

Notice

Environmental Protection Act 1994

Information request

This information request is issued by the administering authority under section 140 of the Environmental Protection Act 1994 to request further information needed to assess an application for a PRCP schedule.

To: Yarrabee Coal Company Pty Ltd
Tower 2, Level 18, 201 Sussex Street
Sydney, NSW 2000

Via email transmission only
Email: Justin.Vohland@yancoal.com.au

Attention: Justin Vohland

Your reference: EPML00844613; P-PRCP-100770697
Our reference: A-PRCP-NEW-100770692; P-PRCP-100770697

Further information is required to assess an application for a PRCP schedule

1. Application details

The application for a PRCP schedule was received by the administering authority on 28 November 2024.

The application reference number is: A-PRCP-NEW-100770692

Land description: Mining Lease (ML) 1770, ML80049, ML80050, ML80096, ML80104, ML80172, ML80195, ML80196, ML80197, ML80198

2. Information request

The administering authority has considered the abovementioned application and is writing to inform you that further information is required to assess the application (an information request).

The information requested is specified in **Attachment 1: Additional information requested for proposed PRC plan** to this notice.

3. Actions

The abovementioned application will lapse unless you respond by giving the administering authority -



- (a) all of the information requested; or
- (b) part of the information requested together with a written notice asking the authority to proceed with the assessment of the application; or
- (c) a written notice –
 - i. stating that you do not intend to supply any of the information requested; and
 - ii. asking the administering authority to proceed with the assessment of the application.

Should the information request require an EIS process or applicant to submit a progressive rehabilitation and closure (PRC) plan then it must be completed and submitted.

A response to the information requested must be provided by **18 May 2026** (the information response period). If you wish to extend the information response period, a request to extend the period must be made at least 10 business days before the last day of the information response period.

The response to this information request or a request to extend the information response period can be submitted to the administering authority by email to CRMining@detsi.qld.gov.au.

If the information provided in response to this information request is still not adequate for the administering authority to make a decision, your application may be refused as a result of section 176 of the *Environmental Protection Act 1994*, where the administering authority must have regard to any response given for an information request.

4. Human rights

A human rights assessment was carried out in relation to this decision and it was determined that the decision is compatible with human rights.

If you require more information, please contact the department on the telephone number listed below.



Signature

13/11/2025

Date

Ben Byrd
Department of the Environment, Tourism, Science
and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Business Centre Coal
PO Box 3028, Emerald QLD 4720
Phone: (07) 4987 9320
Email: CRMining@detsi.qld.gov.au

Attachments

[Information sheet: Internal review and appeals](#) (ESR/2015/1742)

Attachment 1: Additional information requested for proposed PRC plan

References to the PRCP Guideline are to the administering authority's guideline *Progressive rehabilitation and closure plans (PRC plans)* (ESR/2019/4964).

Where updates to the Rehabilitation Planning Part, the draft PRCP schedule or the spatial files are required as a result of this information request, provide such in response to this notice (with spatial files to also be submitted to the administering authority's Spatial Submissions Inbox spatialsubmit@detsi.qld.gov.au).

To assist in the preparation of appropriate milestones and milestone criteria, the department provides as **Attachment 2** of this notice a draft PRCP Schedule. The provision of this schedule is to assist in the iterative process of the PRCPs, providing examples of how SMART principles should be applied. Specific criteria for milestones will be defined further and discussed in the decision stage. This will include consideration of the matters raised in the information request notice and any subsequent response, as well as consideration of the proposed criteria and further need for additional criteria. A lack of comment on a criterion must not be considered as the department's acceptance of the criteria, the rehabilitation/improvement areas or timeframes of the schedule.

Item	Relevant Section (proposed PRC plan)	Matter	Information Request
Rehabilitation Planning Part			
1.	Section 2.6 Soils and Overburden materials Section 6.6.3 Soil stripping and Management Measures Appendix K - Landform Design and Stabilisation: Yarrabee Coal Mine Appendix M - Rehabilitation Landform Design Appendix N – GT Environmental Soils and Land Suitability Assessment Section 6.6.3.1 Ameliorant and Fertiliser requirements Section 6.6.2 Soils and Land suitability	Section 2.6 ‘Soils and Overburden materials’ and section 6.6.3 ‘Soil stripping and Management Measures’ of the Rehabilitation Planning Part indicates topsoil limitations to vegetation establishment including acidic and alkaline pH, high sodicity and dispersivity, poor surface soil structure, salinity, low fertility indicators, and firm to hard setting surfaces restricting seedling emergence. Section 6.6.3.1 ‘Ameliorant and Fertiliser Requirements’ of the Rehabilitation Planning Part provides general statements on amelioration and management to improve topsoil resource quality. A number of ameliorants and fertiliser application recommendations have been made in the attachments Appendix K and Appendix N on suitability of the land for grazing and native vegetation PMLUs and recommendations on the necessary management and amelioration needed to improve topsoil quality for PMLUs. As per section 3.6.1 of the PRCP guideline: <i>‘This section outlines the range of information that the administering authority considers is necessary to underpin the development of the rehabilitation or management methodologies applicable to new and existing mines for most domains. The applicant must include the information as appendices to the Rehabilitation Planning Part.’</i> The proposed strategy of the Rehabilitation Planning Part (taking consideration of section 6.6.4, 6.6.3.1 and Appendix K) to rely on recommendations made by an AQP for the development of suitable soils for use in rehabilitation during rehabilitation in lieu of setting specific soil quality criteria before rehabilitation is not supported. It is also important not to rely on vegetation performance as a surrogate for demonstrating appropriate soil quality as successful vegetation growth is not indicative of long-term nutrient limitations.	(a) Provide confirmation in the Rehabilitation Planning Part that consideration has been given to the treatment of soils prior to use in rehabilitation to allow time for the ameliorants (e.g. gypsum, organic/compost), fertiliser (i.e. NPK/organic) and microbial activity (nitrifiers) to produce the AQP recommended soil quality criteria. (b) Update the proposed rehabilitation strategy in the Rehabilitation Planning Part and rehabilitation milestone criteria to specify the characteristics of both the topsoil and subsoil to be achieved and to be consistent with the requirements of the target PMLU. (c) Provide more information in the Rehabilitation Planning Part about use of ameliorants that has been determined as suitable for each PMLU for the individual RAs given the fertilizer and ameliorants required for grazing and native

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	Section 6.6.4 Topsoil balance	The as-constructed growth media characteristics, including topsoil and subsoil, must be demonstrated and confirmed by an AQP. Simply applying gypsum and fertiliser just prior to placement may not demonstrate soil suitability. In addition, there is no specific information on the use of ameliorants that has been determined as suitable for each PMLU for the individual RAs given the fertilizer and ameliorants required for grazing and native vegetation habitat would be different. As the Rehabilitation Planning Part supports and justifies the development of the proposed PRCP schedule, more specific details are required to inform the strategies proposed to ensure erosion is avoided and plant development is maximised.	vegetation habitat would be different. Note –refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule regarding topsoil and growth media.
2.	Section 6.6.4 Topsoil balance Section 6.6.3.1 – Amelioration and Fertiliser Requirements Appendix N – GT Environmental Soils and Land Suitability Assessment	Section 6.6.4 of the Rehabilitation Planning Part states there will be a topsoil deficit of 3,175,710 m³. Section 6.64 of the Rehabilitation Planning Part has made general statements about how this deficit will be addressed including stripping to a greater depth where soil properties are suitable or possible use of other materials/growth media enhancers. Section 3.6.1 of the PRCP Guideline requires, as a minimum, that the quality and quantity of the available resources required to complete the target rehabilitation methodology is provided. The Rehabilitation Planning Part must also include a revegetation plan that identifies the growth media that would be suitable to sustain the PMLU, whether this is available on site, and must include site preparation strategies including spreading of growth medium layer (topsoil, topsoil/rock mix, or suitable waste if appropriate) to a depth suitable for the target vegetation Section 9-3 of Appendix N has listed a number of sampled soils that are recommended for use as topsoil on flat to sloped areas (slope not determined), and in limited volumes/depths, with most requiring gypsum/organic matter	(a) Provide more information in the Rehabilitation Planning Part about how the topsoil deficit will be addressed in order to provide the required volumes and quality of growth media needed for rehabilitation. (b) Provide further information on how the QMRC guideline on topsoil deficits has been considered. Note – refer to Attachment 2 to this notice which provides an example of the types of SMART criteria which should be included in the PRCP Schedule regarding growth media.

