

Clyde Western Area Remediation Project (WARP) SSD-9302

Annual Report

Reporting Period: 01 July 2022 to 30 June 2023

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1 Introduction

Viva Energy Australia Pty Ltd (Viva Energy) operates the Clyde Terminal located at Durham Street, Rosehill on the Camellia Peninsula. These operations previously included the former Clyde Refinery land in the south-western part of the Site (the 'Western Area'). Viva Energy is undertaking the remediation of contaminated soils in the Western Area to a standard suitable for future commercial / industrial land uses.

The Western Area Remediation Project (WARP) was designated state significant development due to the scale of the proposed works and an Environmental Impact Statement (EIS) was prepared. On 7 May 2020, The Minister for Planning and Places approved the development application (SSD 9302) for the Clyde WARP.

The Clyde Terminal site and the Western Area are shown in Figure 1.

Viva Energy are proposing to stage the remediation of the Western Area as follows:

- Stage 1 – Former Process West (completed)
- Stage 2 – Former Utilities and Movements (completed, with the exception of the Lot 64 area)
- Stage 3 – Former Process East (planned for 2024)

The Stage 1 to 3 areas are shown in Figure 2.

Remediation of the Stage 1 area was completed between October 2020 and February 2021. A Site Audit Statement (SAS) No. 055/2127799 was issued in February 2021 confirming the successful completion of remediation works and the suitability of the Stage 1 area for future commercial / industrial land uses.

Remediation of the Stage 2 area was completed between September 2021 and May 2022. Site Audit Statements were issued for the following sub-stages of Stage 2, confirming successful completion of remediation works and the suitability of the Stage 2 areas for future commercial / industrial land uses.

- Audit Area 1 (AA1): Site audit statement no. 068-2127799, issued on 23 December 2021.
- Audit Area 2 (AA2): Site audit statement no. 072-2127799, issued on 14 April 2022.
- Audit Area 3 (AA3): Site audit statement no. 075-2127799, issued on 14 June 2022.

A proposed subdivision of Stage 2, known as Lot 64 located in the southern portion of Stage 2, has been subject to planning, design and contractor selection for the construction of an engineered cap and in-situ management.

No on-site remediation works were conducted during the reporting period. Completion of remediation works in Lot 64 is planned to be completed in late 2023 to mid-2024 and will be reported in the next annual report.

Figure 3 illustrates the audit areas and proposed subdivision lots for the Stage 2 works.

The content of this Annual Report provides relevant details of the Stage 2 remediation works and meets the requirements of SSD 9302 condition C12. Table 1 below lists the requirements and the corresponding sections where each specific requirement is addressed.

Table 1: Annual review and reporting requirements

Condition C12 requirement	Report section
Within 12 months of the commencement of the remediation works, and every year thereafter until the completion of demobilisation, or other timing as may be agreed by the Planning Secretary, the Applicant shall review and report on the environmental performance of the development. The report shall:	
(a) be submitted to the Planning Secretary and EPA;	
(b) describe the works that were carried out in the previous year and the works to be carried out in the coming year;	Section 2
(c) include a comprehensive review of the monitoring results and complaints records of the development over the previous year, to demonstrate the effectiveness of the remediation works, including a comparison of: <ul style="list-style-type: none"> i. air quality monitoring data with relevant limits or performance measures/criteria; ii. water discharges with established discharge criteria for contaminants of concern; iii. groundwater monitoring data with background data and trigger levels established in accordance with condition B22; iv. detail community consultation activities during the year, including any alterations to works or mitigation measures implemented to address community concerns; 	Section 3
(d) identify any non-compliances over the last year, and describe what actions were (or are being) taken to ensure compliance; and	Section 4
(e) describe what contingency measures would be implemented over the coming year to improve the environmental performance of the Development, should any issues be identified with the effectiveness of the remediation works.	Section 5

