

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: TEC Coal Pty Ltd
Level 2, 180 Ann Street
BRISBANE CITY QLD 4000

ATTN: Troy Cook
Email: troy.cook@stanwell.com

Our reference: EPML00709113

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 30 May 2022.

The application reference number is: EPML00709113

Land description: ML6674

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 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.

A response to the information requested must be provided by **10 February 2023** (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@des.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 176A 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/action and it was determined that no human rights are engaged by the action.

If you require more information, please contact the Coal Business Centre on the telephone number listed below.



Signature

25/07/2022

Date

Chris Wake
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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

Attachments

Attachment 1: Additional information required for proposed PRC plan.

Attachment 1: Additional information required for proposed PRC plan

Item	Relevant section (proposed PRC plan and/or PRCP Guideline)	Matter	Information Request
Rehabilitation Planning Part			
1	PRC Plan generally	The PRC Plan does not provide landscape context to the planning. To support the rehabilitation objectives across the site the PRC Plan should include some indication about how each PMLU will provide regional connectivity, especially for PMLUs which provide more complex habitat for native wildlife (e.g. Native Ecosystems, Creek Diversion, Steep Rocky Ecosystems and Plantations). For example, the progressive spatial and temporal increase in rehabilitation (for each PMLU and for each RM) and how they link to remnant native vegetation and local state significant or terrestrial/riparian corridors.	Provide further information which illustrates linkages between PMLU and remnant vegetation, non-remnant vegetation and existing plantations, as well as any State significant corridors and riparian corridors.
2	6.1.2.3 Hydraulic modelling – flood assessment	This section provides information about the flood modelling undertaken to address the requirements of section 3.6.1 of the PRCP Guideline. Figure 6.6 indicates that retention dams that are to be removed and rehabilitated after closure are included in the modelling. It is unclear if the inclusion of these structures (which will ultimately be removed) is significant in the context of modelling flood risk to the final landform. Similarly, the figures provided in the flood assessment indicate that the model boundary conditions were immediately upstream of Meandu Creek Dam. While Meandu Creek Dam is located outside the mining tenure, there appears to be potential for the dam to impact flow in Meandu Creek. Flood assessment conclusions indicate that the Meandu creek diversion will remain stable during modelled events and resultant velocities. It further states that the stability and rehabilitation of Meandu Creek diversions is being investigated by others and is not in the scope of this assessment. Comparison of the PMF to the World Catalogue of Maximum Observed Floods was undertaken to demonstrate comparative sensitivity assessment against the WBNM and TUFLOW model outputs. Working back through the formula cited using the output of $Q = 1639\text{m}^3/\text{s}$ results in a catchment area for Meandu Creek of 32.98km^2. The catchment indicated in Table 16 page 1366 shows the catchment as 36.38km^2 and	Provide updated flood modelling that reflects the final landform or provide additional information to justify the inclusion of the retention dams. Ensure modelling is provided at a scale that clearly shows the flood depth and velocities through, and adjacent to, diversions. Provide further details on how the Meandu Creek Dam impacts the model outputs and how this structure was considered in the modelling – was it assumed empty, full, partially full etc. at the beginning of simulations and confirm the spillway capacity used. Demonstrate that the Meandu Creek diversions will remain stable during and after modelled flood events by providing additional studies and investigations referenced in the rehabilitation planning part. Provide a copy of the Advisian flood assessment referenced on page 194, dot point 5.

