
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		7.57	7.78	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		10200	45500	----	----	----
EA045: Turbidity									
Turbidity	----	0.1	NTU		14.5	12.3	----	----	----
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		2	2	----	----	----
EP025: Oxygen - Dissolved (DO)									
Dissolved Oxygen - % Saturation	----	0.1	% saturation		68.0	84.5	----	----	----

Mandatory Fields				CHAIN OF CUSTODY												Page 1 of 1					
CLIENT CODE: LITENV		*PROJECT MANAGER: J. HALL-BROWN		SAMPLER: J. HALL-BROWN								CoC #: (if applicable)									
*CLIENT: LITNAQUA		*PM MOBILE: 0401 671 624		SAMPLER MOBILE:																	
OFFICE: PARAGUAN BEACH		ALS QUOTE # (Client PL if blank)		PURCHASE ORDER NO.:																	
PROJECT NO./PROJECT: LP140120 NHH SURFACES WATER				SITE: NHH																	
*INVOICE TO: james@lithaqua.com												☐ CC Invoice to PM		BIOSECURITY							
*EMAIL REPORTS TO: (default to PM if blank)				*ANALYSIS REQUIRED (NB. ALS Quote No. and/or Analysis Suite Codes must be listed to agree suite/quoted price) Where Metals are required, specify Total (unless d.bottle required) or Dissolved (field filtered bottle required). Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample												Country of Origin: (if not Australia)					
*STORAGE REQUIREMENTS Please check box. ☒ Standard Storage ☐ Extended Storage Standard Storage (time from receipt of samples): Waters - 3 weeks Soils - 2 months Specify Disposal Dates: Note: Extended storage incurs a fee and requires a signed agreement.				*TURNAROUND Please check box. ☒ 5+ days (no surcharge) ☐ 3 day (+15%) ☐ 2 day (+20%) ☐ 1 day (+50%) (Not all tests can be expedited, contact Client Services for more information)				MATRICES: Sol/Solids(S) Water(W) Sediments (SD) Dust(D) Product (P) Biota (B) Biosolid (BS) CHLOROPHYLL-A PH EC DO (1. ONLY) TURBIDITY												Environmental Division Brisbane Work Order Reference EB2518685  Telephone : + 61 7 3642 8681	
Comments:																					
ALS Use Only	Sample ID	Depth	Date/Time	No. Bottles													Additional Information (Comment on hazards - e.g., asbestos, known high contamination)				
Lab ID																					
1	A		31/5/25		X	X	X	X	X									☐ Dup ☐ MS	HT		
2	C		"		X	X	X	X	X								☐ Dup ☐ MS				
3	D		"		X	X	X	X	X								☐ Dup ☐ MS				
4	E		"		X	X	X	X	X								☐ Dup ☐ MS				
5	G		"		X	X	X	X	X								☐ Dup ☐ MS				
6	H		"		X	X	X	X	X								☐ Dup ☐ MS				
7	I		"		X	X	X	X	X								☐ Dup ☐ MS				
Receipt Detail (Lab Use ONLY) Chilling Method: Frozen / Melted Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None Sample Temp at Receipt: °C °C °C Security Seal Intact (circle) Yes / No / NA/None Carrier Details: ☐ Courier/Post ☒ Client Con Note #				Packaging: (Circle) Count # # # Hard Esky Foam Esky Box/Beg/Other																	
Relinquished by: JAMES HALL-BROWN Signature: _____ Date/Time: 31/5/25 1415				Received by: _____ Signature: _____ Date/Time: _____																	
Relinquished by: _____ Signature: _____ Date/Time: _____				Received by: _____ Signature: _____ Date/Time: _____																	



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2518685**

Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: 45 LOWRY STREET PEREGIAN BEACH 4573	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: james@lithaqua.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 07 3191 9038	Telephone	: +61-7-3552-8685
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: LP140120 - NHH SURFACE WATER	Page	: 1 of 3
Order number	: ----	Quote number	: EB2017LITENV0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NHH		
Sampler	: JAMES HALL-BROWN		

