

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: Aberdare Collieries Proprietary
Limited
Level 2, North Tower
540 Wickham Street,
Fortitude Valley QLD 4008

ATTN: Paige Salmon

PSalmon@csenergy.com.au

Our reference: EPML00417213 / 101/0008031-001

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 **27 May 2021**.

Environmental authority: **EPML00417213**

Land description: **ML50074**.

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 **21 March 2022** (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 176 of the *Environmental Protection Act 1994*, where the administering authority must have regard to any response given for an information request.

If you require more information, please contact Kylie Catterall (Principal Environmental Officer) on the telephone number listed below.



Signature

3/09/2021

Date

Chris Wake
Department of Environment and Science
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@des.qld.gov.au

Privacy statement

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

Attachments

Attachment 1: Information requested.

Attachment 1: Information requested

Item	Relevant section (proposed PRC plan and/or PRCP Guideline)	Matter	Information Request
PRC Planning Part			
1	Rehabilitation and Management Methodology Section 3.5 of the PRC Plan. Section 3.6 of the <i>Progressive Rehabilitation and Closure Plans (ESR/2019/4964)</i> (PRCP Guideline)	Section 3.5 of the proposed PRC Plan includes some information regarding the proposed methods and techniques for rehabilitating the land to a stable condition. However, information is limited in some respects and there is also a lack of detail provided to support the timeframes proposed for achieving the rehabilitation milestones in the PRCP Schedule. Additional information is requested to support the department's assessment in this area. A more detailed explanation is required, particularly in relation to the rehabilitation methods that will be implemented to achieve the grazing post mining land use and fauna habitat with special emphasis on areas with final landform slopes over 15%. An explanation of how these methods have been planned to be implemented with reference to the PRCP Schedule milestones is also required. The Environmental Protection Regulation 2019 includes the following rehabilitation objective and performance outcomes which are relevant – PRCP Objective Rehabilitation of land to a stable condition will be achieved progressively during the life of the mine. PRCP Performance Outcomes 1. Rehabilitation Areas (RAs) are planned in a way that maximises achieving progressive rehabilitation for the post-mining land use.	Provide a revised PRC Plan that includes the following: 1. For each proposed post-mining land use provide detailed information relating to the proposed methods and techniques for rehabilitating the land to a stable condition (for both geotechnical and erosional stability) in a way that supports the rehabilitation milestones under the proposed PRCP Schedule. 2. Based on the expected slope length, clarify the stability risks associated with achieving a stable final landform design. Based on the additional information to be provided above, revise the Risk Assessment (Section 6.0 of the proposed PRC Plan) and the PRCP Schedule. This must include additional management strategies identified above to ensure consistency with the rehabilitation milestones. The timeframes proposed in the PRCP Schedule must have regard to the risks identified and the relationship between the rehabilitation methods proposed, the relevant risks to achieving stable condition and the timeframes for achieving each rehabilitation milestone should be explained in the PRC Plan.

		2. The first rehabilitation milestone for a RA will start as soon as practicable after the land in the area becomes available for rehabilitation for section 126D(4) of the <i>Environmental Protection Act</i> (EP Act) by, for example, starting within 6 months after the area becomes available for rehabilitation. 3. The timeframe mentioned in section 126D(4) of the EP Act for achieving each rehabilitation milestone has regard to the risks identified in the PRC plan for the land under section 126C(1)(f) of the Act. The timeframe mentioned in section 126D(4) of the EP Act within which the land will be rehabilitated to a stable condition has regard to any timeframes agreed to during consultation with the community about the PRC Plan.	
2	Soil and Capping Material Section 3.5.7 of the PRC Plan. Section 3.6.1 of the PRCP Guideline.	Section 3.5.7 of the proposed PRC Plan contains limited information regarding the quality of available topsoil. Page 29 of the PRCP Guideline outlines that a soil assessment must be carried out. However, the information presented in Section 3.5.7 does not include all the minimum information requirements such as: • The quality of topsoil; • An assessment to determine the need for ameliorants and fertilisers of existing topsoil; and • The relationship between soils and vegetation ecosystems for the PMLU and rehabilitation methodology.	Provide a revised PRC Plan with additional information to address the soil and capping material assessment information requirements outlined on page 29 of the PRCP Guideline. This includes: • The quality of topsoil required to complete the targeted rehabilitation methodology; • An assessment to determine the need for ameliorants (e.g., organic carbon and gypsum) and fertilisers; and • The relationship between soils and vegetation ecosystems for the PMLU and rehabilitation methodology. Update the milestone criteria to specifically require topsoil quality management strategies. Expected inclusions are: • Additional milestone criterion for soil health assessment is included in the PRCP Schedule for Rehabilitation Milestone (RM) 5.