		section 4.2.1 page 1356 indicates the catchment area for Meandu Creek is 75km² with 55km² draining to Meandu Creek Dam.	Provide a copy of the work completed (referenced on page 194 dot point 2) that demonstrates that the flow events estimated by the typical event simulation methods overestimated the actual system response in the Meandu Catchment. Given the differences in catchment referenced and that certain areas drain to voids, provide further clarification on precise catchment areas used and any sensitivity/calibration/verification assessments conducted to ensure the robustness of the models
3	6.1.6 Cover Design	Section 6.1.6.4 discusses the results from infiltration modelling, however the supporting technical document is not provided. This section indicates cover system options were modelled but it does not provide further details of the outcomes of the modelling. Options appear to have been developed based on compaction rate and vegetation cover and it appears that the option with the greatest infiltration rate (5m of NAF spoil compacted to 85%) reflects the proposed cover system. RM3 does not include criteria regarding the necessary level of compaction required to minimise infiltration or criteria that reflect the methodology stated in section 6.1.6.5. RM 7 and RM9 do not include criteria regarding maximum infiltration rates to be achieved by the cover system. Further, criteria associated with RM4 indicates that only landforms constructed after 2016 are required to be covered by a minimum of 6m of material. Section 6.1.6.4 also states that geotechnical investigations concluded that functional vegetative cover is required to minimise infiltration. However, the proposed completion criteria (RM9) for both beef cattle grazing and native ecosystem proposes a >50% groundcover including rock. Section 6.1.6.4 states that seepage will migrate towards the K2E final void which acts as a groundwater sink. It is noted that the rehabilitation planning part proposed ongoing water extraction as part of the rehabilitation methodology. It is unclear whether continual water extraction is sustainable and therefore reliance on the void being a groundwater sink to receive any potential seepage may not be sustainable.	Provide the report regarding modelling of infiltration rates achieved by cover system options referenced as Landloch 2021d. Provide further information demonstrating how the proposed cover system specifications minimise water infiltration and oxidation of PAF material. Provide RM criteria that specify additional relevant aspects of the cover system/s required to minimise infiltration (including specifications to ensure only material not capable of generating NMD, SMD or AMD is used, compaction rates/permeability rates and vegetation cover to be achieved, Provide further detailed information regarding how the codisposal of tailings and coal combustion products will be managed to prevent the oxidation of tailings.

		It is noted that the EA and the rehabilitation planning part both state that coal combustion products are to have a minimum thickness of 2m of cover material while PAF and tailings are to have a minimum thickness of 6m. Section 6.2.2.3 states that tailings material is periodically disposed of in the ash storages when the “SBC’s are down” and that the tailings can comprise 1-3% of the volume. Section 6.2.4.2 states that coal combustion products will continue to be deposited for 12 months to form a layer over the tailings prior to capping. There is no further information about the thickness of the layer or commitment to ensure a specific depth is achieved. There is a risk that tailings may be present at, or close to the surface of the K2W-N ash storage facility. As this facility is proposed to be covered with 2m of material it is unclear if the cover will prevent oxidation of the underlying material. It is also noted that both tailings and ash are proposed to be deposited in K4S which is proposed to have a 2m cover. It is unclear if the cover proposed for this facility will also prevent the infiltration and oxidation of tailings material.	
4	6.1.5 Landform Design	This section states that the outcome of the WEPP modelling indicated that erosion rates were <5t/ha/year where grazing slopes were <15%, <125m long and >70% cover was provided. Similar parameters apply for grey topsoil with slope lengths limited to 70m. Further, Siberia modelling was based on 90% groundcover for Native Ecosystem and 80% cover for grazing. However, the milestone criteria for RM4 associated with grazing and native ecosystem allows slopes up to 25%. The rehabilitation planning part does not provide information that demonstrates this gradient will achieve a stable condition regardless of groundcover rates. Further, the milestone criteria for RM9 proposes groundcover rates of >50% for slopes <18% for grazing land and >50% cover for slopes <20% for native ecosystem which does not reflect the results of the LEM. It is noted that groundcover includes rocks. It is unclear how a groundcover of >50% rock still achieves the PMLUs. It is noted that three diversions on Meandu Creek are shown in the Final Site Design. However, the rehabilitation planning part does not provide information on the construction of these structures, how they will perform after mine closure or information demonstrating they will be in a stable	Provide milestone criteria that reflect the outcomes of the landform evolution modelling or provide further information demonstrating how the landform will achieve a stable condition using alternative criteria. Provide design plans, relevant water licences and all supporting documentation (as designed, as constructed, performance criteria, monitoring frequency and criteria) for all water diversions. Provide hydraulic modelling that formed the basis of the approved designs for the diversions. Provide information comparing the anticipated final landform of the diversions with the criteria established in <i>Criteria for Functioning River Landscape Units in Mining and Post Mining Landscapes</i>. (ACARP report C20017).

