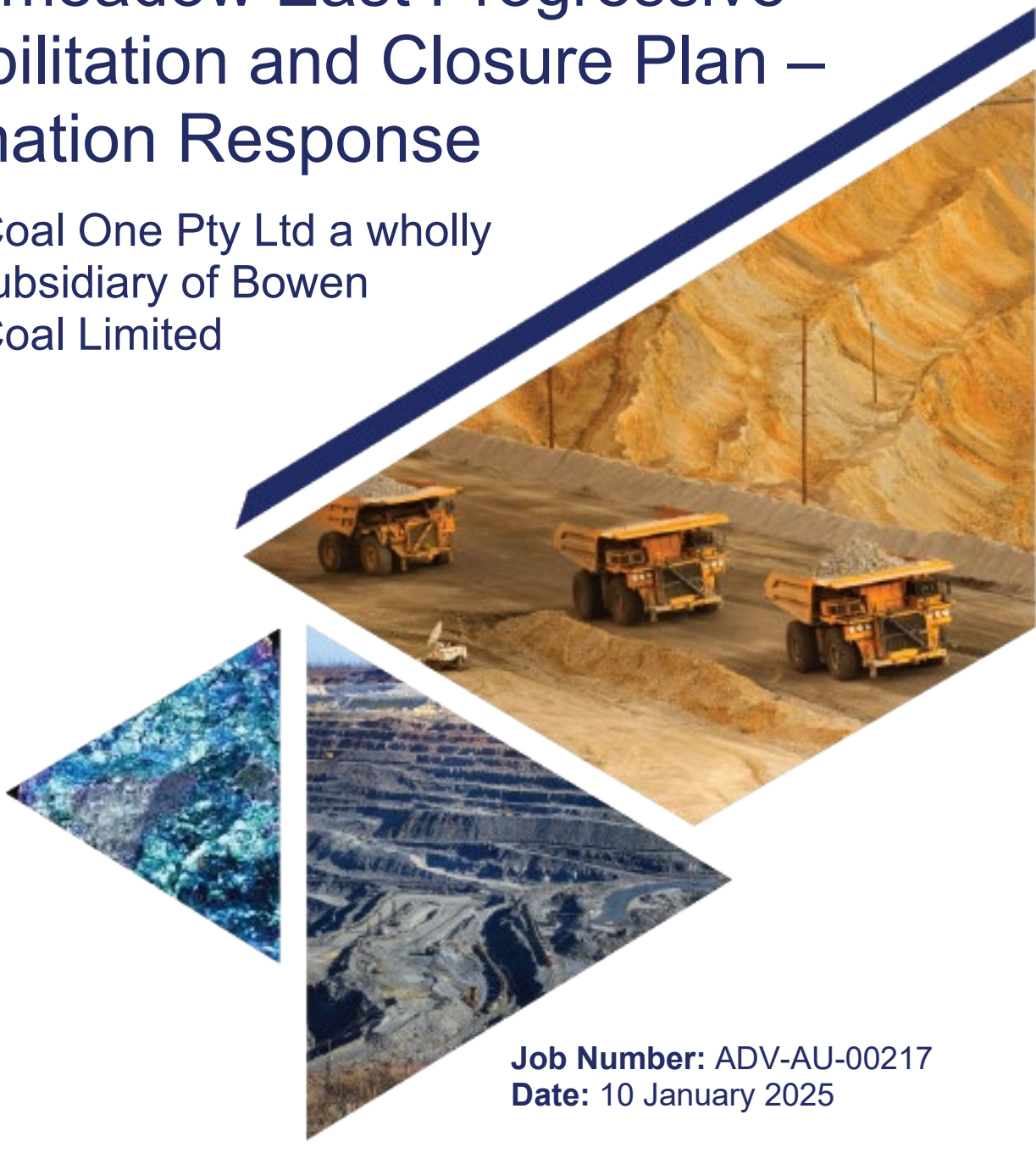
RPMGLOBAL

Broadmeadow East Progressive Rehabilitation and Closure Plan – Information Response

Coking Coal One Pty Ltd a wholly owned subsidiary of Bowen Coking Coal Limited



Job Number: ADV-AU-00217
Date: 10 January 2025

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Report Name	**Date**
Broadmeadow East Progressive Rehabilitation and Closure Plan – Information Response	10 January 2025
Job No.	**Revision No.**
ADV-AU-00217	Version 1
File Name:	
EA0002465 BME PRCP RFI Response	

Authorisations			
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Appendix A. Important information about this document

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1. Introduction

RPM Advisory Services Pty Ltd (“RPM”) has been engaged by Coking Coal One Pty Ltd ("CCO" or the "Proponent') for the purpose of compiling a Progressive Rehabilitation and Closure Plan (“PRCP” or “PRC Plan”) and schedule application package including response to any Information Request (IR) from the relevant administering authority in relation to the Broadmeadow East Mine ("BME" or the "Mine"). The Mine is authorised by site specific environmental authority EA0002465 issued to Coking Coal One Pty Ltd on 6 December 2024 for Mining Lease (ML) 70257.

1.1 Proponent

The Proponent is Coking Coal One Pty Ltd, a wholly owned subsidiary of Bowen Coking Coal Limited (BCC). The registered address for the Proponent is:

Level 4, 167 Eagle Street

Brisbane City, QLD 4000

ABN: 72 064 874 620

Contact: Michael McKee, Chief Operating Officer.

1.2 The Project

BME is entirely within Mining Lease (ML) 70257, located 35 km north of the Moranbah township and 120 km southwest of Mackay by road in the northern section of the Queensland Bowen Basin. The area within the ML is dominated by sparse open vegetation communities, which have been historically cleared and predominantly utilised as pastoral land. Despite this history of disturbance, several patches of remnant vegetation remain within the ML, including an undisturbed area in the southwestern corner and riparian vegetation associated with Hat Creek and Teviot Brook, which both flow in a westerly direction. The primary land uses in the region surrounding the Mine are a combination of coal mining, coal seam gas extraction and livestock grazing. The two nearest sensitive receptors are approximately 10 km from the centre of the ML.

The Mine is approved to extract 1.9 million tonnes per annum of high-quality metallurgical coal over an estimated five-year mine life. The active mining area is found entirely within the 845 ha ML 70257. The 410 ha approved disturbance area consists of an open pit and associated infrastructure centrally located on the ML. Mine construction began in June 2022, and the operation now employs the truck and shovel method while mining the resource in a southerly direction.

1.3 PRCP Application Package

The Proponent received a PRC Plan transition notice (19 August 2021) for EA0002465 to submit a PRCP addressing the requirements of section 126C and 126D of the *Environmental Protection Act 1994* (Queensland) (EP Act) pursuant to section 754 of the EP Act.

The first version of the PRCP (v1), developed in alignment with the requirements of the EP Act and *PRC Plan Guideline* (ESR/2019/4964) (PRCP Guideline), was submitted by the required transition date of 29 September 2023.

A ‘properly made’ notice pursuant to section (s) 136(b) of the EP Act for the PRCP application package submitted was received by the Proponent on 16 October 2023.

On 27 November 2023, the administering authority being the Department of Environment Science and Innovation (DETSI) (now called the Department of Environment, Tourism, Science and Innovation (DETSI)) provided CCO with a *Notice: EP Act Information request* (‘IR notice’) under section 140 of the EP Act. The notice contained 31 items requiring a response from the Proponent which was requested to be provided by 24 November 2024 to assess the PRCP and associated documents.

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1.4 Document Structure

The document provides responses to 31 items raised by DETSI in the IR notice and is structured as follows:

- PRCP - Rehabilitation Planning Part - addresses items 1 to 17.
- PRCP - Schedule – addresses items 18 to 31.

The document is submitted together with a revised PRCP – Rehabilitation Planning Part (V2) and PRCP – Schedule (V2), appendices, spatial data and maps which are intended to replace the originally submitted documents. This IR response and attached documents are collectively referred to as the "IR Response package". The PRCP and supporting documents for the original submission in September 2023 are referred to as Version 1 (1). Any reference to PRCP means reference to the updated PRCP v2 unless stated otherwise.

1.5 EA Amendment- Change from PMLU of Water Storage to Southern Void NUMA

The updated water balance assessment undertaken for the EA amendment (Engeny, 2024) identified that the salinity of the Southern Void is forecast to continue to increase over time and the void water is unlikely to be suitable for livestock drinking long-term after mine closure.

Following the advice received from DETSI dated 30 November 2023, an environmental authority (EA) amendment application was submitted by the Proponent to request that the Southern Void be assessed as a non-use management area (NUMA) instead of a post mining land use (PMLU) of water storage for the purpose of livestock watering due to long term predictions of declining water quality. This EA amendment was approved, followed the major EA amendment application and took effect on 6 December 2024.

The EA amendment application also requested the following changes:

- Proposed change to the backfill levels for the Northern Pit and Southern Void;
- Proposed change to groundwater monitoring bore locations and change in groundwater quality limits; and
- Proposed change to central pit terminology to clarify it as in-pit spoil dump.

The details of the proposed changes are available from the application documents (reference A-EA-AMD-100609123) located on the following website: Current environmental authority application or amendment documents | Environment | Department of Environment, Science and Innovation, Queensland (DESI.qld.gov.au).

To allow enough time to finalise the EA amendment before submitting a response to the PRCP IR notice, an extension to the information response period was sought by CCO and was granted by DETSI on 27 October 2024. Consequently, the information response period was extended to 30 January 2025. The

This response to the IR notice along with the PRCP and PRCP Schedule reflect the change from the PMLU to NUMA as well as other changes requested in the EA amendment application which are relevant to the PRCP assessment.

1.5.1 Key changes to the Submitted PRCP and PRCP Schedule to reflect NUMA

- Section 3.4 (Non-Use Management Areas) has been added to the PRCP to outline the NUMA.
- The PMLU rehabilitation area (RA) of RA6 has been changed to the improvement area (IA) of IA1 as it relates to Southern Void.
- The rehabilitation milestone (RM) of RM8 has been removed as it related to the former PMLU of water storage. RM8 has been replaced with management milestones MM1 and MM2 and related milestone criteria for NUMA.