			• Additional milestone criteria that ensure the quality of topsoil is consistent with that required to complete the targeted rehabilitation methodology. • Additional milestone criteria that include the management strategy for the topsoil deficit.
3	Risk Assessment Section 3.6 and Appendix D of the PRC Plan. Section 3.7 of the PRCP Guideline.	A risk assessment is provided in Section 3.6 of the proposed PRC Plan. The provided risk assessment is incomplete as it does not appear to consider all sources of risks such as those attributed to the Eastern Branch Creek (EBC) diversion and levees. The risk assessment is also limited as it does not contain all the information requirements outlined in the PRCP Guideline (Section 3.7). These includes risk treatment steps such as: 1) Performances measures and constraints; and 2) Reporting and monitoring requirements as well as timing and scheduling. Further information is also required in relation to the risks associated with achieving stable landforms as the risk assessment presented Appendix D does not appear to include all risks associated with RM7 and RM8. These milestones are required to be included in the risk assessment as they relate to achieving a stable condition for all proposed PMLUs. The identified 'Risk Scenario/Threat title listed in Appendix D of the proposed PRC Plan is not consistent with the potential risks identified in the planning part of the PRC Plan. For example, Section 3.5.7 of the proposed PRC Plan outlines that <i>'Topsoil and subsoil testing across the Project site have universally confirmed that available soil resources are deficient in organic carbon and phosphorus, are generally moderately saline and are sodic to varying degrees'</i>. Furthermore, Section 3.5.7 and Table 11 of the proposed PRC Plan also outline that <i>'an additional volume of 19,110 m³ of growth medium (ash material and/or biosolids) will</i>	Provide a revised risk assessment and supporting information in the proposed PRC Plan that: 1. Includes a completed risk assessment to ensure alignment to the PRCP Guideline information requirements. 2. Include a risk assessment of all process steps including but not limited to levees and EBC diversion. 3. Ensure risks identified and addressed are consistent with actual and/or potential risks identified in the PRC Plan (e.g., dispersive and carbon limited topsoil and subsoil). 4. Assess the risks associated with achieving a stable landform (e.g., final landforms that exceed slopes of 15% and groundwater daylighting in the residual void). 5. Incorporate risk management strategies and methodologies identified in the PRC Plan.

		<i>need to be sourced elsewhere</i> '. However, Appendix D does not address this risk and proposed management actions.	
4	Monitoring and Measurement Appendix E of the PRC Plan. Section 3.8 of the PRCP Guideline.	A Monitoring and Maintenance Program is provided in Appendix E of the proposed PRC Plan. The PRCP Guideline (Section 3.8) states that the rehabilitation planning part must contain a monitoring and maintenance program that identifies and describes the monitoring systems that will be carried out to demonstrate if milestone and milestone criteria have been achieved. Further site-specific detail is required to describe the timing and proposed methodology of monitoring in addition to the identification of suitable reference/analogue sites. The proposed Monitoring and Maintenance Program did not contain sufficient site-specific information relating to stable landform milestone criteria. Proposed monitoring and maintenance activities associated with the EBC diversion and levees also appear to be absent. The rehabilitation milestones outlined in the Monitoring and Maintenance Program (9 RM's) was also identified to be inconsistent with the PRC Planning Part and the PRCP Schedule (8 RM's).	Provide a revised PRC Plan with additional information in the Monitoring and Maintenance Program, consistent with the information requirements outlined in Section 3.8 of the PRCP Guideline. This must include: 1. A clear site-specific Monitoring and Maintenance Program that would be repeatable based on the information provided. 2. Detailed site-specific monitoring and measurement methodologies which are supported by collection of statistically valid data and quantitative analysis. 3. Detailed specificity of the monitoring proposed to be undertaken, the methodology (with references) to ensure repeatable monitoring, the attributes to be monitored and the timeframes for which this monitoring is to be undertaken. 4. Detail of how QA/QC techniques will be incorporated into the monitoring methodology. 5. Specific details of proposed corrective actions if monitoring data indicates milestone criteria are not being met. A revised Monitoring and Maintenance Program is also required to ensure consistency with the proposed PRC Plan and Schedule. This must include correction of the error associated with the inclusion of RM1 (Area becomes available for rehabilitation).