		condition and not cause erosion in the remaining reaches of Meandu Creek.	
5	6.1.7 Water Management	While this section provides information about specific aspects of the site it does not describe the surface water flow and drainage system that will operate once rehabilitation has been completed. While some of this information is included in section 6.1.5 and figure 6.9, information is only provided for part of the mining lease and does not include Meandu Creek, the infrastructure area or Black Creek. While this section provides a table of contaminants of concern it does not describe how these have been determined and in some instances are vague (e.g. a contaminant of concern for Mixed Plant Rejects that are the buried in pit is described as “Metals”). The EA recognises that QW Sump is a regulated structure. Section 6.2.5.1 states that QW sump was left to capture seepage from K2W-N and that at closure this seepage will go to K4E void and from there towards K2E. However, no information is provided regarding the timing and methodology for the rehabilitation of the QW Sump. Section 6.1.7.4 provides some information regarding the Black Creek saline plume and notes that pathways are likely to be associated with natural drainage channel running north to report to Black Creek dam (that is located off lease). Section 5.2.3.4 states that the functionality of this system will be determined following completion of the Tarong Power Station’s rehabilitation and closure plan. However, in order to demonstrate the land covered by the PRCP will be non-polluting, further information is required regarding how this plume will be managed to prevent the release of contaminants outside the mining lease boundary. It is noted that RM8 criteria e) applies to the Black Creek plume, However, this criteria does not meet the SMART principles and nominates Meandu Creek as the receiving environment.	Provide further information regarding the surface water management once rehabilitation activities have been completed. Provide further information regarding the contaminants of concern for each of the waste types disposed on site and how they have been determined. Provide further information demonstrating how the contaminants of concern relate to the water quality parameters nominated in RM criteria. Provide further information regarding the location, timing and rehabilitation methods for the QW Sump. Provide justification for the proposed timing and rehabilitation methods for the QW Sump. Provide further information regarding the management and monitoring that will be undertaken to ensure that Black Creek will achieve a stable condition. Provide RM criteria regarding the Black Creek Saline plume that meet the SMART principles, includes parameters that are relevant to the plume and reflect a stable condition being achieved and maintained.
6	6.1.8 Revegetation & Appendix L	For the Native Ecosystem PMLU there is a mismatch between the methodologies presented in the PRC Plan for rehabilitation monitoring, milestone success criteria and performance reporting. A combination of BioCondition assessment and EA specific criteria are utilised in rehabilitation milestones as a measure of success. However, no success criteria relating to BioCondition are discussed or proposed. It's unclear how the BioCondition assessment contributes to determining rehabilitation success. The BioCondition attribute table and the scoring to reach the	Provide further information on the application of the BioCondition assessment, the scoring, condition classes and interpretation of the scoring in the proposed monitoring, and how it will contribute to determining rehabilitation progression and success for Native Ecosystem PMLU.

		maximum benchmark score of 60, and the categorisation of the four Condition Classes are inaccurately defined (or not at all in terms of the condition classes).	
7	6.1.8 Revegetation & Appendix L	Appendix L indicates that for the Creek Diversion PMLU monitoring against analogue sites is not required. However, methodologies like those proposed for Native Ecosystem PMLU will be utilised to assess vegetation establishment. If BioCondition assessment is being proposed a benchmark needs to be used and/or developed and further clarity provided on how BioCondition monitoring and scoring would be applied; with clear links to rehabilitation milestone criteria.	Provide further information clarifying the proposed methods for rehabilitation monitoring and how they will be applied to the Creek Diversion PMLU.
8	6.1.8.2 – Key flora species & Appendix L	Native Ecosystem PMLU - The seed selection and seed rates in Table 5.1 of Appendix L should reflect the dominant species in each RE and list for each individual species which life form it represents (i.e. T, S, G, F in BioCondition scoring framework) and which are dominant species in the analogue REs, which species do not occur in the analogue REs and which species are introduced. Creek Diversion PMLU - The seed selection and seed rates in Table 7.1 of Appendix L should reflect the dominant species in RE 12.3.3 Technical Description, and the table needs to clearly list for each individual species which life form it represents (i.e., T, S, G, F) and which are dominant species in RE 12.3.3, which species do not occur in this RE and which species are introduced.	Provide further information demonstrating the seed selection and seed rates for the Native Ecosystem PMLU and Creek Diversion PMLU reflect the dominant species in the relevant RE. Include further information detailing the dominant species in the relevant RE, the species which do not occur in the relevant RE and which species are introduced.
9	6.2.3 Material Characterisation	Section 6.2.3 states that Appendix K provides a geochemical assessment of waste material. Appendix K states that all overburden units (excluding lignite) are NAF. However, table 7.3 shows that more than half the organic lithologies are UC or PAF and approximately 18% of the non-organic lithotypes are either classed as UC or PAF. Table 7.4 shows that 36% of samples are either UC or PAF. Statistical analysis classifies the material as NAF on average. Kinetic testing on a total of 5 samples is presented (pdf page 1465). Of these 5 tests, 1 sample was impermeable, and 3 of the remaining 4 samples generated acidic leachate. A conclusion drawn from the kinetic testing was that even small concentrations of sulphide minerals can generate AMD indicating some overburden classified as UC may generate acid.	Provide further information including: • Results of kinetic tests to date, • Results of TCLP testing of coal combustion products undertaken to date. Provide an ongoing monitoring program that requires representative samples of overburden and interburden to be taken and characterised using both static and kinetic testing to determine the potential to generate AMD, NMD and SMD. Provide further information regarding the selective handling of material to ensure that all material with the potential to generate AMD,