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2. PRCP Rehabilitation Planning Part

2.1 Item 1: General

General

Missing documents referenced in PRCP:

DETSI Statement:

Throughout the Progressive Rehabilitation and Closure (PRC) plan, references have been made to different plans such as the:

1. BME Biodiversity Management Plan (BMP);
2. BME Weed and Pest Management Plan;
3. BME Species Management Plan (SMP);
4. BME Protected Plant Impact Management Plan (PPIMP);
5. Water Management Plan; and
6. Cultural Heritage Management Plan (CHMP).

These documents have not been provided with or summarised within, the current PRC plan. This information is required by DETSI to demonstrate the applicability of the Plans to the overall PRC plan.

DETSI Action:

Revise the current PRC plan to include all documents and to ensure all documents are provided in reference list, and Appendices.

Proponent Response:

The requested documents are provided in the PRCP as:

Appendix J: BME Biodiversity Management Plan (BMP);

Appendix K: BME Weed and Pest Management Plan (WPMP);

Appendix L: BME Water Management Plan.

All Appendices are referenced in the PRCP. Additional information about the purpose and content of the BME Biodiversity Management Plan and BME Weed and Pest Management Plan has been added to the **Section 3.7.2.1** of the PRCP. Information about the BME Water Management Plan is provided in **Section 3.5.1.7** of the PRCP.

The Cultural Heritage Management Plan, Species Management Plan and Protected Plant Impact Management Plan have not been provided as upon review of the PRCP, references to those documents have been removed from the PRCP.

Please note that management plans are operational plans. These are dynamic and will be reviewed and updated through adaptive management.

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2.2 Item 2: General

Attachment I: Risk Assessment:

DETSI Statement:

The document contains text that has been struck through. It is not clear if that text is part of the document or does not need to be considered.

DETSI Action:

Revise Attachment I – Risk Assessment to remove all "strike through" text or any other confusing symbology/formatting.

Proponent Response:

The identified error has been corrected in the Risk Assessment (V2) and has been attached to the PRCP as **Attachment I**.

2.3 Item 3: Site Hydrology and Fluvial Network

3.1.1.4 Site Hydrology and Fluvial Networks

Surface Water Quality:

DETSI Statement:

The section identifies the relevant waterways and their environmental values.

No receiving environment water quality data has been provided in the PRC plan.

The PRCP Guideline section 3.1 requires the EA holder to provide baseline information with respect to site hydrology and fluvial networks.

Background surface water quality data is important as it helps to determine the water quality limits, suitability of monitoring locations to demonstrate the stability and non-polluting state of the final rehabilitated landform.

DETSI Action:

Provide an updated PRC plan that includes background/baseline receiving environment water quality monitoring data.

Proponent Response:

As advised in the PRCP v1 in **Section 3.1.1.4**, sufficient background water quality data for the waterways within or surrounding the ML has not been collected prior to the commencement of the Project, apart from the data collected during the Surface Water Impact Assessment (SWIA) in 2021 (Engeny, 2021) as well as the Receiving Environment Monitoring Program (REMP) (SGM, 2023) required by condition C23 of the EA0002465.

In the absence of historical water quality data, suitable water quality objectives have been developed for the Mine in accordance with the *Environmental Protection (Water) Policy 2009 Isaac River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part), including all waters of the Isaac River Sub-basin (including Connors River).* These water quality objectives have been incorporated into the REMP Design Document (RPM, 2021) and are reflected in the EA0002465 water quality limits prescribed in Table C2 -Contaminant Release Limits, Table C3 - Release Contaminant Trigger Investigation Levels – Potential Contaminants and Table C6 – Receiving Waters Contaminant Trigger Levels. Because these water quality objectives are the most conservative values that can be applied to monitor potential environmental harm to the receiving environment, they will be considered as background water quality data

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and carried over to the post-closure monitoring program as rehabilitation milestone criteria in **Table 3-18** and **Table 3-60** of the PRCP.

2.4 Item 4: Soil Types, Properties, and Productivity

3.1.1.6 Soil Types, Properties, and Productivity

Land Suitability:

DETSI Statement:

The PRC plan says:

"Approximately 91.1% of the ML is classed as Class 4 land, with nutrient deficiency as the limiting factor."

Section 3.3.1 (Nominated PMLUs) of the PRC plan says that:

"Grazing will be returned to 'Class 4' Land suitability."

The recent technical paper published by the Queensland Mine Rehabilitation Commissioner 'Rehabilitated mined land suitability for beef cattle grazing in the Bowen Basin' states:

"Land suitability assessment is used to evaluate these land use limitations and rank rehabilitation as suitable (Class 1, Class 2, and Class 3) or unsuitable (Class 4 and Class 5) for beef cattle grazing according to the severity of limitations…the Class 3/Class 4 boundary is the most important threshold, because it separates land that is suitable for a specific land use from land that is not (Queensland Government, 2015)."

DETSI Action:

Provide further information that demonstrates the PMLU of grazing is sustainable on the land without severe limitations and management requirements.

Proponent Response:

The PMLU of low intensity grazing was selected because it is consistent with natural characteristics and land uses of the region as described in the *Isaac Regional Planning Scheme 2021* and *Mackay, Isaac and Whitsunday Regional Plan* summarised in **Section 3.3.4** of the PRCP. It also reflects one of the dominant land uses of cattle grazing based on the review of historical aerial imagery which shows that, in the region surrounding the ML, broad acre clearing commenced between 1966 and 1978.

The PMLU of low intensity grazing will be returned to 'Class 4' Land sustainability (Cattle grazing and rainfed broadacre cropping) without adversely impacting sustainability on the land due to severe limitations and management requirements for the following reasons:

- Class 4 land suitability is approved for achieving rehabilitation goals for PMLUs in Appendix 1, Table G1 "Post Mine Land Use (PMLU) and Rehabilitation Methods" and Table G2 "PMLU and rehabilitation success criteria" of the Land Outcome Document (the EA0002465).
- DETSI accepted Class 4 land suitability as a pre-approved outcome in the EA0002465 in an email response to the request for further information regarding the EA amendment, dated 8 October 2024 and titled "RE: Request to Further Information: Major Amendment Application for Broadmeadow East Mine_EA0002465". DETSI also accepted the response provided by CCO in the above-quoted email regarding the suitability of class 4 land for the PMLU of low-intensity grazing. The Department noted that the proposed PRCP will be required to demonstrate that all land class 4 suitability areas can be rehabilitated to a stable condition as defined in section 176A(3)(c) of the EP Act.
- In accordance with section 111A of the EP Act, land is in a stable condition if—

  (a) the land is safe and structurally stable; and

  (b) there is no environmental harm being caused by anything on or in the land; and

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(c) the land can sustain a post-mining land use.

- All areas of class 4 land suitability can be rehabilitated to a stable condition, as defined in section 111A of the EP Act, by compliance with the following rehabilitation criteria prescribed in Table 3-18 of the PRCP. A few examples of the relevance of each criterion of section 111A of the EP Act to the rehabilitation criteria are presented below.

Section 111A(a) of the EP Act - The land is safe and structurally stable:

- Example rehabilitation criteria:
  - Certification from an Appropriately Qualified Person (AQP) that the area has achieved stable condition, including:
    - Land Class 4 for grazing according to the Guidelines for agricultural land evaluation in Queensland (DSITI & DNRM, 2015).
    - Maximum erosion rate of <5 t/ha/yr and 10.0 t/ha/yr as determined by landform design.
  - Geotechnical adequacy with ≥ 1.5 Factor of Safety.

Section 111A(b) of the EP Act - there is no environmental harm being caused by anything on or in the land:

- Example rehabilitation criteria:
  - An AQP has completed a contaminated land investigation.
  - Contaminated materials removed and appropriately disposed of.
  - Onsite remediation of hydrocarbon contaminated soils completed.
  - Certification from an AQP that all measures required by the contaminated land investigation report(s) are implemented
  - AQP certifies that:
    - No active rill or gully erosion >300 mm deep.
    - Maximum erosion rate of <5 t/ha/yr and 10.0 t/ha/yr as determined by landform design.
    - The installation of certified contours and drains as per design by an AQP (Certified Professional in Erosion and Sediment Control (CPESC)).
    - All erosion requiring intervention has been remediated and does not impact achieving the PMLU.
  - No new invasive plants and weeds and infestation density of invasive plants and weeds within the area is consistent with reference sites.
  - Invasive plants (as defined in the Biosecurity Act 2014) comprise of less than 5% of vegetation groundcover (excluding Parthenium weed *Parthenium hysterophorus*).

Section 111A(c) of the EP Act - the land can sustain a post-mining land use:

- Example rehabilitation criteria:
  - Groundcover is 60% perennial pasture biomass for consecutive years.
  - Completed ripping and deep ripping of areas in accordance with the determination made by an AQP.
  - Completed seeding in accordance with the recommended flora species, seed mix ratios and seeding rates determined by an AQP.
  - Ameliorant and physical treatments such as fertiliser, gypsum and organic matter are applied in accordance with the determination made by an AQP.
  - The following minimum applications rates for ameliorants and fertilisers are used, unless adjusted by an AQP:
    - Fertiliser: 130 Kg/ha
    - Lime: 3 t/ha

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- Compost: with 30% Organic Matter (OM) at 400kg/ha and with 40% OM at 300 kg/ha.