Item	PRCP Schedule Reference	Matter	Information Request
PRCP Schedule			
1	RA2	The PRC Planning Part details the flooding risks and subsequent mitigation provided by the levees and EBC diversion. It is understood that these levees and the creek diversion are to be retained as permanent structures and as such will require designation of a PMLU and milestone criteria to facilitate a safe and stable landform. Within the PRCP Planning Part, it was not clear if the EBC diversion and levees are included in RA2 - water management infrastructure and if the PMLU identified as “water storage and fauna habitat” is applicable to these domains.	Provide a revised PRC Plan and/or Schedule that clarifies the RA and PMLU for the diversion and levee domain. If necessary, include relevant information within the PRCP Schedule to indicate the specific milestone criteria applicable to this domain. Provide a reference map/s in accordance with Section 4 step 2 of the PRCP guideline
2	RA8	The PRC Planning Part and the “Relevant Activities” field in the PRCP Schedule (RA8) indicates that RM2 and RM5 are applicable. However, within the PRCP Schedule there is no corresponding cumulative areas proposed for RM2 and RM5.	Provide a revised PRCP Schedule that includes the proposed cumulative area to be achieved for all the relevant rehabilitation milestones.
3	RM4	RM4 contains criteria related to a minimum geotechnical Factor of Safety (FoS) to be achieved. Whilst the PRC Planning Part discusses adequacy of the FoS to the OPAC and IPAC batters, there is no discussion on the adequacy of the FoS to other high-risk slopes, specifically the residual high wall to be retained following cessation of mining. The PRCP Schedule indicates that RM4 is applicable to all RA's, except for RA8. However, the geotechnical risks may not be applicable to all domains.	Provide a revised PRC Plan that justifies the nominated FoS and specifies the landforms that this criterion is applicable to.
4	RM4	RM4 relates to landform development (reshaping and reprofiling) however does not contain criteria relating to backfilling of the void.	Provide a revised PRCP Schedule that includes:

		Throughout the PRC Planning Part (e.g., Section 3.5.12.2), it is stated that to mitigate potential for groundwater intrusion into the final void, the final floor level will be backfilled to 280mAHD. Given the importance of the backfill activity to sustain the nominated PMLU, and mitigate against a void containing permanent water, milestone criteria based on the SMART principles (Section 4, Step 5 of the PRCP Guideline) are required to be proposed within the relevant RM. It is not clear from the monitoring and maintenance regime if the groundwater level in proximity to the void will be characterised to provide evidence that groundwater will not have a pathway to the base of the residual void.	1. Milestone criteria to facilitate backfilling of the pit to avoid groundwater ingress. 2. Commitments in the Monitoring and Maintenance Plan that groundwater monitoring will occur in proximity to the void to ensure that the hydrogeological model predictions can be validated.
5	RM4	The PRC Planning Part (page 57) references that the design criteria for the IPAC and OPAC provide a 3m cover on top of the ash and the corresponding Figure 20 indicates that the cover design extends to the batters. As the PRCP references the IPAC and OPAC batters as RA 7, consideration should be given for including cover design milestone criteria that is demonstrative that light grazing PMLU can be achieved.	Provide a revised PRCP Schedule that includes milestone criteria related to the cover design proposed for the IPAC and OPAC batters.
6	RM5	Whilst it may be appropriate to reference trial work in completion criteria, carrying out rehabilitation trials is not considered a milestone itself as the trials should occur prior to land becoming available for rehabilitation. The PRC Planning Part does not provide sufficient detail of the proposed topdressing trials in accordance with Section 3.7.1 of the PRCP Guideline. Whilst the achievement of a specific pH in soil may be required, there is no justification provided in the PRC Planning Part as to why the soil pH is targeted at between 5.5-9.0. Section 3.5.7 of the proposed PRC Plan references historic amelioration trials, however there is no discussion on the chemical properties of the ameliorants that provides confidence that any chemical deficiencies of available topsoil can be overcome. Given the risk of soil sodicity leading to dispersion and erosion and considering	Provide a revised PRC Plan that: 1. Justifies the proposed criteria associated with RM5. 2. Describe the rehabilitation trials that will be undertaken, in accordance with the requirements of Section 3.7.1 of the PRCP Guideline to support the milestone criteria that, <i>"topdressing material based on current state of trial work spread over reshaped surfaces"</i>. 3. Includes additional criteria associated with the verification that the placed soils are of a suitable quality to ensure progression of subsequent rehabilitation milestones.