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		addition to be considered suitable. However, there is no detailed information on how addressing the topsoil deficit will ensure sufficient growth media will be manufactured. It is unclear on the suitability of the proposed deficit options for proposed PMLUs and the topsoil balance that will meet the current topsoil deficit. In Appendix N, in GT Environmental (2024) report in Table 9-2, it recommends using Soil Profile Classes (SPC) volumes that may not be available due to the undulating, microrelief surfaces such as Yb1, Yb3, Yb5 and Yb12. However, these SPCs represent the majority of the proposed topsoil inventory. The QMRC guideline on ‘Review of techniques to address topsoil deficit in open cut coal mining under rehabilitation in Queensland’ has identified the key attributes that a suitable growth medium needs to support vegetation growth for successful rehabilitation. It is unclear if/how this guideline has been considered to address topsoil deficit.	
3.	Section 2.7.6 Groundwater Dependent Ecosystems - Terrestrial Vegetation	As per figure 2-8 of the Rehabilitation Planning Part, there are a number of identified Potential GDEs covering a total of approximately 30 ha within the MLs and include: • 27.6 ha of remnant RE 11.3.25 (<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines); • 1 ha of remnant RE 11.3.1 (<i>Acacia harpophylla</i> and/or <i>Casuarinacristata</i> open forest on alluvial plains); and • 1.9 ha of HVR RE 11.3.1 (<i>A. harpophylla</i> and/or <i>C. cristata</i> open forest on alluvial plans). However, no information has been provided on the status of these GDEs to inform the baseline information as per section 3.1 of the PRCP guideline. In	Provide further details on the status of these GDEs identified in the Rehabilitation Planning Part and how the rehabilitation activities will be conducted to minimise any impact on these GDEs. Note – refer to Attachment 2 which provides an example of PRCP11 relating to the obligations for ensuring GDEs are not impacted.

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		addition, no information has been provided identifying how rehabilitation activities of the milestones will minimise any impact on these GDEs.	
4.	Section 2.12 Existing rehabilitation	The Rehabilitation Planning Part lacks specificity as to the rehabilitation works previously carried out including when they were commenced and completed. Broad discussion is provided as to the completion of 470ha of rehabilitation to date including discussion on some issues encountered in the rehabilitation and states 320 ha will need to be re-disturbed. Some monitoring data is provided, and it is understood that the rehabilitation has not been progressively certified. To address the section 126C(1)(j) of the EP Act, the PRC Plan must include details about any pre-existing rehabilitation inclusive of: • a description of the rehabilitation works previously carried out • when the rehabilitation works commenced and were completed The limited detail on the previous works completed and the anticipated timeframes to achieve the milestone criteria do not enable the department to appropriately consider how the existing rehabilitation aligns with the milestone criteria proposed and to ensure that the PRCP schedule will be appropriate for the stage at which rehabilitation has been completed.	(a) Provide a revised Rehabilitation Planning Part which details (including their area (hectares)) when all rehabilitation works commenced and were completed in each area of existing rehabilitation described in 'Section 2.12 Existing rehabilitation' (or indicative timeframes of the age of the rehabilitation). (b) Provide further detail of the capacity of the existing rehabilitation to achieve rehabilitation milestones and timeframes of the draft PRCP schedule. (c) Provide any available monitoring reports or data of the achievement of the milestones of the draft PRCP schedule and any variations required to allow for demonstration of the achievement of stable condition for the existing rehabilitation.

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5.	Section 2.12.1 Monitoring existing rehabilitation	Section 2.12.1 of the Rehabilitation Planning Part describes areas of existing rehabilitation which are failing to meet the completion criteria, in particular monitoring of grazing sites in 2023 showed that numerous sites no longer meeting the target 30% living groundcover criteria in areas where the same PMLU is proposed. In addition, the Rehabilitation Planning Part describes some areas have lost topsoil due to the land being too steep. With the Rehabilitation Planning Part (section 6.5) identifying the importance of vegetation cover in landform stability, site evidence of living groundcover not achieving target is of concern to the department. The Rehabilitation Planning Part indicates that the grazing sites are not meeting completion criteria for groundcover primarily as a result of climatic conditions. No information has been presented from comparable reference sites to enable the department to assess how climatic conditions are more broadly presenting as a limiting factor for groundcover success in local grazing outcomes. With regard to the Native vegetation sites, the Rehabilitation Planning Part indicates the 2023 rehabilitation monitoring found that overall stems/ha has not changed since initial baseline data was collected. A number of reasons were given for the failures of these plants including lack of prior soil treatment and improvement, little maintenance and watering after establishment and inappropriate species selection. The Rehabilitation Planning Part states that further rehabilitation work will be focused on ensuring all sites meet all rehabilitation completion criteria of the proposed PRCP schedule. Learnings from these failures have been incorporated into updated rehabilitation practices, including ensuring that land to be rehabilitated to a PMLU of grazing has slopes <12.5%. No information has been provided regarding the rehabilitation practices that resulted from	(a) Provide comparable results for reference sites to demonstrate how climatic conditions have influenced the groundcover decline comparable to that seen in rehabilitation sites. (b) Provide further information on how learnings from rehabilitation site failures such as loss of topsoil have been incorporated into updated rehabilitation strategies and milestone criteria for different PMLUs and for slopes up to 27%. Note –refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule regarding Revegetation/Achievement of surface requirements milestones for final post-mining landform uses.

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		these learnings and if any relate to the proposed slopes of up to 27% for PMLU of native vegetation.	
6.	Section 4.1 Post-Mining Land use - Water storages	This section states that water stored on-site will be rehabilitated to meet water of a quality suitable for sustaining livestock and native fauna, as per the ANZECC and ARMCANZ Water Quality Guideline - Livestock drinking water guidelines (2018). In accordance with sub-heading 'water management' in section 3.6.1 General rehabilitation practices of the PRCP Guideline, the Rehabilitation Planning Part must include details on the contaminants that pose a risk to the environmental values of the receiving environment; infiltration and seepage intervention and collection controls and the on-going water management and reduction requirements (i.e. treatment). However, no information has been provided on how water management/treatment will be applied, and what water quality parameters will be addressed with reference to the possible contaminants of concern for the site.	(a) Provide further detail on what water quality parameters will be measured and how these were selected. (b) In addition, as per section 3.6.1 of the PRCP Guideline, provide information regarding how water storages will be managed/treated to meet water quality parameters. In responding to this item, incorporate outcomes from the other information request items below. (c) Discuss how the ANZECC and ARMCANZ Water Quality Guideline - Livestock drinking water guidelines will be suitable for native fauna.
7.	Section 6.1 Landform design Section 6.7.3.7 - Current active Pits Stability Assessment	Section 6.1.3 of the rehabilitation planning part states that residual void batters will be rehabilitated with native vegetation that is appropriate to the final character and slope of the void walls. Slopes are proposed to be treated where required to provide erosion stability per the design parameters in Table 6-1. However, it is unclear what is proposed for residual voids of more than 25%	(a) Provide further details on the consideration of the erosional stability in the final wall design for proposed slopes of pit walls in the NUMA.

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		slope, noting that the table note states “<i>The steeper 25 to 33% slope treatment is applicable to shorter slopes only</i>”, and topsoil application is not proposed. Section 6.7.3.7 Current Active Pits Stability Assessment of the rehabilitation planning part states that Pit walls steeper than 65 degrees present potential instability risks. In Table 6-41 it states that the long-term stability of the current six (6) active pits has a calculated Factor of Safety (FoS) of < 2 (except DOM2S). In the draft PRCP schedule, a management milestone proposed is that an appropriately qualified geotechnical engineer certifies that low walls, high walls and end wall slopes are safe and achieve a minimum factor of safety of 2. However, no information is provided in the rehabilitation planning part regarding how a minimum FoS of 2 will be achieved. In accordance with Section 3.6.3 of the PRCP guideline, the rehabilitation planning part must describe mechanisms for achieving acceptable geotechnical stability, including methods and techniques for achieving safe slopes must be detailed.	(b) Provide further details to inform how the management milestones proposed in the PRCP schedule will be achieved and how a factor of safety of a minimum of 2 will be achieved, with reference to the requirements of section 3.6.3 of the PRCP guideline, to ensure that the NUMA will be managed in accordance with best practice management measures. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule regarding improvements areas.
8.	Section 6.1.2 Waste rock emplacements	Section 6.1.2 of the Rehabilitation Planning Part states that waste rock emplacements will be rehabilitated to comprise of slopes with gradients between 0 and <27%. The Rehabilitation Planning Part indicates that steeper slope areas (>12.5%), although having a smaller catchment area, and volume and length of surface water run-off, will need to manage increased surface water run-off velocity. While some measures have been suggested such as shaping slopes to have non-linear profiles, surface roughness, and graded banks and contour channels/benches, no information has been provided on what measures will be implemented and demonstrate that erosion risk and sediment run-off	Provide further information regarding how the waste rock emplacements will be designed to reduce erosion risk and sediment run-off downstream. Note – refer to Attachment 2 which provides an example of the types of PRCP conditions and SMART criteria which could be included erosion management is achieved.