In addition to compliance with the rehabilitation criteria listed above, the Class 4 land can sustain a post-mining land use for the following reasons:

- 91.1% of the land within the mining lease was classified as Class 4 following an assessment by a suitably qualified person, SGM (2021), who analysed the pre-mining land suitability for beef cattle and broadacre cropping in accordance with relevant guidelines. The remaining ~8.9% was classified as Class 5 land, with salinity as the limiting factor. Maintaining class 4 land suitability for PMLU of low intensity grazing is, therefore, consistent with the pre-mining land suitability classification and the pre-mining land use.
- Nutrient deficiency (especially phosphorus) is a key limitation for Class 4 land, as indicated in the technical paper on land suitability for beef cattle grazing in the Bowen Basin (Short, 2023). To manage this deficiency, targeted fertiliser applications will ensure soil fertility levels will meet the needs of the rehabilitation requirements. Fertiliser rates of 130 kg/ha and lime application of 3 t/ha will address nutrient imbalances, as prescribed in the PRCP. Additionally, appropriate amelioration of soil physical and chemical properties will further support pasture growth and sustainability.
- The revised assessment undertaken by (SGME, 2024) confirmed that topsoil and subsoil stripping depths and volumes as provided in Table 3-29 of the PRCP are suitable for use in rehabilitation to support the low-intensity grazing PMLU assuming the recommended amelioration occurs.
- To manage any potential limitations that could adversely impact on the sustainability of the class 4 land for future grazing a number of control/mitigation measures will be undertaken, including:
  - Soil viability will be assessed prior to its use in rehabilitation and, if required, soil amelioration will be applied to address any potential changes to physical, chemical, and biological attributes of soil over time. This involves comparing soil attributes (via field observations and laboratory analysis) to existing soils to determine if a reduction in soil quality has occurred. If a reduction has occurred, the most suitable amendment strategy will be determined and applied to enhance the resource. The details of physical and chemical amelioration methods that may be used to improve the rehabilitation value of the area are outlined in **Section 3.5.1.3** of the PRCP.
  - Land capability (**Section 3.7.2.2**) will be monitored to establish if an area is suitable for a specific land use once mining has ceased. For BME, the end land use is low-intensity grazing (Land Class 4 (IV)). Land capability will be monitored via field-based assessments (i.e., BME's Erosion and Sediment Control Plan), third-party assessments, laboratory analysis of soil parameters as well as utilising geographic information systems and remote sensing technologies. Key parameters for land class monitoring include soil quality, erosion, contamination and the presence of weeds and pests.
  - Rehabilitation trials are tools to test the grazing performance and refine management practices (Short & Bourne, 2023). Required by Condition G11 of EA0002465, these trials aim to enhance the likelihood of achieving the nominated rehabilitation outcome (i.e. PMLU) and to establish a method for managing and minimizing the risks associated with not achieving a stable, grazing-suitable condition.

2.5 Item 5: Hydrogeology

3.5.1.1 Hydrogeology

Groundwater Quality:

DETSI Statement:

The PRC Plan says that:

"Table D2 from EA0002465 contains the groundwater trigger limits applicable to operations that will continue to be the case for post-closure monitoring."

The groundwater limits and triggers in EA may not be relevant to PRCP as they are applicable to mining operations and not post-mining conditions.

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Aquatic ecosystems are a scheduled environmental value for the receiving environment; therefore, this must be considered. The water quality criteria should be based on Water Quality Objectives (WQOs), aquatic ecosystem guidelines and background data for the receiving environment.

For groundwater, the 95th percentile of baseline (ideally pre-mining) data can be used to determine site-specific limits for all indicators. See DETSI 2021 Groundwater Guideline.

DETSI Action:

Provide an updated PRC plan that includes:

1. SMART groundwater trigger limits applicable to post-closure monitoring; and

2. Demonstrate how the Water quality objectives and the ANZG 2018 guidelines have been considered.

Alternately, provide justification as to why trigger values in Table D2 from EA0002465 are suitable for post-closure.

Proponent Response:

The groundwater quality trigger limits in Table D2 of the EA0002465 are suitable for post-closure as confirmed in the "Environmental Authority Amendment Application Groundwater Report, Final" (KCB 2024a) and the technical memorandum titled "Update to Groundwater Quality Triggers" (KCB 2024b).

The groundwater quality limits in Table D2 of EA0002465 referenced in PRCP v1, were based on a limited data set available at the time. Given that additional groundwater quality data has since been collected, as required by the EA, updated trigger values have been recalculated as per the guideline "Using monitoring data to assess groundwater quality and potential environmental impacts" (DES 2021 Guideline) (DES, 2021).

KCB (2024) prepared a technical memorandum titled "Update to Groundwater Quality Triggers" providing the methodology and justification for the revised groundwater quality trigger limits. The following approach was taken in developing the updated trigger limits for groundwater:

- KCB (2024b) developed the updated groundwater trigger limits using the 95th percentile of the results of baseline pre-mining groundwater monitoring data and additional groundwater quality data, in compliance with the DES 2021 Guideline as well as Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018). This approach ensures appropriate site-specific trigger values to enhance monitoring and early detection of environmental harm.
- The updated trigger values were recalculated based on a more robust dataset from 13 monitoring bore data points collected during operations. These reflect current conditions more accurately than the original limits.
- The Water Quality Objectives (WQOs) for aquatic ecosystems were considered, where relevant, in determining the updated post-closure groundwater quality triggers. Since aquatic ecosystems are designated as an environmental value, the groundwater quality criteria are aligned with the ANZG (2018) guidelines and reflect natural background levels.
- The site-specific water quality objectives based on the ANZG guidelines (2018) for protecting aquatic ecosystems were considered, where relevant, in determining the updated post-closure groundwater quality triggers. This ensures that the triggers are suitable for the long-term protection of the receiving environment and effective for post-closure groundwater monitoring.

The "Environmental Authority Amendment Application Groundwater Report, Final" assessed groundwater quality associated with the post-closure landform. The report concluded that as the South Void is predicted to result in a groundwater sink. Outflow from the void to the surrounding groundwater system is not predicted once post-closure equilibrium is achieved. Consequently, the water quality of the void water is not predicted to impact the surrounding environment and associated environmental values. The report concluded that the groundwater trigger values in place remain relevant into the closure period (KCB 2024a).

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Therefore, the revised groundwater quality trigger limits are said to be applicable through operation into post-closure (KCB, 2024b, 2024a).

The revised groundwater quality trigger limits were submitted as part of the EA0002465 amendment application (Table D2 “Groundwater quality limits”, dated 6 December 2024) and are presented in **Table 3- 23** of the PRCP.

The following section has been added to **Section 3.5.1.1** of the PRCP to incorporate the findings of the “Environmental Authority Amendment Application Groundwater Report, Final” and “Update to Groundwater Quality Triggers”.

Given the ephemeral nature of the alluvial aquifer and the lack of hydraulic connection with underlying formations, no impact on groundwater receptors is predicted. Additionally, the Southern Void, acting as a groundwater sink, will result in no outflow to surrounding groundwater systems once post-closure equilibrium is achieved (KCB, 2024b). Therefore, no adverse effects on groundwater quality are anticipated from the void.

The Project’s existing groundwater trigger values, outlined in the EA, include key analytes (e.g., pH, sulfate, chloride, dissolved metals) and will remain applicable through the closure period to detect and mitigate potential impacts. These trigger limits are based on the 95th percentile of baseline pre-mining groundwater monitoring data and additional groundwater quality data (KCB, 2024b) in compliance with the DES 2021 Guideline and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018). This approach ensures long-term protection of the receiving environment and effectiveness for post-closure monitoring.

2.6 Item 6: Hydrogeology

3.5.1.1 Hydrogeology

DETSI Statement:

Attachment D Table 3.2 lists the bores making up the groundwater monitoring network. However, **Table 3- 21** (**Section 3.5.1.1**) of PRCP identifies some of these bores are decommissioned. It is unclear if the decommissioned bores were used to calibrate the groundwater model.

Clarification is required to demonstrate the model reflects the site hydrogeology.

DETSI Action:

Clarify if the decommissioned bores were used to calibrate the groundwater model. Include additional text confirming the decommissioned bores do not influence hydrogeological modelling outcomes.

Proponent Response:

The groundwater network, prior to the EA amendment, as stipulated in Table D1 of EA0002645 included 11 monitoring bores screened in five hydrostratigraphic units at varying depths.

However, the following recent changes were made to the network:

- Various monitoring bores were mined through due to the progression of mining activities.
- Four (4) replacement bores were drilled in Q4 2023 to replace the mined out bores.

The updated BME monitoring network now consists of 10 monitoring bores screened in five hydrostratigraphic units at varying depths. The updated network is reflected in the approved EA0002465 in Table D1 “Groundwater monitoring locations and frequencies” and is reflected in **Table 3-21** of the PRCP.

In addition, one of the current compliance bores, MBBE0001, is planned to be decommissioned in 2024 and replaced by bore MBBE0009. From December 2023, until monitoring is stopped at MBBE0001, these two bores have been monitored concurrently to ensure continuous records for EA compliance.

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Regarding the influence of the decommissioned bores on the outcomes generated by the numerical groundwater flow model, it can be concluded that this influence was not significant based on the fact that only 4 decommissioned bores out of 18 bores were used in the calibration process. The model calibration was conducted based on groundwater level measurements. These measurements were compiled from 18 monitoring bores for which reliable water level measurements were available. Monitoring bores BDW172(54), BDW172(32), BDW5C, and BDW8C have been decommissioned due to the progression of the open pits, however, monitoring records from these decommissioned bores have been used as part of the calibration process. In total, 192 individual measurements were used in the calibration process (KCB 2024a).

The most recent groundwater model accurately reflects the site's current hydrogeology using data from the newly installed bores and other active bores in the network (KCB, 2024a). This ensures the model remains robust and representative of site conditions during post-closure monitoring.

No changes to the PRCP have been made as a result of the response to item 6.

2.7 Item 7: Soil and Capping Material Assessment

3.5.1.3 Soil and Capping Material Assessment

Quantity (of available resources):

DETSI Statement:

Table 3-28 Soil Stripping Depths and Material Balance states the total topsoil and subsoil volume available. However, it does not state how much volume of topsoil and or subsoil is needed for rehabilitation activities. Furthermore, this section of PRC plan also does not state how much of available topsoil and/or subsoil is of rehabilitative value (i.e., suitable).

This information will help assess any potential topsoil deficit and develop appropriate management actions.

DETSI Action:

Provide an updated PRC plan that states the amount of suitable topsoil and/or subsoil needed for rehabilitation activities.

Proponent Response:

Amount of suitable topsoil and/or subsoil available for rehabilitation activities

Section 3.5.1.3 of the PRCP states that the total volume of topsoil and subsoil that could be stripped from the disturbance footprint was calculated to be 871,900 m^3 and 413,650 m^3, respectively. Given that stockpiled soil has a tendency to swell, a swell factor of 1.2 was applied to the stockpile volume estimates. As a result, the Proponent has allocated a total topsoil stockpile volume of 1,046,280 m^3 and 496,380 m^3 of subsoil. The available topsoil and subsoil stripping depth and available volumes are outlined in Table 3-29 of the PRCP.

The stripping depths and total volume of suitable topsoil and subsoil were derived from a land suitability assessment (SGM, 2021; SGME 2024), with soil fertility assumed to be ameliorated to meet land suitability class ≤ 4, following DME (1995) guidelines. Fertiliser and ameliorant application rates have been provided based on both the DME (1995) and QMRC technical paper "Rehabilitated mine land suitability for beef cattle grazing in the Bowen Basin" (QMRC guidelines) (Short, 2023).