Dates

Date Samples Received	: 31-May-2025 14:15	Issue Date	: 31-May-2025
Client Requested Due Date	: 09-Jun-2025	Scheduled Reporting Date	: 09-Jun-2025

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 10.6, 12.2, 15.9°C - Ice present
Receipt Detail	: HARD ESKY	No. of samples received / analysed	: 7 / 7

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**



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 - EA005P pH (Auto Titrator)	WATER - EA010P Electrical Conductivity (Auto Titrator)	WATER - EA045 Turbidity	WATER - EP008 Chlorophyll a	WATER - EP025 DO and Saturation%
EB2518685-001	31-May-2025 00:00	A	✓	✓	✓	✓	✓
EB2518685-002	31-May-2025 00:00	C	✓	✓	✓	✓	✓
EB2518685-003	31-May-2025 00:00	D	✓	✓	✓	✓	✓
EB2518685-004	31-May-2025 00:00	F	✓	✓	✓	✓	✓
EB2518685-005	31-May-2025 00:00	G	✓	✓	✓	✓	✓
EB2518685-006	31-May-2025 00:00	H	✓	✓	✓	✓	✓
EB2518685-007	31-May-2025 00:00	I	✓	✓	✓	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method		Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA005-P: pH by Auto Titrator							
A	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
C	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
D	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
F	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
G	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
H	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
I	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
EP025: Oxygen - Dissolved							
A	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
C	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
D	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
F	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
G	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
H	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗
I	Clear Plastic Bottle - Natural	----	31-May-2025	31-May-2025	✓	02-Jun-2025	✗

Requested Deliverables

JAMES HALL-BROWN

- *AU Certificate of Analysis - NATA (COA)	Email	james@liithaqua.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	james@liithaqua.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	james@liithaqua.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	james@liithaqua.com
- A4 - AU Tax Invoice (INV)	Email	james@liithaqua.com
- Chain of Custody (CoC) (COC)	Email	james@liithaqua.com
- EDI Format - XTab (XTAB)	Email	james@liithaqua.com

Issue Date : 31-May-2025
Page : 3 of 3
Work Order : EB2518685 Amendment 0
Client : LITHAQUA ENVIRONMENTAL SERVICES





QUALITY CONTROL REPORT

Work Order : **EB2518685**

Page : 1 of 3

Client : **LITHAQUA ENVIRONMENTAL SERVICES**

Laboratory : Environmental Division Brisbane

Contact : MR JAMES HALL-BROWN

Contact : Customer Services EB

Address : 45 LOWRY STREET
PEREGIAN BEACH 4573

Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : 07 3191 9038

Telephone : +61-7-3552-8685

Project : LP140120 - NHH SURFACE WATER

Date Samples Received : 31-May-2025

Order number : ----

Date Analysis Commenced : 31-May-2025

C-O-C number : ----

Issue Date : 11-Jul-2025

Sampler : JAMES HALL-BROWN

Site : NHH

Quote number : EN/222

No. of samples received : 7

No. of samples analysed : 7



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

Kim McCabe

Senior Inorganic Chemist

Brisbane Inorganics, Stafford, QLD



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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6617977)									
EB2518652-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.44	8.45	0.1	0% - 20%
EB2518652-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.46	7.48	0.3	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 6617978)									
EB2518685-004	F	EA005-P: pH Value	----	0.01	pH Unit	7.37	7.37	0.0	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6617979)									
EB2518652-002	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	1570	1520	3.0	0% - 20%
EB2518652-004	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	3800	3790	0.2	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6617980)									
EB2518685-004	F	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	343	341	0.6	0% - 20%
EA045: Turbidity (QC Lot: 6618390)									
EB2518685-001	A	EA045: Turbidity	----	0.1	NTU	13.1	12.9	1.5	0% - 20%
EP025: Oxygen - Dissolved (DO) (QC Lot: 6617254)									
EB2518685-001	A	EP025: Dissolved Oxygen - % Saturation	----	0.1	% saturation	36.3	36.3	0.0	0% - 20%