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		downstream will be managed and ensure these PMLUs are stable and non-polluting.	
9.	Section 6.1.2 and 6.1.4 Water management Infrastructure Section 6.3.3.1 – Pit Ingress protection, drains and diversions	Section 6.1.2 of the Rehabilitation Planning Part indicates that water management controls such as sediment dams, and drainage swales and diversion channels will be incorporated where required to manage and support post-mining surface water flows and divert run-off away from erodible surfaces. The Pit ingress Protection drains and diversion section in Section 6.3.3.1 Hydraulic Model Build states that additional updates to drainage and void flood protection infrastructure will be required to avoid runoff collecting within the residual voids and to redirect surface water flows around residual voids in the final landform. As per 'water management' in section 3.6.1 of the PRCP guideline, that rehabilitation planning part must describe: • surface water diversions and long-term management requirements • on-going water management and reduction requirements (i.e. treatment). The information presented in the rehabilitation planning part does not provide for the level of detail required to address these requirements to enable the department to assess whether the proposed rehabilitation or management methodologies are adequate.	Provide further information on the proposed controls to be implemented to ensure surface water flows are appropriately managed in accordance with the information required under s 3.6.1 of the PRCP guideline. Note – refer to Attachment 2 which provides an example of the types of PRCP conditions and SMART criteria which could be included for water management
10.	Groundwater monitoring bores	A review of the groundwater database and Qld Globe and a check with Local Groundwater Water Values indicates that drilling logs for some of the monitoring bores drilled in 2024 have not been provided previously.	Provide drilling logs for the following groundwater monitoring bores: MB01, MB02, MB03, MB10A MB10B; MB11A and MB11B.

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11.	Section 4.2.3 - Groundwater flow direction	In section 4.2.3 of the Rehabilitation Planning Part, it states that “<i>Groundwater levels in the across Yarrabee Mine broadly fall from south to north towards the Mackenzie River floodplain. The highest groundwater levels are observed in MB12 at the southern end of the site around 127 mAHD and then generally fall to the north with levels in the central area of the site in the range 115-105 mAHD. At the northern end of the site MB04 has shown a consistent level of around 101.5 mAHD since installation. Whilst MB06, located in the central area of the site, does record the lowest RCM groundwater level (~83 mAHD), this is considered to be impacted by mining in YEN-Pit adjacent to the north-east which is supported by the ~1m decline in the level in this bore over the year of monitoring despite the rising trend in the CRD.</i>” This information assists in understanding the existing groundwater flow direction in the Rangal Coal Measures, but observed water levels from the monitoring bores should be used to develop contours of groundwater elevation in the Rangal Coal Measures or at the very least a map showing the locations of the bores and spot heights of groundwater elevations. These contours or mapped groundwater elevations could then be compared with the modelled groundwater levels at the end of the calibration period to provide confidence in the modelling.	Provide groundwater elevation contours based on observed data for the Rangal Coal Measures or a map showing the locations of the monitoring bores and spot heights of groundwater elevations for the Rangal Coal Measures.
12.	Section 7.5 - Water in existing pit voids	Section 7.5 of the Rehabilitation Planning Part discusses Groundwater Surface water interaction. It is understood that some areas of water storage exist at Yarrabee in old mine pits. However, there appears to be no discussion in the report as to whether there is connection between groundwater and these areas of stored surface water. It is important to understand these potential existing linkages between groundwater and surface water in order to support the calibration of the numerical groundwater model.	Advise as to whether any existing areas of surface water at Yarrabee in old mine pits are connected to groundwater and if so, how this was dealt with in the groundwater modelling.

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13.	Section 8.10 - Particle tracking	This section states: <i>"Particles were released at the end of recovery when groundwater levels have equilibrated. At the start of recovery, the gradients into the recovering mine voids are steeper and this can result in the capture of particles in the recovery stage by voids which may ultimately not behave entirely as groundwater sinks once equilibrium conditions are reached. At the end of recovery, the hydraulic gradients around the voids are shallower and the groundwater flow paths may be different with a greater risk of off-site migration."</i> The department has concerns if the particles are released at the end of recovery what potential is there for water from the voids to have travelled off lease between mine closure and the point in time when groundwater levels have equilibrated. This section also states: <i>"Particles from CE-North reach the maximum or near maximum travel time of 1000 years without terminating."</i> It is noted from Figure 8-18 that the particles referred to travel off lease to the west and are still off lease to the west after 1000 years of travel time. There is no discussion as to what issues/ impacts this may cause. As per section 176A(3)(c) the administering authority must not approve the proposed PRCP schedule unless the administering authority is satisfied the schedule provides for all land the subject of the schedule to be— (i) rehabilitated to a stable condition; or	(a) Given the particle tracking releases particles at the end of recovery, assess and justify what potential there is for water from the voids to have travelled off lease between mine closure and the point in time when groundwater levels have equilibrated. (b) Provide detail as to what impact the movement of water off lease from CE-North will have on the environment, the risk of such harm and the measures, criteria and other considerations that will ensure that the risks to the environment are minimised.

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		(ii) managed as a non-use management area in a way that achieves best practice management of the area and minimises risks to the environment. A NUMA that is not a sink to groundwater, is expected to have the potential to be a risk to the environment. Detail as to the potential and risk of harm and the measures to be taken to minimise the risks to the environment is required.	
14.	Section 6.3 Final Landform flood assessment Appendix I - Engeny Final Landform Flood Assessment	Table 6-13 Void immunity in the Rehabilitation Planning Part, indicates that all residual voids have a PMF immunity except DOM6 that can only achieve immunity at a 0.1% AEP event. The interaction of a 0.1% AEP and PMF flood event and the PRCP landform has been assessed as part of the final landform flood modelling completed. This informs the interaction between the diversion and final voids, the landform, and potential impacts to downstream infrastructure. In Appendix I, it indicates that flood extents reach the margins of several residual voids, though no overt ingress is reported. However, the modelling undertaken has a number of uncertainties (lack of calibration, validation, and climate change adjustments). As such there is potential for flood magnitudes and frequencies to be underestimated. As section 6.3.4.1 of the Rehabilitation Planning Part shows that even in the two modelled AEPs that there will be some flood velocities in excess of 2.5 m/s, further assessment is required to ensure flood risk is appropriately managed to ensure flow velocity risks are mitigated. In section 6.3.4.1 of the Rehabilitation Planning Part, it states that the channel stability assessment focused on 50% AEP and 2% AEP events as most critical for stability. However, consideration of range of design storm events modelled flood levels (including probable maximum flood levels) should be considered. It is unclear the reasons for focusing on these 2 AEP events.	(a) Provide further modelling that the final landform, including the levee and channel stability, demonstrates hydraulic and geotechnical stability for design events up to the 0.1 % AEP and PMF. (b) Propose SMART criteria for the achievement of hydraulic and geotechnical stability of the final landform including detailed criteria where there are risks of flood velocities in excess of 2.5 m/s. (c) Provide information on the controls proposed to promote vegetation establishment to ensure stability of the landform, or additional interim measures required prior to establishment – e.g. rock mulching/armouring.

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		This section also states that while the DNRME document Guideline: “<i>works that interfere with water in a watercourse for a resource activity – watercourse diversions authorized under the Water Act 2000 (OSW/2019/4599)</i>” was used to inform velocities that were consistent with stable systems. Whilst this guideline provides threshold values, there are limitations when using these values outside their intended use. As such the modelling was tailored and tolerable upper limits were not known”. The DNRME guideline states that ACARP guideline values were derived to assist watercourse diversion design within the Bowen Basin. It is unclear how these values were used, what the limitations were and how modelling was done without tolerable upper limits to determine the potential for flow velocity risks. It is also noted that the 39% AEP velocity only met the DNRME and ACARP design criteria for stability of the channel for vegetated conditions. Consequently, construction timing and vegetation development will be important to be taken into consideration during future Functional and Detailed Design stages. Establishment of self-sustaining vegetation will be critical for the ongoing stability of the diversion. Particular care should be undertaken during the early establishment period. Potential controls include construction during appropriate climatic conditions (i.e. during the dry season) and development of a detailed revegetation plan to be implemented to promote rapid establishment.	Note – refer to Attachment 2 which provides an example of the types of PRCP conditions and SMART criteria which could be considered for ensuring flood protection is achieved.
15.	Section 6.5 – Erosion and Landform Evolution assessment	Section 6.5 of the Rehabilitation Planning Part does not provide sufficient detail on the management of erosion to address risks associated with poor vegetation establishment, inappropriate material placement and the use of berms that potentially increase the risk of erosion in the long-term. Additionally, there is also a number of inconsistencies on the maximum erosion rate between reports. In Appendix K- Landloch Landform Design and Stabilisation report (2016) it states a soil loss of 5 tonnes per hectare per year	(a) Provide further information on what the target average and maximum erosion rates expected to achieve landform stability at across all landforms. (b) Confirm when the recommendations of section 8.1 of

