

Department of Planning and Environment
submitted via Major Projects Portal

Assessment of the Greater Ravensworth Area Water and Tailing Scheme (Stage 2) - Liddell Coal Operations, Mount Owen Complex, Ravensworth Coal Mine

I refer to the planning assessment submissions, dated 12 August 2022, seeking the Environment Protection Authority's (**EPA**) assessment of the Greater Ravensworth Area Water and Tailings Scheme (**GRAWTS**) 'Stage 2' proposal.

The application is detailed in the report '*Greater Ravensworth Area Water and Tailings Scheme Modification – Modification Report*', (**Modification Report**) dated 10 June 2022 and prepared by James Bailey & Associates Pty Ltd. The GRAWTS involves the transfer of water and tailings across multiple separate coal mine operations, and the GRAWTS Stage 2 application involves modification applications for several of those associated mines. The various modification applications associated under the GRAWTS Stage 2 proposal are:

- Liddell Coal Operations – Modification 8 (DA 305-11-01-Mod 8)
- Mount Owen Complex – Modification 7 (SSD-5850-Mod 7)
- Ravensworth Coal Mine – Modification 4 (MP09_0176-Mod 4)

Given the linkages between the sites under the GRAWTS Stage 2 application, the EPA provides this consolidated response addressing all three of the modification applications jointly.

Summary of proposal

The key aspects of the proposal are:

- Transfer of tailings from Ravensworth Operations (**RO**) and Mount Owen Complex (**MOC**) to Liddell Coal Operations (**LCO**) for emplacement in the South Cut Void
- LCO to receive tailings from other mining operations (subject to those operations obtaining approval to transfer tailings to LCO)
- Continuation of the existing approved transfers of tailings from RO and LCO to MOC for the life of those operations
- Construction of minor ancillary infrastructure including a flocculation plant (or similar water treatment facilities), water reticulation staging station, and additional pipelines, powerlines and access roads
- Removal of volumetric limits on approved water transfers between LCO, MOC and RO
- Use of the Entrance Void at LCO as a water storage for the GRAWTS.

The EPA has reviewed the proposal and provides the following comments.

1 Tailing Emplacement in the South Cut Void

The applications propose the transfer of tailings from RO and MOC to LCO for emplacement in the South Cut Void. The modification also proposes tailings from other coal mining operations to be received at LCO, however notes that will be subject to those other mining operations obtaining the relevant approvals.

The Modification Report provides some detail on tailings treatment prior to final emplacement. This involves end-of-pipe treatment via a new flocculation plant to facilitate secondary flocculation of tailings if required.

The EPA’s assessment of the tailings emplacement in the South Cut Void was limited to environmental assessment factors and does not include a thorough review of dam design and structural integrity or any other engineering specification matters.

The EPA notes an area of the South Cut Void, identified as the South Pit Tailings Dam, was previously approved as a tailings emplacement area from Liddell’s Modification 5 (DA 305-11-01-Mod 5, determined 1 December 2014). The South Pit Tailings Dam is a tailings cell within the upper levels of the South Cut Void, and Liddell currently has approval to place up to 1.34 million m³ into the South Pit Tailing Dam.

The predicted tailings transfer volumes are provided in the Modification Report at Table 3-2:

Table 3-2 Estimated Tailings Transfer Volumes

Transfer Pathway	Estimated Volume (Mm³)
RO to MOC*	12.5
LCO to MOC*	2.0
RO to LCO	16.5
MOC to LCO	7.2

* Continuation of GRAWTS Stage 1 activity

South Cut Void has approximately 67 Mm³ tailings storage capacity, and the table above indicates that tailings from RO and MOC would contribute approximately 23.7 Mm³ to the South Cut Void.

The EPA reviewed Liddell’s current Water Management Plan (version 13.0, dated 1 July 2021) and notes Liddell’s groundwater monitoring program currently involves 18 monitor locations addressing the Bowmans Creek Alluvium and the hard rock (coal measure) aquifers. A number of these monitors are in positions that would likely identify any outflow from the South Cut Void towards the proposed Glendell Continued Operations Project.