		that further work is required to develop the amelioration strategy, consideration should be given for include criteria confirming that the soil health is suitable to allow for the proceeding milestone to occur. The PRCP Guideline (page 64) states that <i>"An assessment of soil health and suitability has been completed by an appropriately qualified person to confirm soil is suitable for target vegetation establishment."</i>	
7	RM6	The criteria presented for RM6 doesn't align with the SMART principles, outlined in Section 4.1, Step 4 of the PRCP Guideline.	Provide a revised PRCP Schedule that provides milestone criteria associated with revegetation that meets the SMART principles.
8	RM7	A vegetation ground cover of >50% is proposed for the PMLUs, however there is no justification within the PRCP Planning Part which details how this coverage will result in a stable and sustainable final landform. As the dominate PMLU to be attained is grazing, supported by a seed mix comprised mainly of grass species, without the justification for the ground cover for both flat surfaces and slopes, the proposed 50% ground cover is not considered sufficient to demonstrate that the land can sustain the light grazing PMLU. The Department is aware of studies conducted in the Bowen Basin that have determined a minimum ground cover to provide erosion control, however it is not understood how repeatable this criterion is to the geographical setting of Kogan Creek Coal Mine and if the proposed ground cover also provides suitable coverage to provide a sustainable PMLU.	Provide a revised PRC Plan that justifies the proposed vegetation ground cover to sustain the nominated PMLU. Specify if the proposed ground cover is applicable for slopes.
9	RM7	The criteria related to erosion doesn't align with the SMART principles outlined in Section 4.1, Step 5 of the PRCP Guideline. Departmental advice was provided in pre-lodgement that <i>"whilst comparisons to analogue sites may be appropriate, the planning part does not detail where the analogue sites are located or the recorded erosion rates. Refer to the example milestone criteria in</i>	Provide a revised PRCP Schedule that: 1. Provides milestone criteria associated with erosion monitoring that meets the SMART principles. 2. Indicates the locations of analogue sites and expected soil properties to allow for comparisons.

		<i>the guideline for developing a maximum erosion rate, groundcover coverage and milestone criteria related to rill or gully erosion”.</i> Whilst it is acknowledged that the Rehabilitation Monitoring and Maintenance Plan references an erosion classification scheme, the Department didn’t draw the same conclusions from the report that is referenced (Neldner <i>et al.</i> 2019). The Department is of the view that the criteria assigned to moderate, between 15-30 rills/gully with an average depth between 10-30cm across a 50m transect, will not facilitate a stable landform considering that the site will not be operational during the monitoring period, and therefore rectification works may not be possible. More appropriate erosion monitoring for closure purposes may include the presence/absence of rills/gullies or a calculated maximum soil loss expressed in t/ha/yr.	3. Includes evidence justifying the appropriateness of the referenced Neldner <i>et al</i> 2019 report in establishing the erosion classification.
10	RM8	RM8 provides criteria that tree species will be established for both the light grazing PMLU and the fauna habitat PMLU, however the PRC Planning Part does not reference the type of tree species to be planted. This is considered material to the viability of the PMLU as the PRC Planning Part references that remnant Eucalyptus species woodlands are considered to provide the best target community to meet the fauna habitat PMLU.	Provide a revised PRC Plan that includes a proposed species mix that will be planted to facilitate the fauna habitat PMLU.
11	Progression of rehabilitation	Section 126D(4) of the EP Act provides that a PRCP Schedule must provide for each rehabilitation milestone to be achieved “as soon as practicable” “after the land to which it relates becomes available for rehabilitation. Considerations for determining when rehabilitation or improvement can be achieved “as soon as practicable” include, but are not limited to: • the size of the area to be rehabilitated or improved; • the complexity of the rehabilitation or improvement methods; and	Provide a revised PRCP Schedule whereby the nominated “date area is available” is consistent with the “commencement of first milestone”.