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	Appendix K - Landloch Landform Design and Stabilisation Appendix L - Landloch Erodibility of Rocksoil Mixtures and Land Rehabilitation 2016 WEPP model and 2020 WEPP Model Appendix M - Rehabilitation Landform Design	(t/ha/y) has been widely accepted for mining landforms on the basis that riling is largely if not completely absent and a landform achieves an acceptable level of stability to erosion. Subsequently, 5 t/ha/y was the targeted soil loss for this assessment. In Appendix L - Landloch Erodibility of Rocksoil Mixtures and Land Rehabilitation report (2020), it states as coarse waste is likely to be utilised during rehabilitation, it was determined that the Yarrabee landform was considered a medium risk site, for which an average erosion rate (soil loss) of 6 t/ha/y and a maximum rate of 12 t/ha/yr would be acceptable. Consequently, these target values were applied to the WEPP model. Section 8.1 of Appendix M states: <i>Artefacts exist in the final landform DEM that caused SIBERIA to predict erosion when it is not likely to occur when the design is implemented. These artefacts include steep portions of the slopes where the design is meshed with the surrounding DEM. Prior to implementing the design, these areas must be removed so that the rehabilitation gradient is adopted for the entire length of slope.</i> It is unclear whether the final landform is erosionally stable. Appendix M identified that a number of the areas relevant to this statement has the potential for gully development along with erosion rates exceeding an annual average of 5t/ha/y. There is no information provided on how the assumptions and recommendations of the erosion assessments have been implemented to ensure erosion criteria can be met and the proposed design is erosionally stable. The department's advice is that slope gradient limits would resolve this as those steep sections would have to be reshaped to meet the limit. If that results in	Appendix M will be implemented to ensure erosion will be appropriately managed and the final landform is erosionally stable. (c) Provide a revised schedule with landform geometry limits (gradient, length) included as criteria in milestone RM5 that are informed by and consistent with the findings and recommendations of the various erosion assessments and which are consistent with the landform design. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be considered.

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		modifications to the landform design, an updated design will be required to demonstrate that the landform is erosionally stable.	
16.	Section 6.9.1 - Twelve Mile Creek diversion	Section 6.9.1 of the Rehabilitation Planning Part identifies a number of concerns relating to the stability of Twelve Mile Creek diversion. The Rehabilitation Planning Part has noted that there are currently some locations where the ground vegetation cover is sparse and minor erosion gullies have formed from lateral inflow to the creek; upstream of the Haul Road crossing, erosion from rehabilitation of the surrounding landform has resulted in a large side inflow gully forming, adjacent to the former DOM2 Levee which has progressed since 2022; and that erosion has produced a large amount of sediment which continues to be deposited within the channel and downstream. The Rehabilitation Planning Part has stated that the main channel banks have been historically subjected to erosion and steepening, with evidence of historical cattle tracks down the steep sections of the embankments. Riparian areas along Twelve Mile Creek, north and south of the diversion are proposed to have a grazing PMLU, which section 6.9.1 indicates is a risk to ongoing stability. As only a narrow riparian margin (less than 20 m wide) has been retained along much of Twelve Mile Creek 's bank, rehabilitation of the riparian values of the watercourse are recommended to extend and enhance native riparian vegetation, ideally at least 100m either side. The limitation of grazing to the diversion channel and lack of major flow events are cited as aiding in stability of the diversion; however, the department considers that the establishment of self-sustaining vegetation will be critical for the long-term stability of the diversion. Given the stability risks identified in Section 6.9.1 and the proposed PMLU surrounding this channel area is grazing, it is unclear how these risks to the stability of the diversion will be addressed long-term.	(a) Provide further information on how long-term erosional stability will be managed in this diversion inclusive of potential impacts during construction and establishment. (b) Provide further information on how consideration of these identified risks will be managed noting the extent and proximity of the proposed PMLU of grazing in relation to the native vegetation (riparian) PMLU. (c) Specify how habitat connectivity will be restored along the watercourse to ensure connectivity between patches of remnant vegetation and the diversion and extend the riparian zone on either side of the watercourse.

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		Furthermore, the department notes that condition F4(i) of the EA requires consideration of planned native vegetation rehabilitation areas and corridors. This consideration would assist in determining how habitat connectivity along the Twelve Mile Creek watercourse will be enhanced to provide for important habitat values.	
17.	Section 6.7 Voids Section 3.6.3 Voids of PRCP guideline Appendix I - Engeny Final Landform Flood Assessment Appendix P - Engeny Yarrabee Mine PRCP Final Void Hydrology Assessment (2025) Appendix O – Geotechnical Stability assessment	As required by section 3.6.3 of the PRCP guideline for mine sites with residual voids, the rehabilitation planning part must include a void closure plan. Upon review of Section 6.7 of the Rehabilitation Planning Part, no information has been presented on the proposed length and width of the final voids As per Section 3.6.3 of the PRCP guideline, the mechanisms for achieving acceptable geotechnical stability must be detailed in the rehabilitation planning part. To account for the potential effects of long-term erosion, weathering, and significant hydrological events, adjustments to the current active pit surface slope angles of the high wall are recommended. Section 6.7.3.1 'Current Geotechnical Environment' indicates that there is highly weathered rock that could lead to instability and multiple erosion instances have been identified due to surface water runoff down the slopes related to Tertiary/Quaternary sediments at the surface and shallow depths. As a remedial measure for localised instability, void filling can be incorporated as part of an effective ground control management plan, with partial void filling strategies considered. Additionally, reshaping the pit walls and implementing earthworks, such as buttressing or benching, may be necessary. In line with the PRCP guideline, these actions are to be supervised, verified and audited by an appropriately qualified person such as an experienced geotechnical engineer.	(a) Provide a revised rehabilitation planning part that includes all void closure plan requirements as outlined in Section 3.6.3 Voids of PRCP guideline. (b) Provide management milestones in the PRCP Schedule which reflect any revised mechanisms to ensuring best practice management for the NUMAs. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be considered

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18.	Section 6.2.8 Residual Void Water Balance Section 6.9.2 Contaminants that pose a risk to environmental values	As per Section 3.6.3 of the PRCP guideline, predicted water quality of the voids in the long-term is required. It is noted that a key assumption of the Appendix P of the Yarrabee Mine PRCP Final Void Hydrology Assessment (Engeny 2025) is that the void water bodies are fully mixed (i.e. no stratification), with the model inputs not accounting for the potential stratification of water quality within void. As per section 3.6.3 of the PRCP guideline, the void closure plan elements of the Rehabilitation Planning Part must include the predicted water quality in the long-term including permanent stratification. Section 6.9.2 of the Rehabilitation Planning Part indicates that DOM6, DOM2S and CE-North act as local sources with the remaining voids expected to act as strong groundwater sinks capturing seepage from spoil emplacements or water seeping from the source voids. Any seepage will be drawn to the final voids. As such, the water quality of these voids needs to be considered. As per Section 3.6.3 Voids of the PRCP guideline, a water balance study is required to understand the potential interaction of water in the voids and flooding. Section 6.2.8 of the Rehabilitation Planning Part states that final void equilibrium water body levels have not been conducted, and the surface water and groundwater modelling has been used a minimum and maximum water levels.	Provide an updated monitoring program that specifies frequency of water quality monitoring at sufficient intervals to be able to gather data to monitor/demonstrate the condition of the void pit water and to assist in future refinements of the PRC Plan and void water quality modelling to demonstrate that the NUMAs are not causing environmental harm. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be considered Note – refer to Attachment 2 - potential condition PRCP10 which could substitute as a response to this request.
19.	Section 6.7.4.9 and 6.9 - Water Management	The PRC Plan must provide a comprehensive description of the contaminants that pose a risk to environmental values of the receiving environment, as per the subheading 'water management' in section 3.6.1 of the PRCP guideline. Aquatic ecosystems are a scheduled environmental value for the receiving environment; therefore, this must be considered. The water quality	(a) A description of potential CoCs associated with the activity including that expected to be moving from and to the site's NUMAs and residual voids.