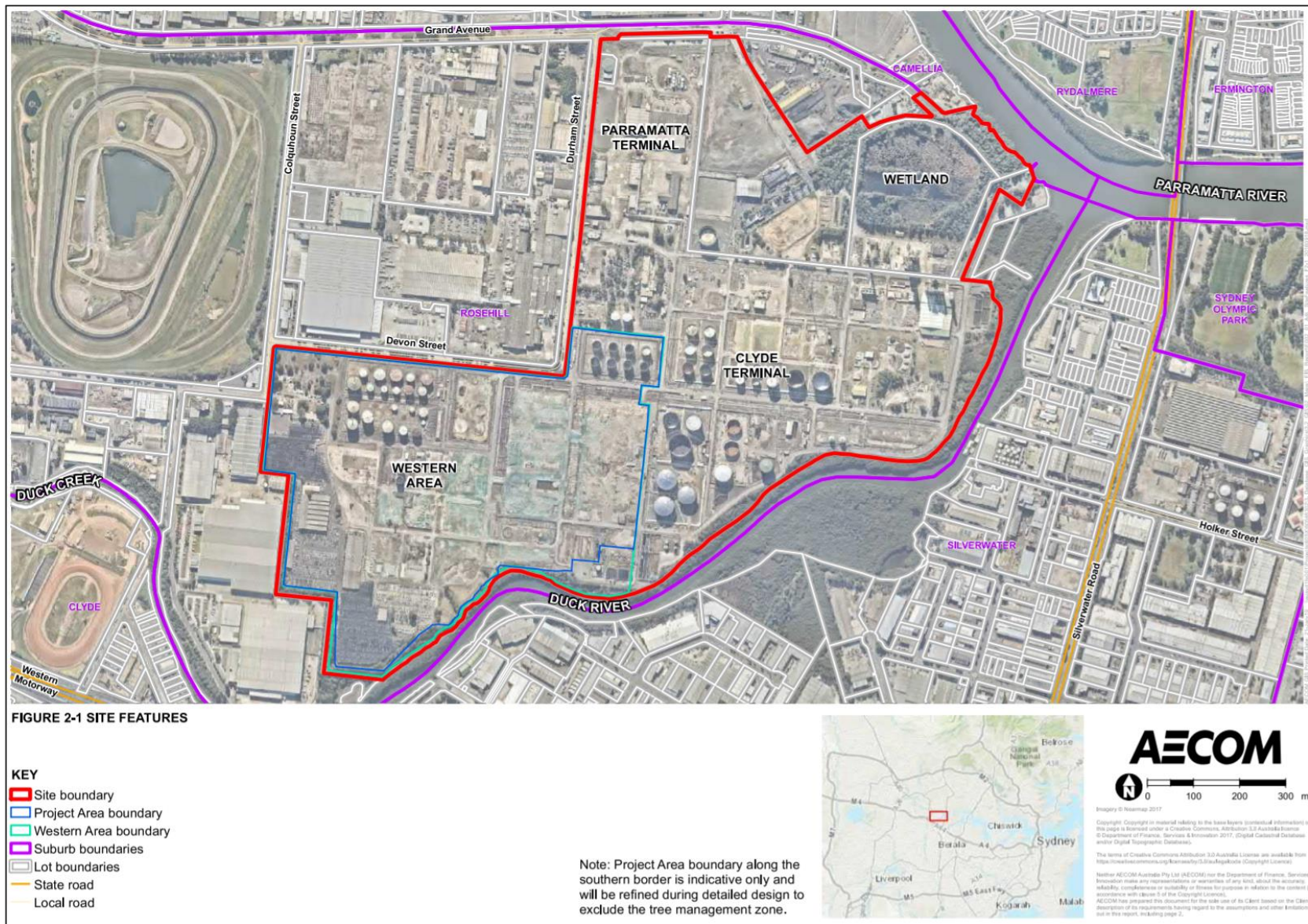


Figure 1 – Clyde Terminal and the Western Area

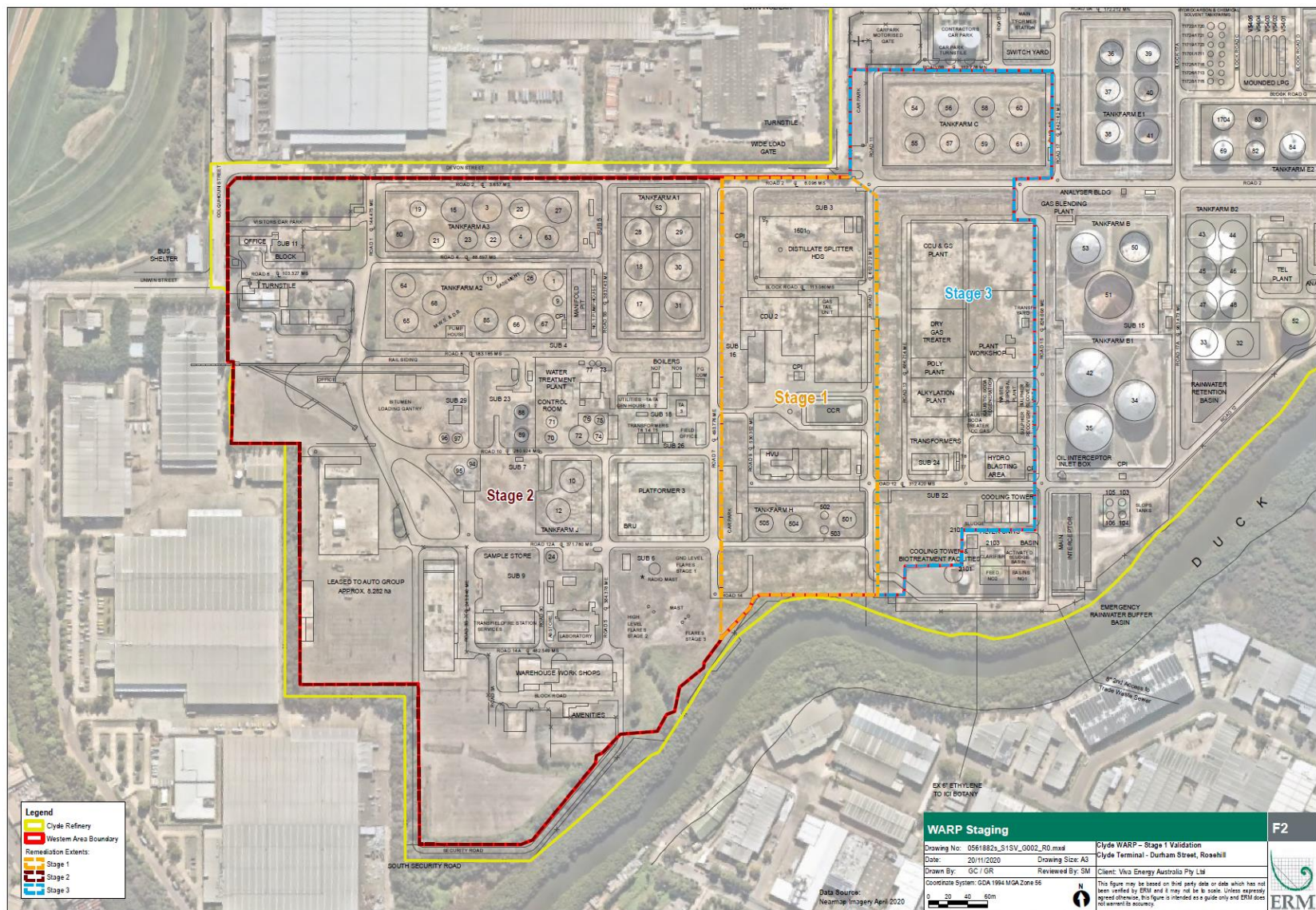


Figure 2 – Clyde WARP Stages 1, 2 and 3

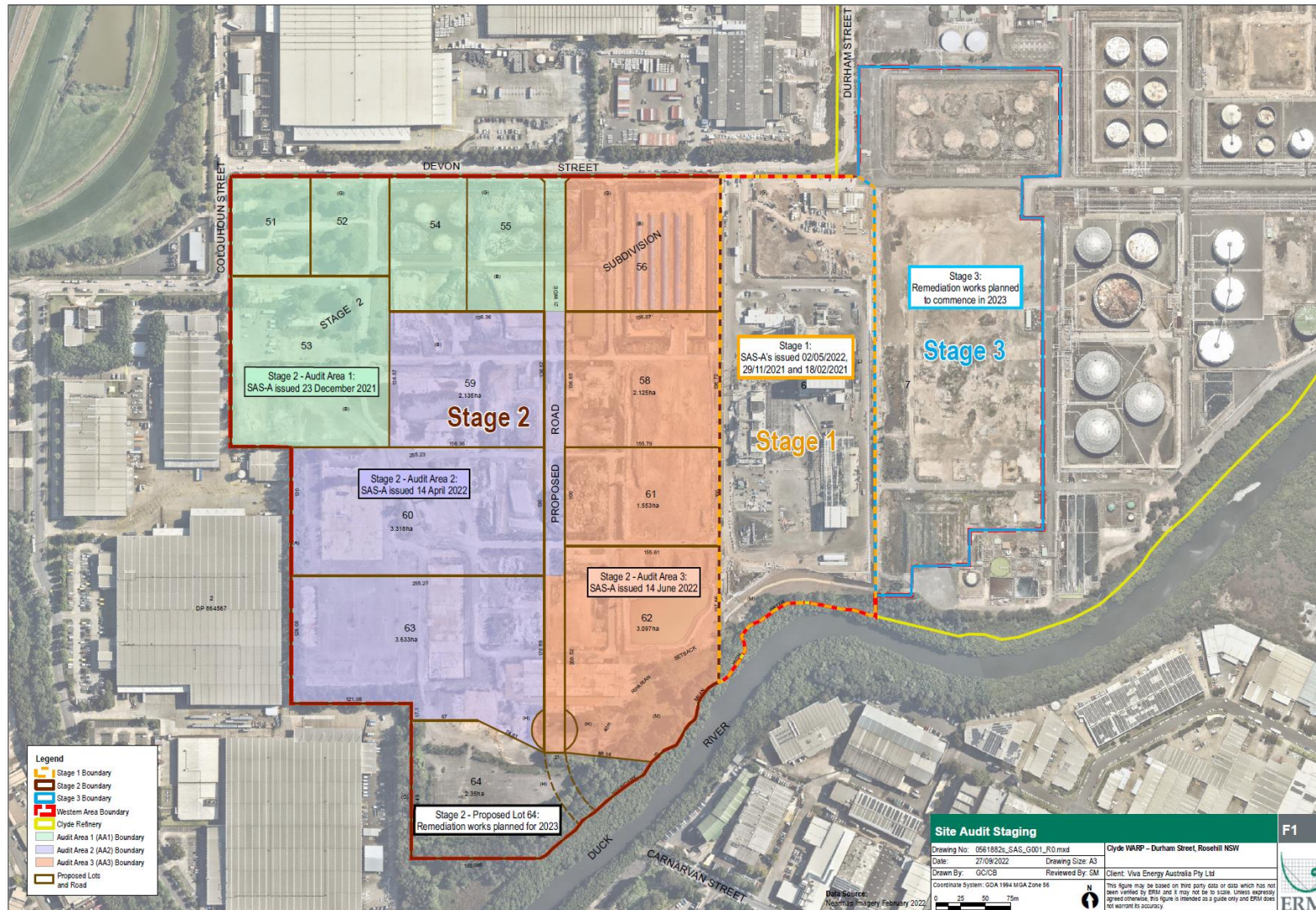


Figure 3 – Stage 2 Site audit staging

2 Works undertaken

This Section describes the works undertaken in accordance with Development Consent SSD 9302 during the period 1 July 2022 to 30 June 2023.

2.1 Remediation works

No physical remediation works associated with Development Consent SSD 9302 were conducted during the reporting period.

Planning works associated with the proposed capping installation works undertaken within the reporting period included:

- Preparation of a technical specification
- Preparation of capping and pavement design
- Contractor tendering and procurement

2.2 Erosion and sediment control works

To ensure adequate surface water management across the Stage 2 area, an erosion and sediment control plan (ESCP) including the construction of a sediment basin, was submitted to DPE as part of an update to the Stage 1 REMP and Soil and Water Management Plan. These plans were approved by the Planning Secretary on 9 April 2021.

Following approval of these plans, a sediment basin was constructed in the southern part of the Stage 2 area during May and June 2021. The sediment basin was designed and constructed in general accordance with the requirements from 'Managing Urban Stormwater: Soils and Construction – Volume 1: Blue Book (Landcom 2004)'.

The sediment basin remained in place throughout this reporting period and continues to operate in accordance with its design.

3 Environmental performance

3.1 Air

As no remediation works were undertaken within this reporting period, air quality management and monitoring was not required to be undertaken.

Dust suppression was applied periodically and no dusty conditions were observed onsite during the reporting period.

3.2 Water

No management or monitoring of water was required to be undertaken during this annual reporting period.

3.3 Groundwater

During the reporting period, groundwater was monitored in accordance with the Remediation Environmental Management Plan (REMP) and the Groundwater Monitoring and Management Plan (GMP).