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) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 6617977)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.5	98.0	102
				----	7 pH Unit	100	98.0	102
EA005P: pH by PC Titrator (QCLot: 6617978)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.0	102
				----	7 pH Unit	100	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 6617979)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	4000 µS/cm	99.6	90.0	106
				<1	12890 µS/cm	99.2	90.0	106
EA010P: Conductivity by PC Titrator (QCLot: 6617980)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	2100 µS/cm	97.0	90.0	106
				<1	24800 µS/cm	97.3	90.0	106
EA045: Turbidity (QCLot: 6618390)								
EA045: Turbidity	----	0.1	NTU	<0.1	4 NTU	108	90.0	110
				<0.1	40 NTU	96.8	90.0	110
				<0.1	400 NTU	110	90.0	110
EP008: Chlorophyll (QCLot: 6617314)								
EP008: Chlorophyll a	----	1	mg/m³	<1	15 mg/m³	101	95.0	105

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2518685	Page	: 1 of 5
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Telephone	: +61-7-3552-8685
Project	: LP140120 - NHH SURFACE WATER	Date Samples Received	: 31-May-2025
Site	: NHH	Issue Date	: 11-Jul-2025
Sampler	: JAMES HALL-BROWN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

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.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: WATER

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	02-Jun-2025	31-May-2025	2
D,	F,						
G,	H,						
I							

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
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)		31-May-2025	----	----	----	02-Jun-2025	31-May-2025	✖
A,	C,							
D,	F,							
G,	H,							
I								
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)		31-May-2025	----	----	----	02-Jun-2025	28-Jun-2025	✔
A,	C,							
D,	F,							
G,	H,							
I								
EA045: Turbidity								
Clear Plastic Bottle - Natural (EA045)		31-May-2025	----	----	----	02-Jun-2025	02-Jun-2025	✔
A,	C,							
D,	F,							
G,	H,							
I								

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
EP008: Chlorophyll a & Pheophytin a								
White Plastic Bottle - Unpreserved (EP008)		31-May-2025	----	----	----	31-May-2025	02-Jun-2025	✓
A,	C,							
D,	F,							
G,	H,							
I								
EP025: Oxygen - Dissolved (DO)								
Clear Plastic Bottle - Natural (EP025)		31-May-2025	----	----	----	31-May-2025	31-May-2025	✓
A,	C,							
D,	F,							
G,	H,							
I								



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)							
Conductivity by Auto Titrator	EA010-P	3	23	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	3	27	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chlorophyll a and Pheophytin a	EP008	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	27	14.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	3	10	30.00	15.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chlorophyll a and Pheophytin a	EP008	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	10	10.00	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Turbidity	EA045	WATER	In house: Referenced to APHA 2130 B. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oxygen - Dissolved	EP025	WATER	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)



CERTIFICATE OF ANALYSIS

Work Order : **EB2522103**
Client : **LITHAQUA ENVIRONMENTAL SERVICES**
Contact : MR JAMES HALL-BROWN
Address : 45 LOWRY STREET
PEREGIAN BEACH 4573
Telephone : 07 3191 9038
Project : NHH SURFACE WATER LP140120
Order number : ----
C-O-C number : ----
Sampler : JAMES HALL-BROWN
Site : NORTH HARBOUR
Quote number : EN/222
No. of samples received : 7
No. of samples analysed : 7

Page : 1 of 4
Laboratory : Environmental Division Brisbane
Contact : Customer Services EB
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3552-8685
Date Samples Received : 26-Jun-2025 13:14
Date Analysis Commenced : 28-Jun-2025
Issue Date : 11-Jul-2025 10:58



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
Beatriz Llarinas	Senior Chemist	Brisbane Inorganics, Stafford, QLD



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. are fully validated and are often at the client request.