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	Section 3.6.1 Water management of PRCP guideline Section 3.8 of the PRCP guideline Section 8.4.2 Mine Void Monitoring	criteria should be based on Water Quality Objectives (WQOs), aquatic ecosystem guidelines and background data for the receiving environment. The Rehabilitation Planning Part has not identified the specific Contaminant of Concern (CoC) associated with the activity, with Section 6.9.2 of the Rehabilitation Planning Part providing a generalised summary of broad potential contaminants only. CoC identification should be based on site-specific information, including mining processes (e.g., dams and seepage data), industrial chemical inventories and waste characterisation. This information must be clearly presented in the PRC Plan to demonstrate that the proposed rehabilitation methodologies will ensure the land achieves a non-polluting condition. This is critical for refining the list of CoC that may require surface water and groundwater monitoring and limits as part of the PRCP Schedule. Statistically robust data sets for the waste characterisation and site dams, seepage and void water should then be compared against the relevant water quality objective (WQOs) and water quality guidelines (WQGs) of all the identified environmental values, and where possible, to local surface water and groundwater baseline conditions. In accordance with, the Rehabilitation Planning Part must include a schedule of monitoring, reporting and review for each milestone. Upon review of Section 8.4.2 of the Rehabilitation Planning Part, it does not include a program for monitoring of the void water quality, which should be included in this section. The results from void water quality monitoring will be required to demonstrate that the proposed NUMA is not causing environmental harm in order to satisfy the requirements of the management milestones in the PRCP Schedule. A list of water quality characteristics (based on CoCs) has not been included in the Rehabilitation Planning Part.	(b) Provide comprehensive raw water quality data, including interpreted data, collected from dams, seepage, mine-affected water programs, groundwater and surface waters. Use the attached departmental templates. (c) Clearly outline the methodology used to identify, evaluate and refine the potential CoC, in accordance with the PRCP guideline requirements. Consider as a minimum, Electrical Conductivity, TDS, pH, sulphate, dissolved: aluminium, antimony, arsenic, barium, cobalt, copper, chromium, molybdenum, manganese, nickel, selenium, iron, zinc; fluoride, nitrate, total petroleum hydrocarbons, PFAS etc. (d) Present a statistically robust comparison of site-specific water quality data from dams, mine-affected water, seepage, void water quality against the relevant WQO, WQGs, baseline groundwater quality for the

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		Appendix P has also considered salinity as a contaminant but there are other possible Contaminants of Concern (CoCs)/parameters that should be included. As such, it is unclear how the water in the voids will be managed and the risk to environmental values is unknown. Section 5 of the Rehabilitation Planning Part, Table 4-3 provide Chloride concentration in each groundwater bore, used to assist in determining recharge estimates. However, there is not a full description of water quality for each monitoring bore. In order to understand the full range of water quality in all monitoring bores, water quality data must be provided for each bore. In this section of the rehabilitation planning part, Table 5-2 provides useful information on water quality in the newly constructed monitoring bores. However, for the Rangal Coal Measures, the data is presented as percentiles of the total amount of data collected from all bores combined. There is no specific information for each bore drilled.	environmental values identified in the rehabilitation planning part. Include a broad suite of contaminants in the appraisal. (e) Propose a monitoring program Note – refer to Attachment 2 which provides an example of the types of SMART criteria which the water quality criteria will inform.
20.	Section 6.8 Tailings Storage Facilities (TSF) Appendix Q - As Constructed Report for Tailings Storage Dam Appendix R - Conceptual Cover System Design Section 3.6.2 PRCP guideline	Section 3.6.2 of the PRCP guideline specifies elements that must be included in the design for a TSF. Insufficient information is provided in Appendix R to the Rehabilitation Planning Part as follows: • Specific gravity testing not provided • Peak and remoulded shear strengths not provided • Consolidation testing is not discussed • Detailed design for construction has not been undertaken • No details on leak detection systems • Limited information on cellular design • No details on seepage collection systems.	As required by the PRCP guideline - Section 3.6.2 Tailings storage facility, provide this information in the rehabilitation planning part of the PRCP.

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21.	Section 6.8 Tailings Storage Facilities (TSF) Appendix R - Conceptual Cover System Design Section 3.6.1 and 3.6.2 PRCP guideline	As per section 3.6.1 the PRCP guideline, the Rehabilitation Planning Part must describe availability of suitable cover materials (both quality and quantity). The suitability of spoil material (mudstone) has not been demonstrated in Appendix R of the Rehabilitation Planning Part given the spoil's physical characteristics (classed as sandy clay loam to sandy loam to loam texture) and chemistry (saline and sodic with little organic carbon (1 – 1.5% in topsoil)). The stability of the soil aggregates under rainfall impact and/or grazing conditions (Table 16: Cover System Objectives of Appendix R) is unknown. This is particularly important under conditions where excess salinity has been leached from the soil with a concomitant reduction in porewater ionic strength. Conceptual modelling does not provide for changes in soil physico-chemistry on aggregate stability hence long-term infiltration and runoff from the proposed cover design is unclear. This is identified as a limitation on model predictions as uncalibrated laboratory testing can have an error margin up to an order of magnitude as stated in Section 6.1.2 in Appendix R. As this important for the determination of suitability of the cover system, further information is required on changes in soil physio-chemistry on aggregate stability. Section 6.1.6.1 of Appendix R presents soil water characteristic curves for fine and coarse spoil (as illustrated in Chart 4: Adopted SWCC's). In this case, fine spoil retains less water than coarse spoil at high suctions (e.g. >1000 kPa). It is unclear as to the reason for this, as fine textured materials may be expected to retain more water due to matric forces. The water balance modelling addresses water movement within the conceptual covers only and net percolation into the underlying tailings is predicted to be negligible. However, further information must be provided to justify the results including specific testing such as field trials or site-specific soil properties for	(a) Provide further information about the suitability of spoil material (mudstone) as per section 3.6.1 of the PRCP guideline. (b) Provided updated conceptual modelling that considers the changes in soil physico-chemistry on aggregate stability as recognised as a limitation in section 6.1.2 of Appendix R. (c) Provide further information in relation to the soil water characteristics curves to indicate why fine spoil is anticipated to retain less water. (d) Undertake more specific testing such as field trials or site-specific soil properties for materials to be used in the cover to ensure the materials proposed to use in the cover are appropriate. (e) Conduct further modelling that includes increasing salinity via capillary rise and its potential impact on establishing a vegetation cover along with calibration of the model with field

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		materials to be used in the cover (noting that the model has not been calibrated against field data as per the limitations in Section 6.1.2 of Appendix R). As tailings is reported as saline, and spoil is saline to highly saline, the modelling in Appendix R should consider increasing salinity via capillary rise and its potential impact on establishing a vegetation cover. As per section 3.6.2 of the PRCP guideline, the tailings characterisation must determine the parameters that may influence the rehabilitation or management strategies and the capacity of the site to support revegetation. This work is required to demonstrate the suitability of the spoil and topsoil as cover materials and any associated impacts of salinity from the tailings, spoil and/or topsoil. The cover designs proposed for the TSF are unproven in terms of performance and more specifically in terms of salt rise and impact on future vegetation cover. This aspect of the cover design and environmental risk requires verification to confirm that salt rise is not a short- or long-term impact on final landform stability and cover performance.	data as noted by section 6.1.2 of Appendix R. (f) Provide confirmation that salt rise is not a short- or long-term impact on final landform stability and cover performance. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be considered Note – refer to Attachment 2 PRCP13(d)-(e) which could substitute for a response to this request.
22.	Section 6.9.1 - Twelve Mile Creek diversion (Conceptual Design) Appendix S – Engeny Twelve Mile Creek Diversion Concept design	The Rehabilitation Planning Part indicates that the A-Pit Twelve Mile Creek levee is a permanent engineered levee and, together with the diversion channel and A-Pit and DS1 forms a hydraulic system. The engineered structure between A-Pit and DS1(Twelve Mile Creek Diversion), as shown in Appendix S, Figure 5.1, is described as a diversion. In practice, the system comprises two components: a diversion channel and a levee, the main function of which is to exclude floodwaters from A-Pit. The Diversion Concept Design Appendix S indicates that the diversion is authorised under the Water Act 2000, via Water Licence 45367F. In the EA EPML00844613, it states in:	(a) Provide further modelling that demonstrates the final landform, including the levee, demonstrates hydraulic and geotechnical stability for design events up to the 0.1% AEP and PMF, or as determined through the CCA under the EA. (b) Provide further information on the engineered structure between A-Pit and DS1(Twelve Mile Creek

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		- Attachment 1 (p. 84, 87) states that “The A-Pit Twelve Mile Creek levee will be reshaped and rehabilitated to create a permanent stable landform feature which will serve to protect the A-Pit residual void from flood inundation up to and including a 1:1000 AEP flood event.” The final landform, including the levee, must demonstrate hydraulic and geotechnical stability for design events up to the 0.1 % AEP and PMF, or as determined through the Consequence category assessment under the Yarrabee EA for the relevant structure. The current concept design Appendix S of the Rehabilitation Planning Part remains preliminary and does not demonstrate compliance with OSW/2019/4599 – <i>Watercourse Diversion Guideline</i>. Specifically: - Permanent diversions must be stable, self-sustaining, and incorporate geomorphic and vegetative features typical of the regional stream type (OSW/2019/4599 s 4.5, Outcome 5). - Hydraulic performance must demonstrate resilience to design flood events (up to the event corresponding to the CCA consequence level), with proven energy-dissipation and armouring design. - Modelled flow velocities exceed 3 m/s, indicating high erosive potential incompatible with long-term stability unless mitigated through engineered protection (e.g. riprap, drop structures, or reinforced armouring). The concept report therefore does not demonstrate how high-energy flows under the 0.1 % AEP or PMF events will be managed to prevent progressive scour that could compromise the levee, A-Pit, or WRD DS1.	Diversion) structure as to whether it will retain the characteristics of a permanent levee providing hydraulic protection. (c) Provide further information that A-Pit levee and hydraulically connected structures including A-Pit and DS1 have been designed to satisfy all prescribed hydraulic and geotechnical performance objectives and demonstrate how high-energy flows under the 0.1% AEP or PMF events will be managed to prevent progressive scour that could compromise the levee, A-Pit, or WRD DS1 (d) Provide further information on how the flooding risk will be mitigated during construction and during rehabilitation. Note – refer to Attachment 2 which provides an example of the types of PRCP conditions and SMART criteria which should be considered.