		Table 9.1 provides the material design parameters and does not appear to recognise the results of the static or kinetic samples with weathered sandstone proving to be acid generating in the kinetic testing (pdf page 1466)) and being nominated as dump cover in native vegetation rehabilitation. Section 9.1 states that the material design parameters (provided in table 9.1) guides the handling and placement of material. Section 9.1 also provides information on the block model and states that all overburden other than carbonaceous mudstone is NAF. It appears that the results from the characterisation has not informed the management of material. It is noted that one kinetic column leach test has been undertaken for coal combustion products as stated in Section 7.6.1 of Appendix K. Conclusions for coal combustion products are provided on a single result from kinetic testing. No TCLP results are provided to demonstrate the coal combustion products are within the limits specified in the EA. Section 10.1 of Appendix K provides information on further analysis that is required to ensure characterisation is representative of material being mined. It is noted that further static and kinetic characterisation is required with additional kinetic testing of overburden/interburden commencing September 2021 and kinetic test results for the K4S highwall will be available in April 2022. This section indicates that no further kinetic testing of waste streams is proposed as one or two leaching columns have been undertaken and this is sufficient to demonstrate consistency.	NMD or SMD is not included in cover material and is buried within the landform. Provide criteria in the schedule that ensures all cover material does not have the potential to generate AMD, NMD or SMD.
10	6.2 Tailings Storage Facility.	Section 6.2 refers to K2W-N and K4S Ash Storage Facilities and K2W-N and K4S Tailings storage facilities. Information in this section indicates that the Ash Storage Facilities and Tailings Storage Facilities are the same structures. Limited information is provided for the K2 TSF, Ramp 3 TSF and the RD16 TSF. Section 6.2.2.1 states that investigations have confirmed that no tailings from the Ramp 3 TSF were within 6m of the surface. Section 6.2.4.1 states that RD16 has been rehabilitated to RM6 and NWB TSF is currently undergoing rehabilitation. There is limited information confirming that the TSFs have achieved the relevant milestones required to achieve a stable condition. Figure 5.1 of Appendix M shows the final landform of the mine. This figure indicates the southern corner of the K2W-N ash storage is immediately	Provide clarification regarding the location, use and management of ASF and TSFs as single structures that store both ash and tailings. Provide further information that demonstrates RMs have been achieved for each of the TSFs no longer being used including information demonstrating cover material does not have the potential to generate AMD, NMD or SMD. Provide design drawings and decommissioning program for the K2W-N ash storage. Provide further information regarding the final landform of the K2W-N ash storage to