In house developed procedures

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

				A	C	D	F	G
Sampling date / time				26-Jun-2025 00:00	26-Jun-2025 00:00	26-Jun-2025 00:00	26-Jun-2025 00:00	26-Jun-2025 00:00
Compound	CAS Number	LOR	Unit	EB2522103-001	EB2522103-002	EB2522103-003	EB2522103-004	EB2522103-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.70	7.61	7.65	8.00	7.80
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	268	10600	1630	369	22600
EA045: Turbidity								
Turbidity	----	0.1	NTU	6.3	5.9	1.6	2.8	5.3
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	3	1	<1	1	5
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen	----	0.1	mg/L	5.1	7.3	6.5	5.6	7.7
Dissolved Oxygen - % Saturation	----	0.1	% saturation	57.9	83.3	73.8	63.3	88.2



Analytical Results

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

Sample ID

				H	I	----	----	----
Sampling date / time				26-Jun-2025 00:00	26-Jun-2025 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2522103-006	EB2522103-007	-----	-----	-----
				Result	Result	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.90	7.80	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	2280	49400	----	----	----
EA045: Turbidity								
Turbidity	----	0.1	NTU	9.9	2.2	----	----	----
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	11	<1	----	----	----
EP025: Oxygen - Dissolved (DO)								
Dissolved Oxygen	----	0.1	mg/L	6.8	8.7	----	----	----
Dissolved Oxygen - % Saturation	----	0.1	% saturation	77.9	99.0	----	----	----

Mandatory Fields				CHAIN OF CUSTODY										Page 1 of 1																																																																																																																																																																																												
CLIENT CODE: LITENV				*PROJECT MANAGER: JAMES HALL-BROWN				SAMPLER: J. HALL-BROWN						CoC #: (if applicable)																																																																																																																																																																																												
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*INVOICE TO: (client default if nil) james@lithagua.com								☐ CC Invoice to PM						BIOSECURITY																																																																																																																																																																																												
*EMAIL REPORTS TO: (default to PM if blank) //								*ANALYSIS REQUIRED (NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price) Where Metals are required, specify Total (undiluted bottle required) or Dissolved (fold filtered bottle required). Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.						Country of Origin: (if not Australia)																																																																																																																																																																																												
*STORAGE REQUIREMENTS Please check box. ☒ Standard Storage ☐ Extended Storage Standard Storage time from receipt of samples: Waters - 3 weeks Soils - 2 months Specify Disposal Date: Note: Extended storage incurs a fee and requires a signed agreement.				*TURNAROUND Please check box. ☒ 5+ days (no surcharge) ☐ 3 day (+15%) ☐ 2 day (+30%) ☐ 1 day (+50%) (Not all tests can be expedited, contact Client Services for more information)				CHLORO PHYL-CX PH EC DO (% only) TURBIDITY						Environmental Division Brisbane Work Order Reference EB2522103  Telephone : 61-7-3552-8688																																																																																																																																																																																												
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Receipt Detail (Lab Use ONLY)		Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None			Sample Temp at Receipt: °C °C °C		Security Seal Intact (circle) Yes / No / NA(None)		Carrier Details: ☐ Courier/Post ☒ Client		Packaging: (circle) Count # # #		Hard Esky Foam Esky Box/Bag/Other																																																																																																																																																																																													
Relinquished by: J. HALL-BROWN Signature: _____		Date/Time: 26/6/25 1305		Received by: Alison Signature: _____		Date/Time: 26.06.25 13:14																																																																																																																																																																																																				
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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2522103**

Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Contact	: Customer Services EB
Address	: 45 LOWRY STREET PEREGIAN BEACH 4573	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: james@lithaqua.com	E-mail	: ALSEnviro.Brisbane@alsglobal.com
Telephone	: 07 3191 9038	Telephone	: +61-7-3552-8685
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: NHH SURFACE WATER LP140120	Page	: 1 of 2
Order number	: ----	Quote number	: EB2017LITENV0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: NORTH HARBOUR		
Sampler	: JAMES HALL-BROWN		

Dates

Date Samples Received	: 26-Jun-2025 13:14	Issue Date	: 28-Jun-2025
Client Requested Due Date	: 04-Jul-2025	Scheduled Reporting Date	: 04-Jul-2025

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 12.7°C, 13.0°C, 18.7°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 7 / 7