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		Additionally, as stated in Item 14, no climate change impact has been incorporated in flood estimation. In addition, the hydrologic and hydraulic models are not calibrated or validated against local data. The Twelve Mile Creek catchment has no nearby stream gauge, and peak flows were estimated using the RORB model (design-event mode) rather than continuous simulation or calibration to observed rainfall–runoff events. Considering the absence of calibration, validation, and climate-change adjustments, there is material uncertainty in the reliability of the flood model results. Consequently, actual flood magnitudes and frequencies may be higher than those presented in the reports, resulting in an increased flood risk.	
23.	Section 6.12.3 Species Selection and Seeding Rates Section 6.6.2.3 Land Capability and Suitability □ Appendix N. Soil Material Assessment – GT Environmental Pty Ltd	Section 6.12.3 of the Rehabilitation Planning Part states that the rehabilitation objective of the grazing PMLU is a minimum land suitability Class 4. However, following review of Appendix N, several areas within the tenure are identified as having a Class 3 land suitability for cattle grazing. As noted by GT Environmental (2024, p.62), <i>‘in some circumstances it may be possible to upgrade Class 4 land to a more suitable class with the implementation of considerable soil improvement measures’</i>. While the proposed PRCP Schedule and current EA note a Class 4 land suitability outcome, a Class 4 outcome is identified by the Queensland Mine Rehabilitation Commissioner in the <i>Rehabilitated mined land suitability for beef cattle grazing in the Bowen Basin: Technical paper</i> (QMRC 2023) as 'Unsuitable' with limitations so severe that the sustainable use of the land in the proposed manner is precluded. Therefore, a Class 3 outcome should be achieved to the extent possible. If it is not feasible for Class 3 to be achieved, the limiting factors (with reference to the key parameters described in 'Rehabilitated mined land suitability for beef cattle grazing in the Bowen Basin: Technical paper' (QMRC 2023) or Guidelines	(a) If it is not feasible for Class 3 to be achieved, describe the limiting factors that cannot be met along with details on the challenges to overcome the limitation. (b) Describe what actions could be undertaken to address these limiting factors, and why they are not achievable. If a Class that is suitable for grazing is not achievable, consider if other PMLUs may be more suitable for areas where limiting factors cannot be overcome. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be

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		for agricultural land evaluation in Queensland (DSITI & DNRM, 2015)) must be described along with details on the challenges to overcome the limitation.	included in the PRCP Schedule regarding land suitability for grazing outcomes.
24.	Section 6.12 Revegetation Species selection and seeding rates - Grazing	Section 6.12.3 states that buffel grass would be avoided during seeding “as far as practical”. As buffel grass is an environmental weed in Queensland, and its nature as an invasive species means it typically outcompetes native species. Its use in revegetation is not supported by the department. However, it is recognised that buffel will likely naturally recruit and be present at later milestones of the PRCP schedule Table 6-62: Grazing species mix proposes to include only one tree species. The department considers that additional native shade tree and shrub species should be incorporated into the seed mix for the grazing PMLU to provide for shade for cattle and structure for native fauna to enhance the land outcomes.	(a) Remove buffel grass from consideration in the PRC Plan (we note that buffel is not in the PRCP Schedule species list). (b) Add additional native shade tree species to the grazing species mix (selected from locally occurring regional ecosystems (REs)).
25.	Section 6.12 Revegetation Species selection and seeding rates – Native Vegetation Appendix C - E2M Terrestrial Ecological Assessment report	As noted in section 6.12.3 of the Rehabilitation Planning Part, several REs have been identified as having species with the potential to establish in the proposed native vegetation PMLUs. Therefore, the department recommends a hybrid ecosystem instead of a novel ecosystem, comprised of species identified in RE 11.4.2/11.4.8/11.4.9 for the Native Vegetation PMLU. The species list should incorporate threatened flora (Solanums) as identified within the site in Appendix C - E2M Terrestrial Ecological Assessment report. The Native Vegetation (Riparian) PMLU must be comprised of species typical of RE11.3.3 or other riparian REs for the watercourses. Table 6-63: Native vegetation species list contains species, such as couch, which are considered environmental weeds in Queensland. They are not appropriate in a native vegetation species mix.	(a) Compile a hybrid native vegetation species list utilising suitable species from the REs listed. Indicate where threatened flora (Solanums) is appropriate to include. (b) Remove all exotic species from the native vegetation species list (except a sterile cover crop if desired). (c) Provide milestone criteria for Native Vegetation PMLUs which

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		In addition, Table 6-65: Milestones and Criteria and the proposed PRCP Schedule includes the following rehabilitation milestones and criteria which require further clarification and information to enable the department to consider if these are appropriate: • RM4 – Vegetation removal – is proposed as a milestone. This is not a matter for the PRCP schedule as is an operational matter and relevant to the environmental authority. The RM is proposed to be removed in the attached draft schedule and the subsequent milestones proposed to be renumbered. • RM 10 (4) - Surface Conditions – Native Vegetation – This criterion should incorporate native tree, shrub and grass species for diversity. • RM 10 (5) – this criterion indicates that ‘target species’ will be established. No information is provided regarding the specific species that will be targeted. • RM 11 and RM13 – these milestones should also include species diversity and cover metrics as at RM 10 (4) to align the criteria with SMART principles. In contemporary PRCP Schedules, the department has adopted milestone criteria which reflect the requirement to complete a BioCondition assessment in line the BioCondition Manual (Eyre et al., 2015) for PMLUs associated with regional ecosystems. As recognised by OQMRC in technical paper titled <i>Evaluating methods for assessing native ecosystem mine rehabilitation success</i> (Spain et al 2025)¹, the BioCondition assessment methodology is a quantitative	reflect the BioCondition assessment framework. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule, including BioCondition assessments.

¹ Spain CS, Nuske S and Gagen EJ (2025) Evaluating methods for assessing native ecosystem mine rehabilitation success: Technical Paper, Office of the Queensland Mine Rehabilitation Commissioner, Queensland Government, Brisbane. Accessible via https://www.qmrc.qld.gov.au/__data/assets/pdf_file/0025/307636/evaluating-methods-for-assessing-native-ecosystem-mine-rehabilitation-success.pdf

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		condition assessment framework for Queensland that measures how well a terrestrial ecosystem is functioning for biodiversity values. The department considers milestone criteria which reflect the assessment of native vegetation PMLUs in line with the BioCondition framework align with the SMART principles and will enable the repeatable collection of relevant statistically valid data. To assist Yarrabee in developing such criteria, the department has provided Attachment 3 to this notice which gives examples of how the BioCondition assessment framework should be reflected in the PRCP Schedule.	
26.	Section 6.12 Revegetation Appendix C - E2M Terrestrial Ecological Assessment report	Section 7.3.2 of the Appendix C recommends numerous mitigation measures for proposed impacts on fauna habitat values, including the recommendation to ' <i>Select habitat features (e.g. hollow bearing trees, woody debris, logs and rocks) should be salvaged for re-use in rehabilitation areas or relocated into adjacent areas of habitat to be retained</i> '. This requirement has not been reflected in the Rehabilitation Planning Part or proposed milestone criteria.	Incorporate the salvage, storage and use of logs as fauna habitat in revegetation (as recommended in the Appendix C) in both the Rehabilitation Planning Part and rehabilitation milestone criteria.
27.	Section 7 - Risk assessment Section 3.7 of PRCP Guideline	In accordance with section 126C(1)(f) of the EP Act, the Rehabilitation Planning Part must identify the risks of stable condition for land described as a PMLU not being achieved, and how the applicant intends to manage or minimise the risks. Section 3.7 of the PRCP Guideline states that the risk evaluation should assist in making decisions about what risks need to be managed and prioritised and in comparing the level of risk, what risk treatments are required. The risk treatments must consider a number of factors including regulatory obligations and protection of the surrounding environment. The PRCP guideline states the risk treatment step must detail the reasons for selecting the treatment option and justifications for selection.	Provide further justification for the risk ratings and explain how the residual risks have been reduced to as low as reasonably practicable in line with standard risk assessment methodologies and ensuring the regulatory obligations and protection to the surrounding environment are appropriately addressed.