		adjacent to the final highwall of the K4E and appears to form a steep valley. It also appears that the north eastern abutment of the K2W-N ash storage slopes down to the low wall of the K2E pit. Figure 9.1 of appendix K indicates that a steep abutment is proposed in this area of the K2W-N ash storage. No further information about the landform in these areas is provided. While section 6.2.4.2 states that certified design drawings exist for the K2W-N ash storage, these have not been provided. Section 6.2.4.2 states that tailings deposition will be transferred to the K4S Ash Storage Facility prior to the coal combustion products transfer. It appears that this would place the tailings at the bottom of the void and potentially below groundwater level.	demonstrate the final landform will achieve a stable condition. Provide further information regarding how the K4S will be non-polluting.
11	6.3.4.2 Slope Stability Analysis	This section provides information about the slope stability analysis for the final voids and states that the boundary of the PMLU footprint is assigned at the setback distance and a nominal buffer between the PMLU and the surface rights boundary was applied as contingency. While it is understood that 6 locations were analysed for slope stability only, two locations (Section A and Section D) are provided in the rehabilitation planning part and appendices. The other cross sections are not provided in the landform design report or the void closure plan. This section notes that setbacks to attain a FOS was up to 516 m and up to 200m behind the crest of the highest remaining bench. However various figures (e.g. Figure 2.24, 4.1 and 5.1 of Appendix M) throughout the document indicate that the residual void shells are within 50-100m of the surface rights boundary. No figure is provided showing the location of pit shells, safety berms based on a FOS of >1.5 and the surface rights boundary. Hence, it is unclear whether the setback distances for all highwall slopes remain within the surface rights boundary.	Provide an updated planning part that includes the results of slope stability analysis for each cross section. Provide a figure that demonstrates the pit shell and associated safety berm for the highwalls remain within the surface rights boundary.
12	6.1.1.3 and 6.3.5 Void Hydrology	It is noted that void water quality modelling is based on existing groundwater quality and does not include potential additional contaminant loads from the highwall, material buried in voids or material co-disposed in overburden material. Section 9.5 of Appendix K states that the low wall of the pit will be constructed with interburden which is interpreted to be PAF. Section 6.1.1.3 (and section 10.6 of Appendix I) states that increased extraction of water prevents an increase in salinity by preventing the evapoconcentration of salt and that extraction levels can be used to manage void water salinity.	Provide water quality modelling for the void that contemplates potential contamination from the high wall, the low wall, material buried in voids and co-disposed in overburden. Provide further information regarding the 5 scenarios modelled for each void, and clarifying which scenario is modelled to achieve the predicted contaminant concentrations.

		Section 6.3.5 states that four of the five scenario's modelled for the water in each void are based on ongoing, continuous water extraction that appears to be required in perpetuity. Graphs showing water depth for only 1 scenario is provided. Predicted contaminant concentrations are provided in a table but it is unclear which scenario has been modelled to achieve these results. Information justifying the modelled extraction rates and demonstrating the rate of extraction will be required to support the other PMLUs in perpetuity is not provided. This section indicates that long term groundwater modelling shows groundwater from backfilled voids in the north-west and west may migrate over time to Meandu Creek.	Provide information to justify modelled extraction rates and demonstrate the rate of extraction required to support PMLUs. Provide information regarding contaminants of concern and predicted impacts to Meandu Creek from long term migration of groundwater from back-filled voids.
13	Section 6.1.1 & Appendix I – 6.5.2	There is a lack of groundwater contours in Appendix I and the rehabilitation planning part generally to provide confidence in the predicted groundwater level contours 300 years post mining. There are no groundwater level contours presented for the results of the Steady State model described in Appendix I. There are no groundwater level contours or drawdown contours presented for end of mining to compare with those which are presented for the period 300 years post mining. There are no groundwater level contours for the Tarong Beds/ coal seams developed from observed water levels from monitoring bores. There are no groundwater level contours presented as determined during the calibration period (July 2014 to May 2021). There are some contours provided in JBT 2021 but the model has undergone significant change and updated contours should be provided from the updated model.	Provide an updated rehabilitation planning part that includes: • Additional groundwater contours at 300 years post mining. • Groundwater contours for the results of the steady state model described in Appendix I. • A comparison of groundwater contours at end of mine and 300 years post mining. • Groundwater contours for the Tarong beds/coal seams. • Groundwater contours as determined during the calibration period (July 2014 to May 2021). • Updated contours as a result of the updates made to the JBT (2021a), K2E Project – Groundwater Model.
14	8.2.5 Additional Water Storage PMLU monitoring	This section states details of monitoring for the water storage PMLU are provided in section 8.2.6. Section 8.2.6.2 does not provide a water quality monitoring program for the residual voids to demonstrate a stable condition has been achieved and does not include information regarding	Provide a monitoring program that includes residual void water quality monitoring sufficient to demonstrate the proposed PMLU and a stable condition will be achieved and maintained.