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**



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 - EA005P pH (Auto Titrator)	WATER - EA010P Electrical Conductivity (Auto Titrator)	WATER - EA045 Turbidity	WATER - EP008 Chlorophyll a	WATER - EP025 DO and Saturation% DO and DO Saturation%
EB2522103-001	26-Jun-2025 00:00	A	✓	✓	✓	✓	✓
EB2522103-002	26-Jun-2025 00:00	C	✓	✓	✓	✓	✓
EB2522103-003	26-Jun-2025 00:00	D	✓	✓	✓	✓	✓
EB2522103-004	26-Jun-2025 00:00	F	✓	✓	✓	✓	✓
EB2522103-005	26-Jun-2025 00:00	G	✓	✓	✓	✓	✓
EB2522103-006	26-Jun-2025 00:00	H	✓	✓	✓	✓	✓
EB2522103-007	26-Jun-2025 00:00	I	✓	✓	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

JAMES HALL-BROWN

- *AU Certificate of Analysis - NATA (COA)	Email	james@lithaqua.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	james@lithaqua.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	james@lithaqua.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	james@lithaqua.com
- A4 - AU Tax Invoice (INV)	Email	james@lithaqua.com
- Chain of Custody (CoC) (COC)	Email	james@lithaqua.com
- EDI Format - XTab (XTAB)	Email	james@lithaqua.com



QUALITY CONTROL REPORT

Work Order : **EB2522103**

Page : 1 of 3

Client : **LITHAQUA ENVIRONMENTAL SERVICES**

Contact : MR JAMES HALL-BROWN

Address : 45 LOWRY STREET
PEREGIAN BEACH 4573

Telephone : 07 3191 9038

Project : NHH SURFACE WATER LP140120

Order number : ----

C-O-C number : ----

Sampler : JAMES HALL-BROWN

Site : NORTH HARBOUR

Quote number : EN/222

No. of samples received : 7

No. of samples analysed : 7

Laboratory : Environmental Division Brisbane

Contact : Customer Services EB

Address : 2 Byth Street Stafford QLD Australia 4053

Telephone : +61-7-3552-8685

Date Samples Received : 26-Jun-2025

Date Analysis Commenced : 28-Jun-2025

Issue Date : 11-Jul-2025



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
Beatriz Llarinas	Senior Chemist	Brisbane Inorganics, Stafford, QLD



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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 6684961)									
EB2522072-008	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.13	8.23	1.2	0% - 20%
EB2522093-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.02	8.02	0.0	0% - 20%
EA005P: pH by PC Titrator (QC Lot: 6684962)									
EB2522103-007	I	EA005-P: pH Value	----	0.01	pH Unit	7.80	7.90	1.3	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6684963)									
EB2522072-008	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	759	772	1.6	0% - 20%
EB2522093-010	Anonymous	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	55200	55500	0.5	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 6684964)									
EB2522103-007	I	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	49400	51100	3.5	0% - 20%
EA045: Turbidity (QC Lot: 6681512)									
EB2522103-001	A	EA045: Turbidity	----	0.1	NTU	6.3	6.3	0.0	0% - 20%
EP025: Oxygen - Dissolved (DO) (QC Lot: 6680933)									
EB2522103-001	A	EP025: Dissolved Oxygen - % Saturation	----	0.1	% saturation	57.9	57.9	0.0	0% - 20%
		EP025: Dissolved Oxygen	----	0.1	mg/L	5.1	5.1	0.0	0% - 20%
EB2522118-004	Anonymous	EP025: Dissolved Oxygen - % Saturation	----	0.1	% saturation	104	104	0.0	0% - 20%
		EP025: Dissolved Oxygen	----	0.1	mg/L	9.3	9.3	0.0	0% - 20%