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		It is not clear in Appendix T of the Rehabilitation Planning Part the reasons for the how the initial risk was determined, and the proposed controls to reduce the risk of a number of activities. There are a number identified risks such as 'insufficient technical and operational resources to implement the rehabilitation plan'; 'Inadequate growth medium'; and 'Slope angles too steep or rough to support PMLU e.g. grazing' where the justification for the identification or initial risk and/or residual risk is unclear. There are also a number of residual risks identified as 'high' and/or 'moderate' noting that the moderate consequence as determined in Table 7-1 of the Rehabilitation Planning Part is defined as a risk that could result in 'serious environmental harm' which would not align with the regulatory obligations and appropriate management of the risk to the environment.	
28.	Section 8.1 Milestone Monitoring Section 3.8 of PRCP guideline - Rehabilitation monitoring Section 8.2 Monitoring methodology	'Table 8-2: Native vegetation success criteria' states that, for Native Vegetation to be successful, the relevant success criteria are that the vegetation is dominated by local pioneer species. However, the department considers that a self-sustaining native vegetation ecosystem should be characterised by mature-phase species established over time. This table also states that >8 species/ha will be established across areas. No information is provided regarding whether this will be limited to native species only. In accordance with Section 3.8 of the PRCP guideline, the monitoring program for the PRC Plan must enable the repeatable collection of relevant statistically valid data. Section 8.1.4, Rehabilitation Monitoring sites states that monitoring sites will be placed at random at a density of one site per 40 ha. However, upon review of the survey methodology outlined in the <i>Yancoal: Yarrabee Coal Mine – Rehabilitation Monitoring 2023</i> (Ausecology 2023), it uses a sample size of	(a) Provide an explanation for the success criteria being vegetation dominated by pioneer species and clarify how Table 8-2 interacts with the milestone criteria in the PRCP schedule. (b) Clarify if the success criteria will be > 8 native species. (c) Update the Rehabilitation Planning Part to address section 3.8 of the PRCP guideline to ensure that the monitoring program is consistent to enables a repeatable collection of relevant statistically valid data

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	Section 3.8 of PRCP guideline - Rehabilitation monitoring	one site per 10 ha. The Rehabilitation Planning Part must provide for consistency in the monitoring program to ensure the repeatable collection of relevant statistically valid data. Section 8.1.5 mentions reference sites, but the location and details of these are not specified. Review of Section 8.7 of Appendix B – Rehabilitation Management Plan further indicates that <i>‘the YCC Rehabilitation Monitoring Manual (YCC-ENV-PRO-211-005) provides further detail on the vegetation reference sites’</i>. However, the monitoring manual cited does not appear to have been provided as an attachment. As per section 3.8 of the PRCP guideline, the monitoring program must provide for regular analysis of site data including multi-year comparison trends and bench-marking against analogue/reference sites. In addition, sub-heading ‘vegetation’, section 3.6.1 of the PRCP Guideline requires the Rehabilitation Planning Part to include evidence and justification for any analogue sites of the monitoring plan. Therefore, the location of reference sites must be provided to enable an understanding of the locations that will be used for collection of the required data. In addition, upon review of the Section 8 Monitoring and Maintenance Methodology of the Rehabilitation Planning Part, the department was unable to identify how the following requirements of Section 3.8 of the PRCP guideline have been addressed in the monitoring program: • monitoring using appropriate quality assurance and data management processes and systems • contingency strategies if monitoring data indicates milestone criteria are not being met. In the Rehabilitation Planning Part in Table 8-6, is the Overall Monitoring Site Scoring system to determine rehabilitation success/progress. It is unclear now	and is comparable to monitoring conducted. In addition, ensure that all matters at section 3.8 of the PRCP guideline are addressed, including the relevant quality assurance and data management processes / systems, and contingency strategies. (d) Provide detailed information on the reference sites including their locations to satisfy the requirements of section 3.6.1 and 3.8 of the PRCP guideline. (e) Provide further details including the reference materials/citations and methodology used to inform how rehabilitation scores are generated. Note – Response may not be required if BioCondition-based monitoring and criteria are proposed for relevant RAs/PMLUs.

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		the criteria are measured and how the rehabilitation score range (%) is determined.	
29.	Section 3.6 Rehabilitation and Management methodology of PRCP guideline Section 8.2.3 Erosion Appendix M- Rehabilitation Landform Design Table 8-5 Erosion Rating System	The Rehabilitation Landform Design (Landloch 2025) report (Appendix M of the Rehabilitation Planning Part) indicates that vegetation establishment will be necessary to ensure erosion can be controlled. There is limited information on the following to address the PRCP guideline requirements to ensure appropriate rehabilitation milestone criteria can be achieved including: • How revegetation will occur in stages to ensure ground cover achieves >40% as soon as practicable in line with the model assumptions used by Landloch (2025). • a QA/QC provided in the modelling of rehabilitation success as per the requirements of section 3.8 of the PRCP guideline. • whether landform is water retaining or water shedding, as per the requirements of sub-heading 'landform design', section 3.6.1 of the PRCP guideline. • the waste placement strategy intended, as per the requirements of sub-heading 'landform design', section 3.6.1 of the PRCP guideline. In the Rehabilitation Planning Part in Section 8.2.3, Table 8-5 includes a erosion rating system that will be used in rehabilitation monitoring. The department considers that an erosion classification framework in line with the methods described in the 4th Edition of the Australian Soil and Land Survey Field Handbook is relevant to contemporary PRCP schedules to enable measurement of rehabilitation success in relation to erosion (refer to the draft criteria outlined in Attachment A). Accordingly, the Rehabilitation Planning Part must address how the erosion classification framework will be considered.	(a) Provide further information and a revised Rehabilitation Planning Part which addresses the matters raised to inform the PRCP schedule to demonstrated achievement of a stable final landform. (b) Provide further information on how the erosion classification framework will be considered to measure rehabilitation success. Note – please refer to Attachment X (Erosions classification framework) in Attachment 2 for the department's preferred approach to erosions standards.

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30.	Appendix M - Rehabilitation Landform Design	Section 5.4 of the Appendix M (Landlock 2025) discusses the provision of a landform design digital elevation model (DEM) by Yarrabee for use in the land evolution model (LEM) the subject of Appendix M. The EA amendment applied for on 22 August 2025, post dated this appendix and resulted in a variation to the slopes of the final landform as per the amended Yarrabee EA EPML00844613, issued on 19 September 2025. It is not clear from Appendix M nor the Rehabilitation Planning Part as to whether the final landform, now approved in the EA, was considered in the DEM for Appendix M or any other relevant appendices. It is also unclear whether the slopes varied under the EA amendment resulted in significantly different variations to the expected stability of the final landform.	(a) Provide confirmation as to whether the amendments made to the EA were considered in the DEM adopted for Appendix M. (b) Confirm whether the amended final landform in the EA, effective 19 September 2025, will affect the outcomes of the Appendix M or any other report or statement about landform stability. (c) Provide updated erosion modelling and landform design, where required.
31.	Appendix M - Rehabilitation Landform Design	Section 8 of Appendix M specifies a number of requirements and outcomes from the assessments discussed in the appendix to ensure the achievement of the target erosion rates and stability for the final landform. It is not clear from the PRCP schedule how these requirements and outcomes are being implemented, noting that a number of the schedule criteria refer back to the EA requirements. Milestone criteria must stand alone from the environmental authority and must be consistent with the objectives and requirements set out in the Rehabilitation Planning Part and associated appendices.	Ensure that there are sufficient SMART criteria in the proposed PRCP schedule to ensure achievement of the requirements discussed in Appendix M to ensure a stable final landform. Reference to EA conditions must not be included in the PRCP Schedule.
32.	PRCP schedule – RM5 Appendix M - Rehabilitation Landform Design	In accordance with Section 8.2 in Appendix M, the rehabilitation surface must contain a soil-waste mixture that achieves a mixing ratio of between 1:1 and 1:2 (soil:waste). In addition, Appendix M states that the final mixture must contain ~30-40% rock and ~60-70% fines. Appendix M indicates that a soil:waste mix in	(a) Review and provide a proposed PRCP schedule that aligns with objectives determined in Appendix M (Rehabilitation Landform Design).

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	Section 6.5.8– Final landform stability	this range is required to ensure the achievement of the required stability for slopes up to 30%. However, RM5 of the proposed PRCP schedule proposes the requirement for rock mulch without specification of the rock mulch mixture in alignment with Appendix M. Section 6.5.8 of Rehabilitation Planning Part states that the results of the SIBERIA modelling indicate that the Yarrabee Mine final landform is predicted to be erosionally stable in the long-term, provided that a suitable soil-waste mixture is achieved, and suitable levels of groundcover are achieved. To achieve stability, a soil-waste mixing ratio of between 1:1 and 1:2 (soil:waste) and a groundcover level of >40% is required. This is inconsistent with the outcomes of Appendix M.	(b) Update the Rehabilitation Planning Part to reflect the determined soil:waste mixture as per Appendix M and that achieves the rehabilitation milestones.
33.	Appendix N - Soil and Land suitability Appendix K - Landform Design and Stabilisation: Yarrabee Coal Mine □	Section 5 of Appendix N of the Rehabilitation Planning Part includes limited discussion on application and suitability of soils for specific rehabilitation areas and target PMLU. While the information adequately describes the various soil types onsite, Section 5.1 Soil Profile Classes Summary should be expanded to provide a more focussed description of soil types such as ranking from best-suited to least suited. This could be achieved by revising Table 5-1 Land summary of SPCs to rank in order of preference for use, particularly as the topsoil thickness is predominantly in the 0.1 mbgl depth increment. This table could also include soil types which also exhibit subsoil quality suitable for rehabilitation. By re-ordering the soil type suitability, the department will have a better appreciation for soil quality and volumes suitable for rehabilitation, and if subsoil from a specific soil type can also be used. This table could also be extended to include the PMLU most suitable to the soil type.	Provide further information regarding: (a) ranking the best-suited to least suitable soil types and the relationship between the different soil types and their application in relation to the final landform slope gradients and the proposed PMLU. (b) the topsoil proposed to be used in rehabilitation. (c) the relationship between soils and vegetation ecosystems for the PMLU and rehabilitation methodology.