		the parameters to be monitored to demonstrate the PMLU has been achieved and maintained.	
15	8.2.6.1 Proposed water monitoring objectives	Information in this section is limited to Meandu Creek and does not include the other two drainage lines that receive mine affected water and discharge off lease, namely Black Creek and the drainage line in QW. This section states the overall objective is to progressively improve the Meandu Creek and provides information regarding a monitoring program to measure the progressive improvement of water quality. However, the land is required to achieve a stable condition including sustaining the PMLU and be non-polluting. Therefore, a monitoring program and criteria that focus on progressive improvement will not be sufficient demonstrate a stable condition has been achieved and the land is suitable for surrender. Further, Table 8.5 provides parameters and values that do not reflect the environmental values identified in section 2.1.4.2. This section also proposes 4 monitoring events (at 1, 2, 5 and 10 years) for both water quality and aquatic ecology/biological indicators. It is unlikely that this program will provide sufficient data to demonstrate a stable condition has been achieved and support a successful surrender application. It is noted that this information conflicts with information in section 8.3.5. Further, the monitoring program does not state the locations the monitoring will be undertaken. The milestone criteria for RM8 in the PRCP Schedule is to apply areas upgradient of CP3. However, monitoring is only proposed at CP3.	Provide a monitoring program that includes monitoring of Black Creek and the drainage line in QW. Provide a monitoring program that contemplates objectives for the relevant environmental values that is designed to demonstrate the achievement of a stable condition and the ability to support the proposed PMLU. Provide revised monitoring frequencies that will provide sufficient data to demonstrate achievement of a stable condition and the proposed PMLU, or, provide further information to justify the proposed monitoring frequencies. Provide information and mapping to depict and justify all monitoring locations and includes monitoring locations that are upgradient of CP3.
16	8.2.6.3 Groundwater monitoring	It is noted throughout the rehabilitation planning part that mine activities have impacted groundwater quality and there is the potential for movement of mine affected water into the receiving environment (as outlined in table 6.17). For areas that are assigned a PMLU the land must achieve a stable condition which includes the ability to sustain a PMLU and be non-polluting. This section does not include a monitoring program for groundwater to demonstrate the land achieves and supports the PMLU and is non-polluting. Instead, it refers to the receiving environment monitoring program which has been developed for operational purposes and is not attached to the PRCP.	Provide a groundwater monitoring program sufficient to demonstrate achievement of the proposed PMLU and a stable condition.

17	8 Monitoring and Maintenance	The characterisation section demonstrates that PAF occurs in the overburden and some overburden classified as UC in static tests may produce acidic drainage and be PAF. Section 6.1.6.2 recognises that an objective of the tailings cover system is to minimise the infiltration of water. Section 6.1.3.3 states that there is the potential for contaminants to be released from tailings, coarse coal rejects and coal combustion products if oxidation occurs. However, the cover system monitoring does not include methods to measure both water infiltration and oxygen infiltration. The monitoring program should include monitoring to detect differential settling that may impact surface water low or impact landform stability.	Develop and provide a monitoring and sampling plan for cover systems that includes: - representative sampling of all cover material to ensure it is NAF. - monitoring of cover systems for water and oxygen infiltration and differential settling.
PRCP Schedule			
18	Milestone criteria	Appendix K (pdf page 1486) refers to the need for topographic survey and inspection to confirm the settling of material within the landform has not affected the drainage or stability of the final landform. However, criteria implementing this recommendation is not included in the schedule.	Provide revised milestone criteria that reflect recommendations made in technical appendices.
19	RM3 and RM4	These milestones appear to use different terminology for the waste from coal processing. RM3 refers to tailings. RM4 refers to mixed plant rejects. Table 2.21 indicates these two waste streams are mixed and are disposed of together.	Provide clarification regarding whether the material is intended to be referred to as two separate products or use consistent terminology for coal processing waste.
20	RM 7 and RM9	The planning part states that the limitation of infiltration is key to preventing oxidation of the underlying material.	Consider inclusion of criteria regarding maximum infiltration rates. Maximum infiltration rates that will help ensure the PMLU is achieved.
21	RM2	Milestone criteria c) does not appear to specifically apply to this site. The rehabilitation planning part does not include information about dams or leach pads that are lined with plastic or geofabric. This milestone does not include certification that the land is not contaminated and is suitable for the PMLU.	Remove criteria from the schedule that are not relevant to the site. Include criteria requiring certification that the land is not contaminated and is suitable for the PMLU.
22	RM3	Criteria for this milestone can be improved to meet SMART principles. For example: • Criteria regarding the necessary level of compaction required to minimise infiltration are not provided. • Criteria to ensure that only material that is not capable of generating NMD, SMD or AMD is used for capping is not included. • Criteria d) does not reflect the requirement to ensure that coal combustion products are covered by at least 2m of NAF material and tailings/MPR are covered by at least 6m of NAF material.	Provide revised milestone criteria for RM3 that specifies - Compaction rates that will achieve the minimal infiltration rates. - Criteria including sampling frequency to ensure material not capable of generating NMD, SMD or AMD is used for capping. - An AQP certifies that all material used for capping material not capable of generating NMD, SMD or AMD.