Soil volumes were calculated by multiplying the stripping depths by the area of each soil type. Out of 422 ha of rehabilitation area, 391 ha will be designated for low-intensity grazing PMLU, and 31 ha will be classified as NUMA. Since all soil will generally be applied to a thickness of 0.3 m to provide enough depth for ripping and plant growth, 1,173,000 m^3 of topsoil will be required for the purpose of low-intensity grazing PMLU.

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There will be a topsoil shortfall of 126,720 m^3 for rehabilitation activities. However, this deficiency can be compensated by using approximately 30% of the available subsoil, which, once ameliorated or blended with topsoil, will provide a suitable growth medium. Importantly, all available topsoil and subsoil will be treated to ensure they are suitable for rehabilitation, ensuring thereby that sufficient volumes of growth medium will be available to meet rehabilitation objectives. Therefore, the available material balance of topsoil and subsoil is sufficient for landform rehabilitation.

Amount of topsoil and/or subsoil of rehabilitative value for rehabilitation activities

The amount and quality of available topsoil and subsoil were assessed and confirmed to be suitable for rehabilitation to support low-intensity grazing post-mining land use (PMLU) (SGM, 2021; SGME, 2024).

The quality of topsoil and subsoil was assessed through a land suitability evaluation (SGM, 2021; SGME 2024), using the methodologies described in the following guidelines:

- Guidelines for Agricultural Land Evaluation in Queensland (2nd edition) (DSITI & DNRM 2015);
- Guideline for co-ordinated projects involving clearing for agriculture (DNRME 2018);
- Technical Guidelines for the Environmental Management of Exploration and Mining in Queensland – Land Suitability Assessment Techniques (DME 1995).

The assessment determined that all soil types within the disturbance footprint have land suitability classes 4 or 5, primarily due to nutrient deficiencies, with some vertosols also limited by salinity and subsoil erosion. Therefore, amelioration will be added to these soils to enhance fertility and support the low-intensity grazing PMLU.

Ameliorants will be added to improve soil fertility and to achieve a land suitability for PMLU of low intensity grazing, the recommended amelioration provided by SGME (2024) includes:

- Specific rates for monoammonium phosphate (MAP) and diammonium phosphate (DAP) fertilisers, based on soil types to improve nutrient levels, particularly phosphorus.
- Compost application rates for improving soil structure and reducing erosion potential, with organic matter to support the grazing land use.
- Application of gypsum and lime to manage sodium levels (exchangeable sodium percentage (ESP)) and pH where necessary.

Furthermore, the rehabilitative value of topsoil will also be assessed prior to rehabilitation activities. As per the requirement of Table G2 “PMLU and NUMA rehabilitation success criteria” of EA0002465, an AQP will assess the soil suitability for the low-intensity grazing PMLU. The soil suitability assessment involves the assessment of soil attributes (via field observations and laboratory analysis) with comparisons made with existing soils to determine if a reduction in the rehabilitation value has occurred. If a reduction has occurred, the most suitable ameliorant, at the rates determined by the AQP will be applied to enhance the resource. Further information on soil amelioration is presented in **Section 3.5.1.3** of the PRCP.

Section 3.5.1.3 of the PRCP has been updated with further details on the amelioration rate.

Please also note that the 0.3 m topsoil stripping depth has been corrected as explained in item 9 of this response.

2.8 Item 8: Soil and Capping Material Assessment

3.5.1.3 Soil and Capping Material Assessment

Quantity (of available resources):

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DETSI Statement:

The PRC plan says that in case of topsoil deficiency, contingency measures including (a) shallow topsoil spreading (b) substituting topsoil with subsoil and (c) using soil additives (i.e., fertilisers). The plan also says that if these contingency measures are implemented, completion criteria may take longer to be reached.

The completion criteria are legally enforceable commitments once the PRCP Schedule is approved and as such must be written in a manner to deliver on SMART principles meaning it is clear when the milestone criteria will be achieved.

DETSI Action:

Provide an updated PRC plan that takes into account the risks associated with topsoil deficiencies and how landform stability may be affected if topsoil characteristics are unable to support the required vegetation cover to minimise erosion.

Proponent Response:

The risk assessment provided in the PRCP includes considerations of the impacts and likelihood of various scenarios, including potential delays, and the necessary controls required to mitigate the risk of PRCP objectives not being met.

As outlined in the response to item 7, **Section 3.5.1.3** of the updated PRCP identifies the risk of a minor topsoil shortfall of approximately 126,720 m³. This topsoil deficiency will be managed by using around 30% of the available subsoil, which will be ameliorated to serve as a suitable growth medium for rehabilitation. This approach will ensure that there will be sufficient soil material to meet the requirements for landform stability and vegetation growth, even with the identified shortfall in topsoil.

The risk of not having adequate quantity and quality of topsoil and/or subsoil for rehabilitation activities has been assessed as part of the land suitability assessment (SGM, 2021; SGME 2024). The assessment confirms that, with the appropriate application of amelioration measures listed in **Section 3.5.1.3** of the PRCP, both topsoil and subsoil volumes and quality are suitable for use in rehabilitation activities.

There is strong confidence that the combination of ameliorated topsoil and subsoil will enhance the soil's ability to support plant growth, mitigate erosion risks, and ensure landform stability. The land suitability assessment (SGM, 2021; SGME 2024) confirms that, with the proposed amelioration measures referred to above, the rehabilitated soils will meet the criteria for low-intensity grazing PMLU.

The risks associated with a delay in achieving rehabilitation completion criteria due to topsoil deficiencies causing adverse impacts on landform stability and erosion are captured in **Table 3-50** of the PRCP titled "Summary of Risk Treatments for High Inherent Risks Events" and **Attachment I:** "Risk Assessment and Treatment Plan" of the PRCP. Specifically, these risks are reflected in the following items:

- R5 and R14 – addresses the risk of failure of the vegetation to establish on rehabilitated landforms or meet the target vegetation criteria;
- R9 – addresses the risk of rehabilitation failure linked with terrestrial vegetation and failure to meet the species richness criteria;
- R22 – addresses the risk of rehabilitation not meeting the target vegetation criteria for previous water storage areas;
- R25 – addresses the risk of rehabilitation not meeting the vegetation criteria for the previous infrastructure.

The impacts considered for the above-mentioned risks include:

- Lack of vegetation establishment;
- Landform unable to meet post closure land use criteria;
- Excessive runoff during wet weather events;

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- Failure to establish vegetation;
- Failure to meet completion criteria; and
- Loss of habitat.

The risk assessment details are documented in the **Attachment I** along with the risk treatment plan for all the 28 risks identified. It is noted that six of the initial high risks, which were associated with stability related concerns such as erosion, and vegetation establishment, were classified with a low residual risk.

2.9 Item 9: Soil and Capping Material Assessment

3.5.1.3 Soil and Capping Material Assessment

Quantity (of available resources):

DETSI Statement:

The contingency measures for topsoil deficiency also include varying topsoil application depth for low-intensity grazing on native pastures PMLU (0.2 m) and woodland PMLU (0.3 m).

There is a lack of detail for proposing varying topsoil application depths in native pasture and woodland.

DETSI Action:

Provide an updated PRCP with details relating to varying soil application depths for low-intensity grazing in native pastures (0.2m) and woodland (0.3m) in case of topsoil deficit and achieving final PMLU end use.

Proponent Response:

The contingency measures for topsoil deficiency only include a topsoil application depth of 0.3 m for low-intensity grazing PMLU. RPM has identified an error in **Section 3.5.1.3** of the PRCP v1, specifically that woodland PMLU was incorrectly mentioned. This PMLU is incorrect as the only nominated PMLU for BME is low-intensity grazing. Additionally, the topsoil application depth was incorrectly listed as 0.2 m instead of 0.3 m in the PRCP v1. These errors have been corrected in the PRCP.

Section 3.5.1.3 of the PRCP has been updated to remove the woodland PMLU and to correct the topsoil application depth to 0.3 m.

2.10 Item 10: Soil and Capping Material Assessment

3.5.1.3 Soil and Capping Material Assessment

Quantity (of available resources):

DETSI Statement:

There are different topsoil application depths in the PRC plan.

Section 3.5.1.3 of the PRC plan states:

*"Erosion modelling conducted to support this PRCP has recommended topsoil thicknesses of approximately **0.5 m** to be applied to rehabilitated landforms."*

The same section also states:

*"Generally, all soil will be applied to a thickness of **0.3 m** to provide enough depth for ripping and plant growth."*

Topsoil depth of 0.3 m has also been provided in the PRCP Schedule (excel file).

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Section 3.5.1.6 states that rejects within OOPDs were sheeted with **0.2 m** of topsoil. Potentially acid forming (PAF) materials are also proposed to be covered with 0.2 m of topsoil after being encapsulated (6m of inter-burden).

DETSI Action:

Provide an updated PRC plan that clearly and consistently defines topsoil application depths throughout the document. This depth must reflect findings from landform evolution modelling specific to topsoil depths required to maximise groundcover for final PMLU landforms.

Proponent Response:

The thickness of topsoil that will be applied for the purpose of low-intensity grazing PMLU with the aim of providing enough depth for ripping and plant growth, will be 0.3 m. This thickness should apply to all areas and the discrepancy between topsoil depths which occurs in **Sections 3.5.1.3** and **3.5.1.6** of the PRCP is an error. This error has been corrected throughout the PRCP.

Sections 3.5.1.3 and **3.5.1.6** of the PRCP have been updated with the correct topsoil thickness of 0.3 m.

2.11 Item 11: Water Management

3.5.1.7 Water management

Infiltration and seepage intervention and collection controls:

DETSI Statement:

The PRC plan states that potential seepage sources include rehabilitated out of pit dumps (OOPDs – West and East) and sediment dams and that these sources are not considered significant enough to warrant the establishment of post closure seepage controls.

The PRC plan lacks details of the decision-making process to reach this conclusion.

Moreover, within the same section the PRC plan (Infiltration and seepage intervention and collection controls) states:

“Any potential seepage issues associated with this (West OOPD) will be captured in post closure monitoring activities….”

This statement is self-contradictory to statement above i.e., no need to establish seepage control measures.