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		Sub-heading 'Soil and capping material assessment', Section 3.6.1 of the PRCP guideline also requires the Rehabilitation Planning Part to include information on the relationship between soils and vegetation ecosystems for the PMLU and rehabilitation methodology, which has not been described. It is also unclear how the suitability of soil types has been considered in relation to the various slope gradients proposed.	
PRCP Schedule			
34.	General - PRCP Schedule	The purpose of the PRCP schedule is to be the relevant statutory approval for the progressive rehabilitation of land at Yarrabee upon approval. Accordingly, pursuant to section 756 of the EP Act, upon approval of the PRCP Schedule, conditions relating to rehabilitation will be removed from the EA to remove inconsistency subsequent to the issue of a decision on the PRCP schedule, where approved. Reports, plans and requirements like those specified in Yarrabee's EA (e.g. condition F20) must now be incorporated into the Rehabilitation Planning Part, and subsequently into the PRCP schedule, where relevant to the PRCP guideline requirements or required for the rehabilitation of the land at Yarrabee.	Update the PRCP Schedule to exclude all references to the EA conditions and ensure the requirements of the rehabilitation conditions is reflected in the content of the Rehabilitation Planning Part. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule.
35.	PRCP Schedule – Final Site Design and Reference Map	The Rehabilitation Planning Part refers to Figure 6-1 as containing the final site design for the PRC Plan. Section 4.1 of the PRCP Guideline requires that the final site design must include the floodplain extent. The department notes that the DoE (2023) floodplain overlay has been used to demarcate the floodplain extent. However, the floodplain extent should be sourced from the floodplain modeling prepared for the site and must reflect the 0.1% AEP extent. In addition, Figure 2-13 Rehabilitation and Improvement Areas of the Rehabilitation Planning Part, which is understood to contain the information required for the Reference Map, includes Rehabilitation Areas (RAs) mapped	(a) Provide a revised final site design which include the site-specific 0.1% AEP floodplain extent. (b) Provide a revised Reference Map which aligns with the requirements of section 4.1 of the PRCP Guideline.

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		over undisturbed areas. In accordance with section 4.1 of the PRCP guideline, only areas of disturbance need to be included in the rehabilitation areas/improvement areas.	Note that the department requests copies of the Final Site Design and the Reference Map as standalone PDFs for inclusion in the draft Schedule. Ensure that the title of the figures is consistent with the terminology in the PRCP guideline and the Schedule (i.e., 'Figure 1 – Final Site Design' and 'Figure 2 – Reference map').
36.	PMLU for Waste Emplacement and TSF	A grazing PMLU for RA1 and RA6 may not be sustainable. These RAs require capping. Grazing of these RAs may compromise the capping through erosion and infiltration. Consideration of native ecosystem PMLU without deep rooted trees is recommended.	Consider whether grazing is a sustainable PMLU for RA1 and RA6. Justification around the sufficiency of the depth of the capping material and other stability measures may be suitable to justify a grazing land use on RA1 and RA6.
37.	Revegetation criteria	<u>Vegetation</u> species and seeding rates have not been included within the schedule. Species proposed in Tables 6-62 to 6-64 of the Rehabilitation Planning Part should be included in the attachments to the schedule as per the draft provided as Attachment 2 to this notice. Indian Bluegrass (<i>Bothriochloa pertusa</i>) is not recommended to be included in the grazing or native vegetation seed mixes.	Provide an updated PRCP Schedule to provide Vegetation species and seeding rates. Note – please refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule to reflect seeding rates.

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38.	PRCP schedule - RM5	RM5 proposes that a suitably qualified geotechnical engineer certifies that batters are safe and achieves a minimum factor of safety of 2. This FoS is not proposed for Native Vegetation PMLUs associated with RA2, RA9, RA10 and RA11.	Propose a FoS and a similar requirement for areas proposed to achieve a Native Vegetation PMLU. Note – refer to Attachment 2 which provides an example of the types of SMART criteria which should be included in the PRCP Schedule to reflect FoS.
39.	PRCP schedule – Surface water monitoring	Water quality monitoring is required to demonstrate the land has achieved a stable condition and is non-polluting. The purpose of the water quality criteria is to demonstrate that the land surface has achieved surface requirements and is non-polluting. The use of EA Table C2 – ‘Release limits conditions’ are not appropriate for milestone criteria as such limits are representative of controlled and monitored releases and may not be appropriate in post closure scenario and passive overland flows across the final landform. Limits must be fit for purpose (closure not operation), site-specific and based on Water Quality Objectives, guidelines and background data. For surface water, the 80th percentile of data for upstream/reference sites should be used for physico-chemical indicators and the 95th percentile for toxicants. The CoCs determined as per request item 19 must be considered in determining appropriate monitoring quality characteristics. Quality characteristics should be the same for surface water and groundwater and be based on mining process (dams and seepage) and waste characterisation.	Refer to Item 19. Provide an updated PRCP Schedule to include surface water quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring appropriate to demonstrate achievement of stable condition (there is no environmental harm being caused by anything on or in the land). Monitoring must be undertaken for both the receiving water, all water bodies and at representative locations in the landform to report to the receiving environment. Note – refer to Attachment 2 which provides an example of the types of

Item	Relevant Section (proposed PRC plan)	Matter	Information Request
		Surface Water quality criteria included does not include information on locations, frequency, quality characteristics and limits.	SMART criteria and the layout of supporting tables which should be included in the PRCP Schedule to address surface water matters.
40.	PRCP schedule – Groundwater monitoring	Groundwater quality monitoring is required to demonstrate the land has achieved a stable condition (there is no environmental harm being caused by anything on or in the land). No groundwater quality monitoring criteria have been included in the draft PRCP schedule. For groundwater, the 95 th percentile of baseline (ideally pre mining) data can be used to determine site-specific limits for all indicators. Alternatively, Water Quality Objectives or guideline values are to be proposed. See DES 2021 Groundwater Guideline - https://www.publications.qld.gov.au/dataset/groundwater-quality-assessment-guideline/resource/472cc88a-000a-4bb8-a60d-204cfe7e0238 .	Provide an updated PRCP Schedule to include groundwater quality criteria including monitoring locations, quality characteristics, limits and frequency of monitoring appropriate to demonstrate achievement of stable condition (there is no environmental harm being caused by anything on or in the land). Note – refer to Attachment 2 which provides an example of the types of SMART criteria and the layout of supporting tables which should be included in the PRCP Schedule to address surface water matters.
41.	PRCP Schedule – RAs	As raised at item 35, in accordance with section 4.1 of the PRCP guideline, only areas of disturbance require rehabilitation areas/improvement areas to be specified. Accordingly, RA13 is not required where this relates to undisturbed areas. The exception may be exploration or minor ancillary infrastructure. The 'relevant activities' in the tables for RA10, RA11 and RA12 must be aligned with the relevant mine-related disturbance activity (e.g., pit, infrastructure, etc) rather than having an activity of 'existing rehabilitation to be re-disturbed'. It is	Provide an updated PRCP schedule, including changes in the Rehabilitation Planning Part and Reference Map, to reflect these recommendations. Consider condition PRCP9 in the Attachment 2 regarding exploration activities.

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		recommended that these rehabilitation areas be merged with the other rehabilitation areas relevant to their disturbance type/domain.	
42.	PRCP Schedule – riparian vegetation criteria	A total vegetive groundcover of $\geq 30\%$ is proposed for areas of watercourse/riparian vegetation. Further information is required to support this cover percentage to ensure the stability of the riparian areas/diversion banks.	Provide further justification for the 30% vegetative groundcover criterion for areas of watercourse/riparian vegetation

ATTACHMENT 2: DETSI recommended and examples conditions and milestone criteria for draft PRCP schedule

NOTE: These are the common conditions and milestone criteria for a PRCP schedule current at the time of issuing this information request. Further specific, additional or alternative criteria may be suggested for the site following receipt of a response to the information request and may change during the decision stage depending on the requirements for this site.

ATTACHMENT 3: DETSI recommended BioCondition Modified Benchmark Framework for Item 25