		Criteria to ensure water does not pond on the surface of the landform is not included.	- Ensure coal combustion products that comply with TCLP limits are covered with 2 m of material not capable of generating NMD, SMD or AMD. - Ensure that tailings/MPR and coal combustion products that exceed the TCLP limits are covered by 6m of material not capable of generating NMD, SMD or AMD. - Ensure that surface of the landform does not pond water and does not concentrate water that will cause erosion.
23	RM4	Criteria for this milestone can be improved to meet SMART principles. For example: Criteria d, e, f, g, i and m are not specific or measurable. b) indicates that only landforms constructed after 2016 will be covered with 6m of NAF. Justification for this requirement is not provided in the planning part. c) is not specific or measurable. Criteria must be included in the schedule. Criteria h and j refer to “minor areas” that can achieve a gradient <25%. These criteria are not specific or measurable and the LEM indicates these slopes will not achieve a stable condition. The milestone criterion for plantation forestry only refers to undisturbed land and therefore can be removed from the schedule. It appears that criteria g relates to the decommissioning K2WN void and the QW sump in addition to other regulated structures.	Provide criteria that meet the SMART principles and achieve a stable condition as follows: - Provide milestone criteria that reflect the requirement for all PAF material to be covered by at least 6m of not capable of generating NMD, SMD or AMD. - Provide criteria for subsoil quality in the schedule. - Nominate all regulated structures subject to criteria g. - Remove criteria that relate to undisturbed land. - Include criteria that specify the outcomes required for diversions/watercourses and refer to specific plans that are included in the PRCP.
24	RM5	Section 6.1.6.2 states that minimum topsoil and subsoil thicknesses for the Beef Cattle Grazing PMLU have been developed and their implementation should lead to sustainable PMLU. However, minimum topsoil and subsoil thicknesses are not provided in criteria for this milestone (it is noted that a “nominal” thickness of 0.2m is specified).	Provide revised milestone criteria for RM5 that include topsoil thicknesses sufficient to achieve the proposed PMLU.
25	RM6	Criteria specifying species mix and seeding rates have not been provided for any PMLU. Suggest inclusion of criteria which can then be further refined/amended at a later date based on the outcomes of trials.	Provide seeding rates and species mix for each of the PMLUs.