Clarification is required to demonstrate the milestone and completion criteria for the OOPDs will be achieved.

DETSI Action:

Revise the PRC plan to provide more details about why seepage controls are not required. The updated PRC plan must also clarify the contradiction for the need for seepage controls.

Proponent Response:

The conclusion that the potential sources of seepage are not considered significant enough to warrant the establishment of post-closure seepage controls is based on the following considerations with respect to Out of Pit Dumps (OOPDs) and sediment dams.

There is no risk of seepage from sediment dams post-closure as all sediment dams – except for one farm dam to be transferred to the landholder - will be rehabilitated. Contaminated sludge from these dams will be removed at the cessation of mining, and the dams will remain in place until sufficient vegetation is established. The rehabilitation process, including reshaping and encapsulating any contamination, will take

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place during the first two years of post-closure. The clean water dam will undergo rehabilitation during the final landform reshaping once self-sustaining criteria have been met on the OOPDs.

The risk of seepage from OOPDs is low for the following reasons:

1. As demonstrated in the geochemical assessment of waste material (RGS, 2022), the majority of the waste materials have low sulfide content, excess acid neutralising capacity (ANC), and are classified as Non-acid forming (NAF). These NAF mineral waste materials have a very low risk of acid generation and a high factor of safety with respect to potential for generation of acidity. Any surface runoff and seepage from mineral waste is expected have a pH ranging from circum-neutral to mildly alkaline, with low salinity and low dissolved solids.

2. The material placed in OOPDs is mostly overburden with the majority of the waste material placed within the footprint of the backfilled void. This has a beneficial outcome as any potential seepage from the waste material will be contained in the backfilled void. As the void is predicted to act as a groundwater sink without outflow to the surrounding groundwater system (KCB 2024a), any seepage is not likely to impact the surrounding environment. There are two OOPDs, West OOPD and East OOPD. West OOPD will have one reject cell constructed and appropriately encapsulated in it. However, seepage from it will be monitored in accordance with the requirements described in **Section 3.7** of the PRCP.

3. Seepage from OOPDs is likely to be minimal given that West and East OOPDs were designed and constructed to minimise water infiltration and subsequent seepage.

4. The OOPDs have 15% outer slopes and 12% inner slopes, as per landform design, and drainage outward away from OOPD toward the original topographical drainage path. All OOPD benches and berms will be compacted primarily by heavy vehicle traffic. The surface will be profiled to promote shedding of stormwater and minimise surface ponding and concentrated streams. Surface runoff will be directed through batters constructed from porous competent rock. The competent rock acts as an energy dissipater, eliminating the formation of high-velocity streams and minimising sediment formation and the subsequent risk of drainage network failure.

Even through there is a low risk of seepage from sediment dams and OOPDs, seepage will be monitored during mine operation as a form of best-practice environmental management. Surface run-off / seepage from OOPDs and rehabilitated areas will be monitored via the monitoring program which includes surface water (including run-off and seepage) and groundwater quality monitoring as well as erosion and spoil progressive sampling. Validation sampling will be used to confirm selective handling and disposal requirements of reactive materials (PAF/sodic material).

During post-closure, visual inspection of seepage will be undertaken after a significant rainfall event. These inspections will occur on a routine basis and as soon as reasonably practicable after a significant rainfall event. If seepage is observed, the specific location of the seepage and water flow rate will be recorded, and surface water samples will be collected for water quality analysis. If monitoring data indicate a significant seepage issue, appropriate control measures will be implemented in accordance with the BME Water Management Plan and BME Material Waste Management Plan (MWMP).

Section 3.5.1 of the PRCP has been updated to clarify the information presented above and eliminate any contradictions.

2.12 Item 12: Voids

3.5.3 Voids

DETSI Statement:

The proposed slope for the south void pit floor (Table 3-13) is not stated and is contradictory within the PRC plan.

For instance, **Section 3.5.3.8** (Rehabilitation Strategies) states:

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"The void pit floor slopes range from 15-30%....."

While at all other places within PRC plan (e.g., **Section 3.5.3.1**, **Table 3-13**) a definite *"15% slope"* has been mentioned.

This information is required to satisfy that the completion criteria relevant to the final landform will be able to sustain the nominated PMLU.

DETSI Action:

Provide an updated PRC plan that states consistent percent slope (e.g., "15% slope") that will be used as milestone or completion criteria for south void.

Proponent Response:

The proposed overall slope for the Southern Void, including the pit floor, ranges between 15-30% which will be ripped and reshaped where necessary to achieve the rehabilitation criteria and minimise the final water storage (NUMA) size to 31 hectares. As noted in section 5.7.3 Southern Void NUMA of the EA0002465 amendment supporting document titled "Broadmeadow East Mine Environmental Authority Amendment Application – Supporting Document" dated 6 December 2024 (available from: DESI.qld.gov.au), the pit floor is a natural geological feature consisting of hard rock, and therefore, the slope of the pit floor varies between 15-30%. The exact slope will be confirmed once the coal is extracted, as it depends on the geology of the coal seam. Therefore, references to pit floor slope being between 15-30% are the best approximation based on currently available information.

The EA0002465 amendment application dated on 6 December 2024 included an increase to the slope range for Southern Void from 15% up to 30% and, consequently, this range has been incorporated into the PRCP and PRCP Schedule and consistently adopted throughout these documents.

2.13 Item 13: Pit Wall Stability

3.5.3.2 Pit wall stability

DETSI Statement:

In the PRC plan, a preliminary (in 2021) geotechnical assessment of samples obtained from one partially cored geotechnical borehole showed potential for instability (i.e., steep joints into the eastern highwall).

Due to the limited sample size the South Pit design recommendations for operations were pre-dominantly made on the Bowen Basin experience with similar material characteristics and not the site-specific geotechnical studies.

This information is required to satisfy that the completion criteria relevant to the final landform/PMLU will be safe, stable and self-sustaining.

DETSI Action:

Provide an updated PRC plan that includes the site-specific geotechnical assessment for wall stability of southern void.

Proponent Response:

Site-specific geotechnical assessment for wall stability of the Southern Void is not warranted for the following reasons:

- The Southern Void's walls will comply with the following requirements:
  - A minimum Factor of Safety (FoS) of 1.5, which has been established as a criterion for the Southern Void (NUMA) and included in Table G2 of the EA dated 6 December 2024. This FoS is considered to align with industry best practice and is consistent with other coal mining EAs in the local region

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with similar geologic profiles. The following coal mines were considered and had a similar FoS (≥1.5) for rehabilitated landforms (in both approved PRCP Schedules and EAs):

- New Lenton Coal Mine EPML00475513
- Middlemount Coal Mine EPML00716913

- The design and rehabilitation methodology for residual voids in PRCP , Table G1 "Post Mine Land Use (PMLU) and Non-Use Management Area (NUMA) Rehabilitation Methods" and Table G2 "PMLU and NUMA Rehabilitation Success Criteria, Appendix 1 of the EA.

  These requirements prescribe that the Southern Void must meet specific criteria as per the Residual Void (Southern Void) Design and Closure Plan to ensure the area is stable and safe. This includes the requirement that the Southern Void wall stability will be certified by an AQP that it has achieved a stable condition, including a safety bund constructed in accordance with engineering requirements for height, based on crest width.

- Further control measures will be implemented to ensure stability of the final landform:
  - As detailed in **Section 3.7.2** of the PRCP, monitoring of landform stability will be undertaken to ensure that the area has achieved the success criteria for final landform (safety and stability).
  - Further studies, such as a pit wall stability study will be undertaken as per the requirement of Residual Void (Southern Void) Design and Closure Plan condition G8 and G10 of the EA.

As the PRCP v1 did not previously include the FoS of ≥ 1.5 in the milestone criteria, this factor has been included in relevant sections of the PRCP and PRCP Schedule.

2.14 Item 14: Pit Wall Stability

3.5.3.2 Pit wall stability

DETSI Statement:

The PRC plan states:

"The bulk of the final pit voids walls are assumed to be dominated by NAF overburden, with potential for AMD from areas of residual exposed coal before they are covered at closure in compliance with relevant EA criteria."

It is unclear which EA criteria for covering the exposed coal seams is being referred to.

More importantly, the proposed cover is not supported by monitoring data confirming that it will effectively reduce water or air ingress to minimise AMD generation.

This information is required to satisfy that the completion criteria relevant to the final landform/PMLU will be non-polluting.

DETSI Action:

Provide an updated PRC plan that includes all data and details demonstrating air water dynamics of cover material for Pit walls and its efficacy in reducing generation of AMD issues.

Proponent Response:

The risk of AMD generation from residual exposed coal is low for the following reasons:

- A geochemical assessment was conducted by RGS Environment Consultants Pty Ltd (RGS) from 2021 to 2022. Samples were collected from drill holes along the strike of the coal seam to determine the acid-producing potential as well as risks and opportunities for using mineral waste in rehabilitation. The main findings from the geochemical assessment are:

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  - Low sulfide content: The majority of the mineral waste contains low sulfide content, which is a primary factor in preventing acid generation.
  - Excess acid neutralising capacity (ANC): The mineral waste has excess ANC, meaning it can neutralize any potential acidity that might form.
  - Non-acid forming (NAF) classification: The mineral waste is classified as NAF, indicating a very low risk of acid generation and a high factor of safety concerning the potential for acid generation.
- Additionally, surface runoff and seepage from the mineral waste are expected to have a pH ranging from circum-neutral to mildly alkaline, with low salinity and low dissolved solids, suggesting minimal reactivity and a negligible risk of acid drainage (AMD). Any AMD potentially generated from in-situ coal seams, despite the low risk, would ultimately report to a void lake, which acts as a permanent sink, ensuring containment and preventing spread to the surrounding environment.
- Any exposed coal seams in pits will be treated, removed or covered in the backfilling process as per the rehabilitation criteria in Appendix 1, Table G2 PMLU and NUMA rehabilitation success criteria of the EA0002465. The exposed coal seam with 2 or more meters of NAF material will be covered in the Northern Pit.
- The statement “The bulk of the final pit voids walls are assumed to be dominated by NAF overburden, with potential for AMD from areas of residual exposed coal before they are covered at closure in compliance with relevant EA criteria” in **Section 3.5.3.2** of the PRCP refers to the criteria mentioned above.
- In case groundwater monitoring indicates deviation from milestone criteria which would indicate a potential AMD, a geochemical investigation will be undertaken, and results will be assessed with an AQP to determine and implement necessary remedial actions.
- Surface Water and Groundwater Management: Operational and post-closure monitoring will be conducted for potential AMD at designated monitoring sites, following the methodology prescribed in **Table 3-58** of the PRPC.