Appendix B of the Modification Report is a Groundwater Impact Assessment (**GIA**), dated 10 June 2022 and prepared by Australasian Groundwater and Environmental Consultants Pty Ltd. Section 5 of the GIA states “Based on the assessment conclusions it is recommended additional monitoring sites will be installed around the proposed final voids. The sites should be determined in consultation with DPIE, and the GWMP updated to include Trigger Action Response Plans for tailings and leakage”.

The EPA does not object to the use of the South Cut Void as a tailings emplacement area. To ensure the groundwater monitoring regime currently required under the sites Water Management Plan is sufficient to detect any potential outflow issues from the South Cut Void, or to determine if additional groundwater monitoring is required, the EPA recommends the following condition in relation to Liddell Coal Operations DA 305-11-01.

Recommended Condition for Liddell Coal Operations (DA 305-11-01)

- 1) The proponent engages the services of a NSW EPA accredited site auditor to undertake a section B2 site audit to determine the appropriateness of the groundwater management plan (Water Management Plan, version 13.0 dated 1 July 2021). The Site Audit Statement (SAS) and Site Audit Report (SAR) must be provided to the Department of Planning and Environment prior to Liddell Coal Operations receiving any tailings from other mining operations, and the SAS/SAR must be made available to the NSW EPA upon request.

2 Proposed removal of water transfer volume limits

The GRAWTS Stage 2 application proposes the removal of volumetric limitations on water transfer with the surrounding mines. As none of the three relevant Environment Protection Licences (Liddell Coal Operations EPL 2094, Ravensworth Operations EPL 2652, or Mount Owen Complex EPL 4460) currently include licence conditions limiting water transfer volumes through the GRAWTS, this appears to be a development consent condition issue.

The EPA raises no objection to the removal of volumetric flow rate limits associated with the GRAWTS, noting the daily transfer volumes will be limited primarily by pipeline specifications and associated pumping infrastructure.

Section 3.3 of the Modification Report confirms that the previous environmental assessment reports for the various coal mine approvals and modifications specified volumetric flow rates for certain transfers. The report states “these flow rates (listed in **Table 3-3**) are indicative predictions, rather than limitations on water transfers between the GRAWTS participants. Given that all water transfers are conducted via enclosed pipelines, there will be no environmental impacts associated with pumping volumes or rates, and as such, this Modification seeks that there are no such limits imposed on water transfers.”

Table 3-3 Water Transfers Between Greater Ravensworth Area Operations

Relationship	Previously Specified Water Transfers	Relevant Approvals	Clarification Sought by the Modification
RO and MOC	Transfer of up to 8.6 ML/day between the sites (bi-directional)	PA 09_0176 SSD-5850	Remove the 8.6 ML/day transfer limit
RO and LCO	Unlimited transfer of water from LCO to RO	DA 305-11-01 Mod 5 PA 09_0176	Express clarification that water transfer between LCO and RO is bi-directional
LCO and MOC	Transfer of up to 3.3 ML/day from LCO to MOC	DA 305-11-01 Mod 5 SSD-5850	Express clarification that water transfer between LCO and MOC is bi-directional. Remove transfer rate limit of 3.3 ML/day
MOC and Integra	Transfer of up to 130 L/s from Integra to MOC	SSD-5850 Mod 1 PA 08_0101 Mod 6	No change

The EPA considers the efficient use of resources through the sharing of water between the mines for environmental and operational purposes is consistent with the objectives of the *Waste Avoidance and Resource Recovery Act 2001*.

If you have any questions about this matter, please contact Michael Howat on (02) 4908 6819 or by email at info@epa.nsw.gov.au.

Yours sincerely

JENNY LANGE
Unit Head
Regional Operations

Dated: 30 August 2022