		Criteria c is not specific and must include as a minimum a seeding rate and list of species to be included. While it is noted that a trial is intended to be undertaken it is not anticipated to be completed until 2030 (starting in 2025 and taking 5 years to be completed). RA 2 may require the implementation of RM6 prior to the conclusion of the trial. Criteria h) refers to vegetation substantially reflecting those found in local riparian regional ecosystems. This criterion is not specific or measurable.	Provide revised milestone criteria for RM6 that specifies the condition of ecosystems that rehabilitation will be compared to.
26	RM7	Criteria for this milestone can be improved to meet SMART principles. Criteria that reflect the establishment of a stable condition have not been included such as: • None of the PMLU criteria include a requirement to achieve groundcover that reflects the LEM to achieve a stable condition. • Specified strike rates and establishment of vegetation. • Stem densities for vegetation/tree species. • Maintaining the specified species mix for the PMLU. • Specific parameters regarding erosion that can be measured have not been included (e.g. presence of erosion gullies, erosion rates. • Absence of bare topsoil or subsoil. • Criteria regarding the presence/concentration of weed/pest species. • Criteria regarding surface water quality. • Absence of seepage expressing at the surface. • All parameters relevant to the stock watering and values for each of the parameters listed for water storage.	Provide revised milestone criteria that meet the SMART principles and are necessary to demonstrate the land will achieve a stable condition.
27	RM8	The proposed criteria can be improved to meet the SMART principles and reflect the environmental values relevant to the receiving environment. The criteria are to apply areas upgradient of CP3 but monitoring is only proposed at CP3. The criteria for QW and BC do not include all parameters and concentrations that protect environmental values of the receiving environment and reflects the land being non-polluting. Criteria c only provides for monitoring of groundwater near the NWBV and does not specify all the parameters to be measured. There are 3 saline plumes identified on site with the potential to impact areas outside the mining lease. While the planning part states groundwater contamination is	Provide revised criteria that meet the SMART principles. Provide groundwater quality criteria that apply to sufficient monitoring locations that demonstrates the land is non-polluting.

		likely to migrate to residual voids, this appears to be based on continual extraction from the residual voids.	
28	RM9	The proposed criteria can be improved to meet SMART principles. Criteria a) is not specific or measurable. Criteria b) does not include all the relevant parameters and values that reflect the environmental values of the receiving environment and necessary to demonstrate the land is non-polluting. Groundcover requirements for Beef Cattle Grazing and Native Ecosystem do not reflect the results of the LEM. The proposed criteria for achievement of native ecosystem PMLU specifies only the bioregion and land zones. Criteria proposed do not provide many aspects required to demonstrate a stable condition has been achieved. For example: • Vegetation species required to support the PMLU are present, have required stem densities, are self sustaining and resilient to demonstrate the land has achieved the PMLU, • Weed presence has not impacted the achievement of the PMLU, • Specific habitat features are present and persisting to support native ecosystem and steep rocky ecosystem, • Evidence that fauna is using native ecosystem and steep rocky ecosystem habitats, • The landform continues to comply with design requirements and differential settlement or oxidation of material has not resulted concentration of surface water flow or other impacts that prevent the land from achieving a stable condition, • Tunnel, gully and rill erosion has not exceeded a specified level, is not occurring and there is no evidence of salt rise or other factors that may impact the ability for the land to maintain a stable condition, • Specified erosion rates have been met and maintained over time, • Specified levels of soil development has occurred and supports the ongoing recruitment of native species, • Soil depth and subsoil depth has not been significantly impacted by erosion or biological processes that may increase infiltration, • Water and oxygen infiltration rates have been proven to be reduced to the extent (a nominated rate or %) that prevents seepage, • Seepage is no longer present or expressing at the surface,	Provide criterion for specific regional ecosystem types that rehabilitation will be compared to. Include criteria from RM8 to ensure water quality is maintained. Provide revised criteria that demonstrate the land has achieved a stable condition.

		• Surface water quality meets specified values for parameters that reflect environmental values of the receiving environment and sustain the PMLU, • Groundwater monitoring of specific parameters and values at specific locations to demonstrate the land is non-polluting, • All slopes have been certified as being geotechnically stable, • Safety infrastructure has been constructed and is maintained around the highwalls, and • The voids continue to be groundwater sinks and the land is non-polluting.	
29	RA tables generally	Some schedule tables for RAs include several columns that appear to not be relevant (e.g. RA1 dates 10 December 2021 – 10 December 2024) and therefore should be removed. It is noted that the Excel (.xls) version of the schedule in the application does not include these columns. In most tables RMs are grouped together in 5 year increments. The objective of the PRCP Schedule is to ensure each rehabilitation milestone is achieved as soon as reasonably practicable.	Provide revised PRCP schedule RA tables that include timeframes specifically designed to achieve progressive rehabilitation for each particular RA. Information to support and justify the proposed timeframes should be included in the rehabilitation planning part.