No changes have been made to the PRCP and PRCP Schedule as a result of this response.

2.15 Item 15: Void Hydrology

3.5.3.3 Void Hydrology

DETSI Statement:

The final void water balance model (WBM - **Attachment F**) reported that:

“The salinity of the Southern void lake is forecast to continue to increase over time….” with “….lake water EC over 10,000 µS/cm within 70 years of closure.”

The following issues have been identified:

1. Firstly, all inputs to residual void modelling need to be properly described to avoid reporting results that are not fit for purpose (QMRC, 2023). However, the WBM key assumptions (Table 3.2 Attachment F) only considered EC of Rangal Coal measures (1500 µS/cm) and not Rewan Coal measures (48,540 µS/cm – Table 1-2 Attachment D) whereby the latter is also going to affect the mining activities (**Figure 3-39**).

2. Secondly, water held in residual mine voids must be of sufficient quality to support a post-mining land use in the long term (QMRC, 2023). The water stored in south void has PMLU of stock watering (Table 3-12). However, based on WBM results (i.e., EC over 10,000 µS/cm within 70 years of closure) south void pit lake is not suitable for stock watering in the long term (Australian and New Zealand Guidelines for Fresh and Marine Water Quality).

This information is required to satisfy that the completion criteria relevant to the final landform will be able to sustain a nominated PMLU of water storage for stock watering.

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DETSI Action:

Provide an updated WBM that considers groundwater quality results from all hydro-stratigraphic unit(s) with potential to impact mining activities.

Based on the results of the updated WBM, provide an updated PRC plan with appropriate end use for south void and/or water held within it.

Proponent Response:

The Proponent has submitted an EA amendment application to change the Southern Void from a PMLU of water storage (for livestock drinking water) to a NUMA following the receipt of the advice from the administering authority dated 30 November 2023. As this change was approved through an EA amendment application dated 6 December 2024, the requirement for the water held in the Southern Void to be of sufficient quality to support a PMLU of water storage (for livestock drinking water) in the long term is no longer applicable. Therefore, further updates to the water balance model beyond those undertaken for the EA amendment application are not proposed as they are not likely to provide information that would affect the updated NUMA land use for the Southern Void and the water held within it.

2.16 Item 16: Revegetation

3.5.1.8 Revegetation

DETSI Statement:

The PRC plan states:

"To ensure growth media will sustain the PMLU, mine material characterisation will be continually assessed throughout the mine life as will the analysis of soils prior to rehabilitation to determine if soil amendments (ameliorants or fertilisers) are required."

The effectiveness of these soil amendments heavily relies on the application method (i.e., mixing) and the depth of soil treated.

There is a lack of detail on site preparation in terms of application and incorporation of ameliorants (i.e., gypsum) and fertilisers.

DETSI Action:

Provide an updated Rehabilitation Planning Part that includes details on site preparation for all areas regarding profiles, depth, sources of materials etc.

Provide an updated Rehabilitation Planning Part that includes details on seed mixes, sources, and how germinating plants and young growing plants will be managed and protected.

Proponent Response:

The following information has been added to **Section 3.5.1.8** of the PRCP to address this item:

Site preparation, profiles, depth, sources of materials

- Topsoil storage and stability:
  - Stockpiles used for topsoil storage will be seeded with grasses to maintain stability. These stockpiles will be regularly inspected for weeds to ensure their continued effectiveness.
- Soil inventory and application:
  - As discussed in the Proponent's response to Item 7, there will be a shortfall of 126,720 m³ for rehabilitation activities. This will be offset by using approximately 30% of the available subsoil, which will create a suitable growth medium once ameliorated or blended with topsoil.

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  - A comprehensive soil inventory will be prepared prior to soil spreading. This inventory will provide the depths and volumes of soils to be reapplied to each area of disturbance.
  - The stripping depths and total volume of suitable topsoil and subsoil are presented in **Table 3-29** of the PRCP and were determined based on the land suitability assessment (SGM, 2021; SGME 2024), with the assumption that soil fertility will be ameliorated to meet land suitability subclass 4. Topsoil and subsoil will be applied at a thickness of 0.3 m to support the low-intensity grazing PMLU. After application, the soil will be contour-ripped to enhance its structure and facilitate plant growth.
- Grass species selection and seeding:
  - The proposed key flora species and seed mix ratio are outlined in **Table 3-40** of the updated PRCP.
  - Grass species will be chosen to suit the low-intensity grazing PMLU, focusing on species that establish cover quickly and are suitable for the long-term intended land use.
  - Grass species will be sourced from reputable suppliers to ensure high germination rates and compatibility with the local environment.
- Management of germinating young growing plants:
  - The entire tenure is fenced and this fencing will remain in place. After rehabilitation areas are seeded, the fencing will prevent premature grazing and damage by cattle and pest animals until vegetation is well-established.
  - Monitoring and maintenance of rehabilitated areas will be implemented to support the healthy growth of young plants and foster the successful establishment of vegetation.

Incorporation of ameliorants and fertiliser

- Prior to rehabilitation work, sampling of soil and overburden will be conducted to confirm the specific amelioration requirements.
- Fertilisation needs: The need for fertilisers will be determined by an AQP as part of the soil health and suitability assessment as well as the assessment to determine the need for ameliorants and fertilisers.
- Fertilisers will be applied to topsoil and subsoil based on rates outlined in **Section 3.5.1.3** of the PRCP to achieve land suitability class 4 in line with the DME guidelines (1995) and QMRC guidelines (Short, 2023).
- If soil suitability criteria are not met, fertiliser and ameliorant application rates have been determined by an AQP and applied accordingly, at following rates:
  - Fertiliser: 130 kg/ha
  - Lime: 3 t/ha
  - Compost: with 30% OM at 400 kg/ha and with 40% OM at 300 kg/ha.

2.17 Item 17: Revegetation

3.5.1.8 Revegetation

DETSI Statement:

There is a lack of detail for weed management. The PRC plan has identified two (2) weeds of management concern across the ML. The plan states that weeds will be proactively managed as per BME Weed and Pest Management Plan. However, this Weed plan has neither been summarised nor been provided along with the PRCP application.

Weed management details are required to demonstrate that the land is suitable for the PMLU.

DETSI Action:

Provide an updated Rehabilitation Planning Part that includes details on weed management strategies.

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Proponent Response:

BME Weed and Pest Management Plan (WPMP) has been developed for the management of weeds and pests associated with the Project construction, operation and rehabilitation. As part of the WPMP objectives, the Project's land is progressively rehabilitated to help prevent the establishment of invasive species.

In order to mitigate and manage weeds, the tenure ML70257 will be surveyed on an annual basis to detect the presence of any weed outbreaks. Weed observations will be recorded in a Weed Register that will be maintained to help prioritise management efforts. Outside of these regular survey windows, opportunistic weed detections by all site staff will be reported to the Environmental Superintendent, who will be responsible for managing the Weed Register.

Updated weed management information has been added to **Section 3.7.2.1** of the PRCP.

BME Weed and Pest Management Plan has been added as **Attachment K** of the PRCP.

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3. PRCP Schedule

3.1 Item 18: Completion Criteria

DETSI Statement:

Not all completion criteria are SMART.

The completion criteria are legally enforceable commitments once the PRCP Schedule is approved and as such must be written in a manner to deliver on SMART principals.

DETSI Action:

Provide an updated PRCP Schedule that includes criteria which align with SMART principles. This will also require an update of the Rehabilitation Planning Part to ensure consistency between the documents.

Proponent Response:

SMART criteria have been incorporated into the PRCP (**Table 3-18** and **3-60**) and PRCP Schedule for RM1, RM3, RM4, RM5, RM6 and RM7 as requested in this RFI.

3.2 Item 19: General (inconsistency)

DETSI Statement:

For RA6 PMLU, there is inconsistency between Rehabilitation Planning Part (water storage) and PRCP Schedule (grazing).

DETSI Action:

Provide an updated PRCP Schedule that addresses the inconsistency for RA6 PMLU between Rehabilitation Planning Part (water storage) and PRCP Schedule (grazing).

Proponent Response:

RA 6 has been changed to Improvement Area (IA)1 following the EA amendment application to authorise Southern Void to be assessed as a NUMA. The PRCP Schedule is updated to reflect this change.

3.3 Item 20: General (inconsistency)

DETSI Statement:

For total disturbed and rehabilitated area, there is inconsistency between Rehabilitation Planning Part (424 ha) and PRCP Schedule (422 ha).

DETSI Action:

Provide an updated PRCP Schedule that addresses the inconsistency for total rehabilitated area between Rehabilitation Planning Part (424 ha) and PRCP Schedule (422 ha).

Proponent Response:

After a thorough review of the spatial data, it has been confirmed that the PRCP Schedule, which was developed based on the spatial data, is correct in that the total disturbance area for the mine is 422 ha. The 424 was an error in the PRCP. Out of this total 422 ha, 391 ha will be rehabilitated for low-intensity grazing, and 31 ha will be designated as the Southern Void NUMA.

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To resolve the inconsistency, **Table 3-13** and the content of PRCP have been updated to reflect the correct rehabilitation/improvement planning figures.

This change does not impact the fact that the Southern Void NUMA still represents about 7% of the total disturbance area for the mine, and this information is consistent with the information about the NUMA provided in the EA amendment application dated 6 December 2024.

3.4 Item 21: RM1

DETSI Statement:

More specific criteria are required to demonstrate that all the infrastructure, other than those agreed to be retained by the landholder, has been decommissioned and removed.

DETSI Action:

Provide an updated PRCP Schedule that includes SMART decommissioning and removal criteria.

Signed landholder agreement(s) to be provided where the application proposes retained infrastructure.

Proponent Response:

The following SMART criteria have been added to RM1 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

- All roads removed, except the ones agreed with landholder to remain;
- All fencing, not retained for a PMLU removed;
- Machinery and equipment not required for rehabilitation removed; and
- Signed landholder agreement is in place for all infrastructure retained on site.

3.5 Item 22: RM4

DETSI Statement:

Topsoil suitability criteria have not been provided.