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) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EA005P: pH by PC Titrator (QCLot: 6684961)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.0	102
				----	7 pH Unit	99.7	98.0	102
EA005P: pH by PC Titrator (QCLot: 6684962)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.0	102
				----	7 pH Unit	99.7	98.0	102
EA010P: Conductivity by PC Titrator (QCLot: 6684963)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	4000 µS/cm	97.8	90.0	106
				<1	58900 µS/cm	103	90.0	106
EA010P: Conductivity by PC Titrator (QCLot: 6684964)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	2100 µS/cm	97.0	90.0	106
				<1	24800 µS/cm	102	90.0	106
EA045: Turbidity (QCLot: 6681512)								
EA045: Turbidity	----	0.1	NTU	<0.1	4 NTU	109	90.0	110
				<0.1	40 NTU	108	90.0	110
				<0.1	400 NTU	102	90.0	110
EP008: Chlorophyll (QCLot: 6681458)								
EP008: Chlorophyll a	----	1	mg/m³	<1	15 mg/m³	104	95.0	105
EP008: Chlorophyll (QCLot: 6681459)								
EP008: Chlorophyll a	----	1	mg/m³	<1	15 mg/m³	105	95.0	105

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.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2522103	Page	: 1 of 5
Client	: LITHAQUA ENVIRONMENTAL SERVICES	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES HALL-BROWN	Telephone	: +61-7-3552-8685
Project	: NHH SURFACE WATER LP140120	Date Samples Received	: 26-Jun-2025
Site	: NORTH HARBOUR	Issue Date	: 11-Jul-2025
Sampler	: JAMES HALL-BROWN	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 7

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.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: WATER

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	02-Jul-2025	26-Jun-2025	6
D,	F,						
G,	H,						
I							
EA045: Turbidity							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	29-Jun-2025	28-Jun-2025	1
D,	F,						
G,	H,						
I							
EP008: Chlorophyll a & Pheophytin a							
White Plastic Bottle - Unpreserved							
A,	C,	----	----	----	29-Jun-2025	28-Jun-2025	1
D,	F,						
G,	H,						
I							
EP025: Oxygen - Dissolved (DO)							
Clear Plastic Bottle - Natural							
A,	C,	----	----	----	28-Jun-2025	26-Jun-2025	2
D,	F,						
G,	H,						
I							

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

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
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)		26-Jun-2025	----	----	----	02-Jul-2025	26-Jun-2025	✘
A,	C,							
D,	F,							
G,	H,							
I								
EA010P: Conductivity by PC Titrator								
Clear Plastic Bottle - Natural (EA010-P)		26-Jun-2025	----	----	----	02-Jul-2025	24-Jul-2025	✔
A,	C,							
D,	F,							
G,	H,							
I								
EA045: Turbidity								
Clear Plastic Bottle - Natural (EA045)		26-Jun-2025	----	----	----	29-Jun-2025	28-Jun-2025	✘
A,	C,							
D,	F,							
G,	H,							
I								
EP008: Chlorophyll a & Pheophytin a								
White Plastic Bottle - Unpreserved (EP008)		26-Jun-2025	----	----	----	29-Jun-2025	28-Jun-2025	✘
A,	C,							
D,	F,							
G,	H,							
I								
EP025: Oxygen - Dissolved (DO)								
Clear Plastic Bottle - Natural (EP025)		26-Jun-2025	----	----	----	28-Jun-2025	26-Jun-2025	✘
A,	C,							
D,	F,							
G,	H,							
I								



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)							
Conductivity by Auto Titrator	EA010-P	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Oxygen - Dissolved	EP025	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	3	22	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chlorophyll a and Pheophytin a	EP008	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	4	22	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	4	22	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	3	9	33.33	15.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chlorophyll a and Pheophytin a	EP008	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Conductivity by Auto Titrator	EA010-P	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Turbidity	EA045	1	9	11.11	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Conductivity by Auto Titrator	EA010-P	WATER	In house: Referenced to APHA 2510 B. This procedure determines conductivity by automated ISE. This method is compliant with NEPM Schedule B(3)
Turbidity	EA045	WATER	In house: Referenced to APHA 2130 B. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oxygen - Dissolved	EP025	WATER	In house: Referenced to APHA 4500-O G. Dissolved Oxygen Probe. This method is compliant with NEPM Schedule B(3)