		the suitability of weather seasonality for the rehabilitation or improvement. The proposed PRCP Schedule shows an approximate four-to-five-year time gap between the commencement of the first milestone and the “date area is available” for all RAs except for RA7. This generally does not meet the requirements for land to be rehabilitated as soon as practicable after the land becomes available. As discussed during pre-lodgement, it is likely that the value populated in “date area is available” is erroneous and the intent is to that “commencement of the first milestone” date is close to the “date area is available”.																																																																																																				
12	Progression of rehabilitation	The PRCP Schedule template is structured so that applicants can show achievement of progressive rehabilitation by increasing the values assigned to the cumulative area achieved to ultimately match the total RA size. The milestones must be achieved consecutively. Within the <u>Cumulative area available (ha) cell</u>, the PRCP Schedule must identify the area of land within the RA that will become available at a given time. In the proposed PRCP Schedule this information is currently blank. Appendix 2 of the PRCP Guideline provides an example Schedule (see below) that demonstrates progression of rehabilitation through a sequential cumulative area being achieved. <table><tr><th></th><th colspan="10">Milestone completed by</th></tr><tr><th></th><th>10 Dec 2023</th><th>10 Dec 2025</th><th>10 Dec 2030</th><th>10 Dec 2035</th><th>10 Dec 2040</th><th>10 Dec 2042</th><th>10 Dec 2045</th><th>10 Dec 2048</th><th>10 Dec 2052</th><th>10 Dec 2060</th></tr><tr><th>Milestone reference</th><th colspan="10">Cumulative area achieved (ha)</th></tr><tr><td>RM1</td><td>10</td><td>15</td><td>25</td><td>35</td><td>45</td><td>60</td><td>65</td><td></td><td></td><td></td></tr><tr><td>RM2</td><td>8</td><td>12</td><td>25</td><td>35</td><td>40</td><td>50</td><td>65</td><td></td><td></td><td></td></tr><tr><td>RM3</td><td>3</td><td>8</td><td>15</td><td>20</td><td>30</td><td>40</td><td>55</td><td>65</td><td></td><td></td></tr><tr><td>RM5</td><td></td><td>3</td><td>10</td><td>15</td><td>25</td><td>30</td><td>45</td><td>65</td><td></td><td></td></tr><tr><td>RM7</td><td></td><td></td><td></td><td>10</td><td>15</td><td>20</td><td>30</td><td>45</td><td>65</td><td></td></tr><tr><td>RM9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>65</td></tr></table>		Milestone completed by											10 Dec 2023	10 Dec 2025	10 Dec 2030	10 Dec 2035	10 Dec 2040	10 Dec 2042	10 Dec 2045	10 Dec 2048	10 Dec 2052	10 Dec 2060	Milestone reference	Cumulative area achieved (ha)										RM1	10	15	25	35	45	60	65				RM2	8	12	25	35	40	50	65				RM3	3	8	15	20	30	40	55	65			RM5		3	10	15	25	30	45	65			RM7				10	15	20	30	45	65		RM9										65	Provide a revised PRCP Schedule that: - Follows the principles of how to demonstrate progression of rehabilitation for all RA’s. Refer to Appendix 2 of the PRCP Guideline and the instructions tab in the PRCP Schedule template for further guidance. - Includes entries in the row titled “Cumulative area available”.
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The proposed PRCP Schedule doesn't follow the same logic as the example provided above as the nominated values assigned to "cumulative areas to be achieved" are not demonstrative of rehabilitation progression.

Using RA3 (see below) as an example, note that the values for RM2 – RM6 are repeated across the columns, indicating that 103.9 Ha of each of these milestones is achieved in each relevant time period (denoted by the columns), which does not appear to be the intent. If RM2-RM6 is not performed during the nominated time period (e.g. between 10/12/52 – 10/12/57 or between 10/12/57 – 10/12/63), then the cumulative area achieved cell for these RMs should be blank.

Date area is available	10/12/47	10/12/52	10/12/57	10/12/63
Cumulative area available (ha)				
Milestone completed by	10/12/52	10/12/57	10/12/63	10/12/67
Milestone Reference	Cumulative area achieved (ha)			
RM1				
RM2	103.9	103.9	103.9	
RM3	103.9	103.9	103.9	
RM4	103.9	103.9	103.9	
RM5	103.9	103.9	103.9	
RM6	103.9	103.9	103.9	
RM7		103.9	103.9	
RM8			103.9	