Topsoil criteria are required to demonstrate that land is stable, non-polluting and will sustain PMLU.

DETSI Action:

Provide an updated PRCP Schedule to include SMART criteria regarding topsoil quality and its suitability for rehabilitation activities.

Proponent Response:

Topsoil suitability criteria have been provided based on the land suitability assessment (SGM 2021; SGME 2024) in compliance with the QMRC guidelines which superseded the DME (1995) guidelines.

The following criteria have been added to RM4 in **Table 3-18** and **Table 3-60** of the PRCP and the PRCP Schedule:

- Soil testing indicates that the following parameters are met:
  - soil pH 5.6 – 8.4 as measured at any part of the root zone;
  - available-P (mg/kg) ≥ 8 (at 0-10 cm depth);
  - rootzone electrical conductivity (EC) ≤ 10 dS/m; and
  - ESP < 6% (at 0-10 cm depth).

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- Ameliorant and physical treatments such as fertiliser, gypsum and organic matter are applied in accordance with the determination made by an AQP.
- The following minimum application rates for ameliorants and fertilisers are used, unless adjusted by an AQP:
  - Fertiliser: 130 kg/ha;
  - Lime: 3 t/ha;
  - Compost: with 30% Organic Matter (OM) at 400kg/ha and with 40% OM at 300 kg/ha.
- If soil suitability criteria are not met, fertiliser and ameliorant application rates are revised by an AQP and applied accordingly;
- If soil suitability criteria are not met, the following measures are implemented where relevant:
  - an erosion assessment is undertaken by an AQP to determine if soil is being lost to the receiving environment.
  - areas of erosion are repaired.
- AQP certifies that:
  - No active rill or gully erosion >300 mm deep.
  - Maximum erosion rate of <5 t/ha/yr and 10 t/ha/yr as determined by landform design.
  - The installation of certified contours and drains as per design by an AQP (a Certified Professional in Erosion and Sediment Control (CPESC)).
  - All erosion requiring intervention has been remediated and does not impact achieving the PMLU.

3.6 Item 23: RM5

DETSI Statement:

Revegetation criteria are not SMART and lack details such as fencing, seed species to be used, application methods (e.g., tillage, ripping), evidence of natural recruitment, application of soil.

DETSI Action:

Provide an updated PRCP Schedule to include SMART revegetation criteria.

Proponent Response:

The following criteria have been added to RM5 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

- Completed ripping and deep ripping of areas as per recommendations of the soil health and suitability assessment undertaken by an AQP.
- Completed seeding in accordance with the recommended flora species, seed mix ratios and seeding rates determined by an AQP.
- Ameliorant and physical treatments such as fertiliser, gypsum and organic matter are applied in accordance with the determination made by an AQP.
- The following minimum applications rates for ameliorants and fertilisers are used, unless adjusted by an AQP:
  - Fertiliser: 130 kg/ha
  - Lime: 3 t/ha
  - Compost: with 30% OM at 400kg/ha and with 40% OM at 300 kg/ha.
- If soil suitability criteria are not met, fertiliser and ameliorant application rates are revised by an AQP and applied accordingly;
- If soil suitability criteria are not met, the following measures are implemented where relevant:

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  - An erosion assessment is undertaken by an AQP to determine if soil is being lost to the receiving environment
  - Areas of erosion are repaired.
- Invasive plants (as defined in the *Biosecurity Act 2014*) comprise of less than 5% of vegetation groundcover (excluding Parthenium weed *Parthenium hysterophorus*).
- No new invasive plants and weed and infestation density of invasive plants and weeds within the area are consistent with reference sites.
- AQP certifies that:
  - No active rill or gully erosion >300 mm deep.
  - Maximum erosion rate of <5 t/ha/yr and 10 t/ha/yr as determined by landform design.
  - The installation of certified contours and drains as per design by an AQP (a CPESC).
  - All erosion requiring intervention has been remediated and does not impact achieving the PMLU.

It is noted that topsoil application is already a milestone criterion in **Table 3-60.**

3.7 Item 24: RM6

DETSI Statement:

Criteria for achievement of surface requirements are not SMART and lack details about groundcover (including low wall), erosion (rate and classification), soil suitability, water quality, weed management.

Erosion criteria are required to demonstrate that land is stable and non-polluting.

The purpose of the water quality criteria here is to demonstrate any short/medium term effects from the land surface on the receiving environment surface water.

DETSI Action:

Provide an updated PRCP Schedule to include SMART criteria for *'achievement of surface requirements.'*

Proponent Response:

The following criteria have been added to RM6 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

- Soil testing indicates that the following parameters are met:
  - soil pH 5.6 – 8.4 as measured at any part of the root zone;
  - available-P (mg/kg) ≥ 8 (at 0-10 cm depth);
  - rootzone EC ≤ 10 dS/m; and
  - ESP < 6% (at 0-10 cm depth).
- Soil nutrient concentrations, nutrient cycling and vegetation diversity and cover comparable to reference sites.
- The rehabilitation area has an average ground cover of more than 60% as verified by an AQP.
- Invasive plants (as defined in the *Biosecurity Act 2014*) comprise of less than 5% of vegetation groundcover (excluding Parthenium weed *Parthenium hysterophorus*).
- No new invasive plants and weed and infestation density of invasive plants and weeds within the area is consistent with reference sites.
- Water control structures are either removed or free of active erosion as verified by an AQP.
- AQP certifies that:
  - No active rill or gully erosion >300 mm deep.

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  - Maximum erosion rate of <5 t/ha/yr and 10.0 t/ha/yr as determined by landform design.
  - The installation of certified contours and drains as per design by an AQP (CPESC).
  - All erosion requiring intervention has been remediated and does not impact achieving the PMLU.
- Geotechnical adequacy with ≥ 1.5 Factor of Safety.
- Surface water quality complies with the Receiving Environment Monitoring Program (REMP) release limits and trigger levels which are defined in the following EA0002465 requirements:
  - Is monitored at the locations specified in Table C5 - Receiving Water Monitoring Locations
  - Is monitored on a monthly basis or for release events in accordance with the frequency specified in Table C2 - Contaminant Release Limits and Table C3 - Release Contaminant Trigger Investigation Levels – Potential Contaminants and Table C6 – Receiving Water Contamination Trigger Levels
  - Meets the water quality limits specified in Table C2 - Contaminant Release Limits and Table C3 - Release Contaminant Trigger Investigation Levels – Potential Contaminants, and Table C6 – Receiving Water Contamination Trigger Levels.

3.8 Item 25: RM7

DETSI Statement:

Weed criteria have not been provided. Weed criteria are required to demonstrate that the land is suitable for the PMLU.

Weeds should include more than just declared weeds.

DETSI Action:

Provide an updated PRCP Schedule to include SMART weed criteria.

Proponent Response:

The following criteria have been added to RM7 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

- No new invasive plant and weed and infestation density of invasive plants and weeds within the area is consistent with reference sites.

  Please note that these reference sites were selected based on their proximity to the disturbed areas and their similarity in landform, vegetation, and ecosystem functions, ensuring that the rehabilitation efforts can be accurately measured against comparable natural environments. The locations and specific characteristics of these sites are outlined in **Table 3-52** of the PRCP.
- Invasive plants (as defined in the *Biosecurity Act 2014*) comprise of less than 5% of vegetation groundcover (excluding Parthenium weed *Parthenium hysterophorus*).

3.9 Item 26: RM7

DETSI Statement:

The criteria propose land class suitability of class 4. This land class is not suitable for grazing and is not necessarily able to sustain grazing in the long term (refer to item 4 above for further detail).

DETSI Action:

Provide an updated PRCP Schedule to ensure the land suitability class is able to support the PMLU proposed and include information in the Rehabilitation Planning Part to support this.

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Proponent Response:

Please refer to Item 4: Soil Types, Properties, and Productivity for a response to this item.

No changes have been made to the PRCP and PRCP Schedule as a result of this response.

3.10 Item 27: RM7

DETSI Statement:

Soil suitability criteria (e.g., root zone EC) have not been provided.

Soil suitability criteria are required to demonstrate that land is stable, non-polluting and will sustain the PMLU.

DETSI Action:

Provide an updated PRCP Schedule to include SMART criteria regarding soil suitability and indicator parameters for soil monitoring.

Proponent Response:

The following criteria have been added to RM7 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

- Certification from an AQP that the area has achieved stable condition including:
  - Maximum erosion rate of <5 t/ha/yr and 10 t/ha/yr as determined by landform design; and
  - Land Class 4 for grazing according to the Guidelines for Agricultural Land Evaluation in Queensland (DSITI & DNRM, 2015).
- Soil testing indicates that the following parameters are met:
  - Soil pH 5.6 – 8.4 as measured at any part of the root zone;
  - Available-P (mg/kg) ≥ 8 (at 0-10 cm depth);
  - Rootzone EC ≤ 10 dS/m; and
  - ESP < 6% (at 0-10 cm depth).

3.11 Item 28: RM7

DETSI Statement:

Surface water quality criteria is lacking details on monitoring locations, and frequency.

Therefore, the criteria are not measurable.

Water quality monitoring is required to demonstrate the land has achieved a stable condition and is non-polluting.

DETSI Action:

Provide an updated PRCP Schedule with revised water quality criteria to include surface water monitoring locations, and frequency.

Proponent Response:

The following criteria have been added to RM7 in **Table 3-18** and **Table 3-60** of the PRCP and PRCP Schedule:

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- Surface water quality complies with the Receiving Environment Monitoring Program (REMP) release limits and trigger levels which are defined in the following EA0002465 requirements:
  - Is monitored at the locations specified in Table C5 - Receiving Water Monitoring Locations;
  - Is monitored on a monthly basis or for release events in accordance with the frequency specified in Table C2 - Contaminant Release Limits and Table C3 - Release Contaminant Trigger Investigation Levels – Potential Contaminants and Table C6 – Receiving Water Contamination Trigger Levels; and
  - Complies with the water quality limits specified in Table C2 - Contaminant Release Limits and Table C3 - Release Contaminant Trigger Investigation Levels – Potential Contaminants, and Table C6 – Receiving Water Contamination Trigger Levels.

3.12 Item 29: RM7

DETSI Statement:

Groundwater monitoring criteria is lacking details on locations, frequency, CoC and limits.

Making reference to the 'water management plan' does not make the criteria measurable.