A description of the monitoring undertaken and a summary of results is provided in **Appendix A.1**

3.4 Community consultation

Prior to the commencement of the Stage 2 remediation activities, a Community Update newsletter/flyer was prepared and physically distributed to approximately 2330 residents and businesses within a 2km (approx.) radius of the Site.

The Community Update (dated August 2021) was also loaded onto the Viva Energy website at the following location: <https://www.vivaenergy.com.au/operations/clyde>

No concerns in relation to the remediation works have been raised by any members of the community. Accordingly, no alterations to works or implementation of mitigation measures were required as a result of any issue raised by the community.

4 Non-compliances

No reportable incidents or non-compliances occurred relating to consent conditions during this reporting period.

No non-compliances with the Clyde Terminal licence conditions (EPL570) occurred during the reporting period.

5 Contingency measures

Environmental performance for Stage 2 of the Clyde WARP (this reporting period) has been compliant and consistent with the statutory requirements and limits.

There were no issues identified with the effectiveness of the remediation works that warranted the consideration or implementation of any contingency measures.

Appendix A

A.1 Summary of groundwater monitoring results

A.1 Summary of groundwater monitoring results

ERM was engaged by Viva Energy to complete groundwater monitoring requirements in accordance with the approved Groundwater Monitoring and Management Plan (GMP) and the associated Groundwater Monitoring Program (GWMP) for Stage 2 of the WARP (ERM, 2021¹). The groundwater monitoring program included the following:

Existing groundwater monitoring wells were selected for gauging and sampling based on the following objectives:

- Establish baseline dataset to support proposed remedial works for the Southern Buried Waste Area within Lot 64, referred to as 'Area of Environmental Concern 4' (AEC-4) and confirm no off-site risks (human health, ecological) to the Duck River.

As no remediation was undertaken within the reporting period, 'Monitoring during Remediation' as per the GWMP was not required to be undertaken.

Post remediation groundwater monitoring requirements for Stage 2 were previously completed (detailed in the previous annual report) and therefore were not required.

Two Groundwater Monitoring Events (GMEs) were completed within the Stage 2 Area during the reporting period to satisfy Condition B22 of the Conditions of Consent for the Project:

- Quarter 4 (2022) GME (November 2022);
- Quarter 2 (2023) GME (June 2023);

Monitoring of groundwater conditions for concentrations of petroleum hydrocarbon based contaminants of concern has identified the following conclusions in relation to the Stage 2 Area:

- Ongoing monitoring was undertaken in general accordance with the Site Auditor Approved GWMP and met the requirements of B22 of the Conditions of Consent for the Project.
- Potential risks to human health or the environment, including the Duck River have not been identified from groundwater on site;
- The distribution of light non-aqueous phase liquid (LNAPL) and nature and extent of dissolved phase hydrocarbon concentrations remain consistent and do not indicate adverse changes to groundwater conditions following completion of remediation works;
- Natural attenuation of petroleum hydrocarbons in groundwater down-gradient of residual hydrocarbon sources is evident through a high proportion of polar hydrocarbon degradation by-products when compared with total recoverable hydrocarbon (TRH) concentrations post silica gel clean-up; and
- The current groundwater monitoring well network is considered appropriate for implementation of the post-remediation monitoring (as detailed within the Groundwater Monitoring and Management Plan).

Groundwater data collected from AEC-4 during Q2 2023 supports the proposed remediation approach of '*in-situ management under engineered cap*' for the AEC-4 / Lot 64 area. No changes to this approach are considered warranted based on the delineation and stability of LNAPL and dissolved phase groundwater concentrations of Contaminants of Concern.

The above findings are consistent with groundwater monitoring events undertaken for the subject wells in recent years.

¹ ERM (2021) Clyde Western Area Remediation Project – Groundwater Monitoring Program – Stage 2. Final, Revision 3, dated 14 July 2021.

Detailed interpretation and presentation of groundwater data obtained post the Stage 2 remediation works is detailed within the following reports:

- “Clyde Western Area Remediation Project – Quarter 4 (2022) Stage 2 Groundwater Monitoring Report”, prepared by ERM and dated 20 March 2023.
- “Clyde Western Area Remediation Project – Quarter 2 (2023) Stage 2 Groundwater Monitoring Report”, prepared by ERM and dated 15 September 2023.

Contingency Actions

The implementation of contingency items (as per Section 3.7 of the GWMP) were not warranted as no adverse changes to environmental conditions or risk to off-site receptors were identified.