DETSI Action:

Provide an updated PRCP Schedule with revised criteria to include groundwater monitoring details (e.g. locations, frequency, quality characteristics and limits).

PRCP Schedule conditions and criteria should be separate from the EA.

Proponent Response:

The following criteria have been added to RM7 in **Table 3-18** and **Table 3-60** of the PRCP the PRCP Schedule:

- Groundwater quality from the area complies with the following EA0002465 requirements:
  - Is monitored at the locations and frequency specified in Table D1 - Groundwater Monitoring Locations and Frequency;
  - Complies with the groundwater quality limits specified in Table D2 - Groundwater quality triggers and limits.

3.13 Item 30: RM7

DETSI Statement:

Surface water receiving environment water quality monitoring has not been included.

Water quality monitoring is required to demonstrate the land has achieved a stable condition and is non-polluting.

DETSI Action:

Provide an updated PRCP Schedule to include surface water receiving water quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring.

Proponent Response:

Please see the response to Item 28: RM7.

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3.14 Item 31: RM8

DETSI Statement:

Water storage criteria for stock watering are not SMART.

For instance, the criteria states:

"Water Quality meets the relevant Water Quality Objectives (WQO) Guidelines."

Such language does not make the criteria measurable. There should be reference to specific guidelines, or a Table listing quality characteristics to be measured/monitored to make sure stored water can sustain PMLU (i.e., stock watering).

Moreover, it lacks details about monitoring duration (i.e., 5 consecutive years) for which the stored water must meet Guideline values.

DETSI Action:

Provide an updated PRCP Schedule to include SMART water storage criteria to sustain PMLU.

Proponent Response:

RM8 has been removed from the PRCP as it refers to NUMA (Southern Void NUMA for water storage) and there is no longer the need to monitor surface water storage. The SMART criteria for NUMA have been added to **Section 3.4.2** and **Table 3-20** of the PRCP and to the PRCP Schedule. The milestone criteria for NUMA pertaining to water quality are criteria for groundwater quality specified below.

- Groundwater quality from the area complies with the following EA0002465 requirements:
  - Is monitored at the specified locations and frequency specified in Table D1 - Groundwater Monitoring Locations and Frequency;
  - Complies with the water quality limits specified in Table D2 - Groundwater quality triggers and limits.

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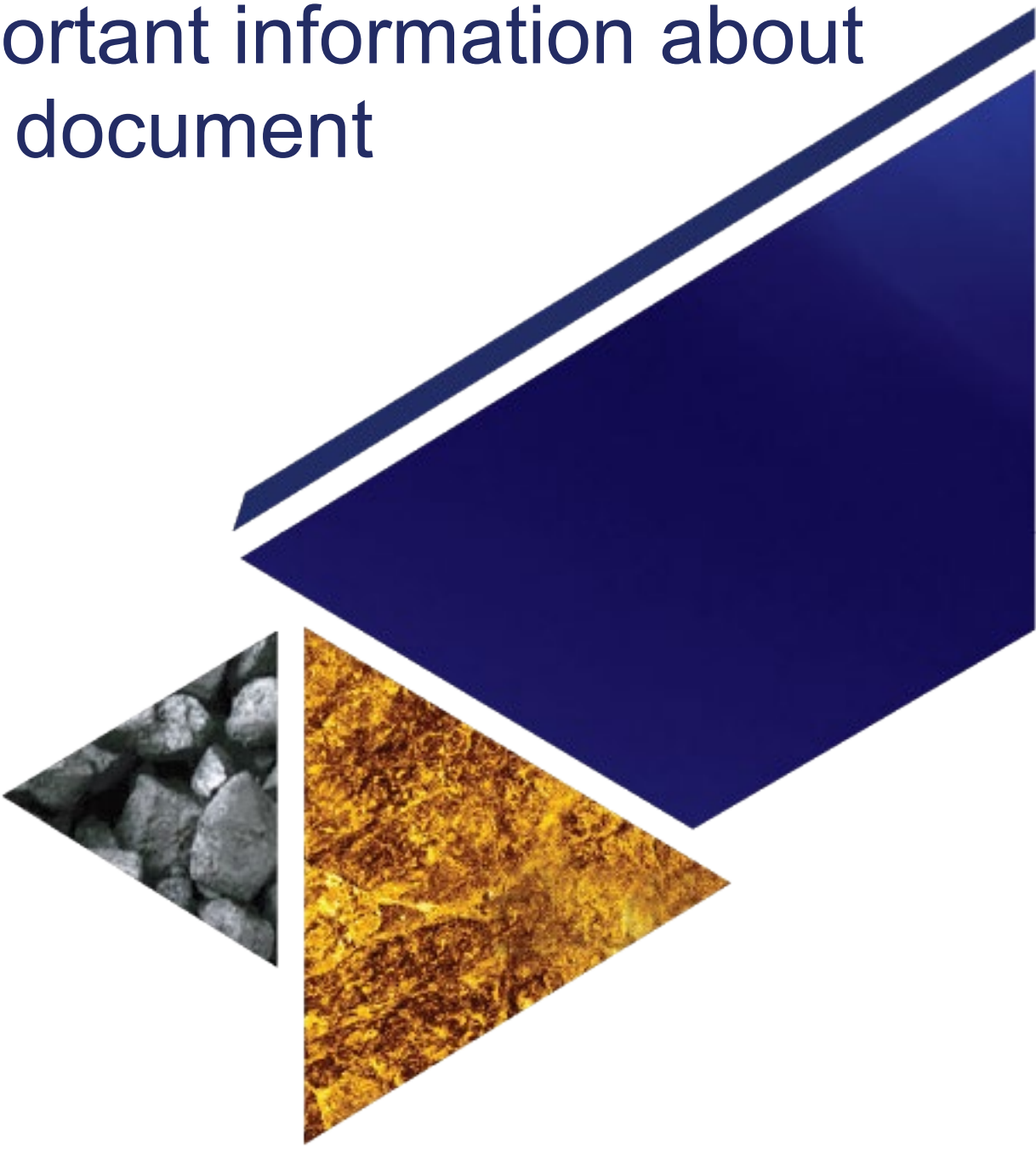
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Appendix A. Important information about this document



IMPORTANT INFORMATION ABOUT THIS DOCUMENT

1. Our Client

This report has been produced by or on behalf of RPM Advisory Services Pty Ltd (RPM) solely for Coking Coal One Pty Ltd a wholly owned subsidiary of Bowen Coking Coal Limited (the Client).

2. Client Use

The Client's use and disclosure of this report is subject to the terms and conditions of the engaging Agreement under which RPM prepared the report.

3. Notice to Third Parties

RPM prepared this report for the Client only. If you are not the Client:

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4. Independence

RPM provides advisory services to the mining and finance sectors. Within its core expertise it provides independent technical reviews, resource evaluation, mining engineering, environmental assessments and mine valuation services to the resources and financial services industries.

RPM has independently assessed the subject of the report (the "Project") by reviewing pertinent data, which may include Resources, Reserves, existing approvals, licences and permits, manpower requirements and the life of mine plans relating to productivity, production, operating costs and capital expenditures. All opinions, findings and conclusions expressed in this report are those of RPM and specialist advisors.

Drafts of this report were provided to the Client, but only for the purpose of confirming the accuracy of factual material and the reasonableness of assumptions relied upon in this report.

RPM has been paid, and has agreed to be paid, professional fees for the preparation of this report. The remuneration for this report is not dependent upon the findings of this report. RPM does not have any economic or beneficial interest (present or contingent), in the Project, in securities of the companies associated with the Project or the Client

5. Inputs, subsequent changes and no duty to update

RPM has created this report using data and information provided by or on behalf of the Client. Unless specifically stated otherwise, RPM has not independently verified that data and information. RPM accepts no liability for the accuracy or completeness of that data and information, even if that data and information has been incorporated into or relied upon in creating this report (or parts of it).

The conclusions and opinions contained in this report apply as at the date of the report. Events (including changes to any of the data and information that RPM used in preparing the report) may have occurred since that date which may impact on those conclusions and opinions and make them unreliable. RPM is under no duty to update the report upon the occurrence of any such event, though it reserves the right to do so.

6. Inherent Mining Risks

Mining is carried out in an environment where not all events are predictable.

Whilst an effective management team can identify the known risks and take measures to manage and mitigate those risks, there is still the possibility for unexpected and unpredictable events to occur. It is not possible therefore to totally remove all risks or state with certainty that an event that may have a material impact on the operation of a mine, will not occur.

The ability of any person to achieve forward-looking production and economic targets is dependent on numerous factors that are beyond RPM's control and that RPM cannot anticipate. These factors include, but are not limited to, site-specific mining and geological conditions, management and personnel capabilities, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner, unforeseen changes in legislation and new industry developments. Any of these factors may substantially alter the performance of any mining operation.

7. Limitations and Exclusions

RPM 's report is based on data, information reports, plans and tabulations, as applicable, provided by Client or on behalf of the Client. The Client has not advised RPM of any material change, or event likely to cause material change, to the operations or forecasts since the date of assets inspections.

The work undertaken for this report is that required for a technical review of the information, coupled with such inspections as RPM considered appropriate to prepare this report.

Unless otherwise stated specifically in writing, the report specifically excludes all aspects of legal issues, commercial and financing matters, land titles and agreements, except such aspects as may directly influence technical, operational or cost issues and where applicable to the JORC Code guidelines.

RPM has specifically excluded making any comments on the competitive position of the relevant assets compared with other similar and competing producers around the world. RPM strongly advises that any potential investors make their own comprehensive assessment of the competitive position of the relevant assets in the market.

8. Indemnification

The Client has indemnified and held harmless RPM and its subcontractors, consultants, agents, officers, directors and employees from and against any and all claims, liabilities, damages, losses and expenses (including lawyers' fees and other costs of litigation, arbitration or mediation) arising out of or in any way related to:

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- *RPM 's services or materials; or*
- *Any use of or reliance on these services or materials by any third party not expressly authorised by RPM,*

save and except in cases of death or personnel injury, property damage, claims by third parties for breach of intellectual property rights, gross negligence, wilful misconduct, fraud, fraudulent misrepresentation or the tort of deceit, or any other matter which be so limited or excluded as a matter of applicable law (including as a Competent Person under the Listing Rules) and regardless of any breach of contract or strict liability by RPM.



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