

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: BHP Mitsui Coal Pty Ltd
Level 14, 480 Queen Street
BRISBANE CITY QLD 4000
By Email Transmission Only

ATTN: Trudy Mazucco <trudy.mazucco@bhp.com>

Our reference: EPML00819113

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 November 2021.

The application reference number is: EPML00819113

Land description: ML70312

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 **14 August 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.

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 decision.

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



Signature

14/02/2022

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

Attachments

Attachment 1: Information requested

Attachment 1: Information requested

Item	Section	Matter	Information Request
PRC Plan – Rehabilitation Planning Part			
1	Land suitability assessment <i>Section 3.1.1: Cattle Grazing Appendix 5: GT Environmental (6 August 2021): Soil and Capping Study for Transitional PRCP for the Red Mountain Infrastructure Project</i>	a) As per Appendix 5, desktop assessments of land suitability for cattle grazing have been conducted against the grazing ruleset for soil mapping units (SMUs) relevant to RMI. Appendix 5 notes that some of these assessments were limited by the data available. It is unclear if further actions have been taken to address assessment limitations or if further assessments against the grazing ruleset have been made on soils to be disturbed on the RMI site. b) The SMU for the undisturbed site (Q10) described in Appendix 5 is unclear.	a) Provide the results of any further assessments of land suitability for grazing against the grazing ruleset for soil mapping units relevant to RMI b) Provide the likely SMU for undisturbed site Q10.
2	Native vegetation growth medium <i>Section 6.1.4.1: PMLU requirements – Woodland habitat and watercourse</i>	Establishment of a growth medium for native vegetation through amelioration of spoil and subsoil is detailed in section 6.1.4 of the PRC plan. The following literature is referenced to support this proposal: (a) Carroll and Tucker, 2000 (b) Carroll et al, 2000 (c) Spargo and Doley, 2016 (d) Kopittke et al, 2004	Provide an updated PRC plan that includes the following literature as appendices: a) Carroll, C. and Tucker, A. (2000): Effects of pasture cover on soil erosion and water quality on central Queensland coal mine rehabilitation, Tropical Grasslands, vol. 34, pp 254-262. b) Carroll, C, Merton, L and Burger, P. (2000): Impact of vegetative cover and slope on runoff, erosion, and water quality for field plots on a

		(e) Davis et al, 1998 (f) Erskine and Fletcher, 2013 In the absence of rehabilitation trials to support the growth medium, supporting literature should be appended to the planning part.	range of soil and spoil materials on central Queensland coal mines, Australian Journal of Soil Research, vol. 38, pp.313-327 c) Spargo, A. and Doley, D. (2016): Selective coal mine overburden treatment with topsoil and compost to optimise pasture or native vegetation establishment. Journal of Environmental Management 182 342-350. d) Kopittke, G., Mulligan, D, Grigg, A. and Kirsch, B. (2004): Development of reconstructed soils and vegetation communities at a central Queensland coal mine: a preliminary investigation of twelve years of monitoring, SuperSoil 2004: 3rd Australian New Zealand Soils Conference, 5 – 9 December 2004, University of Sydney, Australia e) Davis MA, Wrage KJ, Reich PB (1998) Competition between tree seedlings and herbaceous vegetation: support for a theory of resource supply and demand. Journal of Ecology 86, 652-661 f) Erskine, P.D. and Fletcher, A.T. (2013): Novel ecosystems created by coal mines in central
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			Queensland's Bowen Basin, Ecological Processes, 2:33
3	Native vegetation growth medium <i>Section 6.1.4.1: PMLU requirements – Woodland habitat and watercourse</i>	Section 6.1.4.1 <i>PMLU requirements – Woodland habitat and watercourse</i> provides a list of the functional properties required of the growth medium to support native vegetation. It is not clear how the following properties are achieved to support the direct seeding to subsoil and spoil approach adopted in the PRCP: (a) Providing sufficient water availability and nutrients for native grasses, shrubs and trees (b) Soil structure that does not limit infiltration (c) ESP that is non-sodic to limit piping and tunnel erosion potential A list of subsoil and spoil properties is provided as justification for the suitability of the growth medium. This list does not speak to the above properties beyond advising that appropriate amelioration will be undertaken. It is noted that a number of parameters listed in Table 39 will be monitored at regular intervals, including at Year 0. If measured or observed prior to the commencement of RM5, the data could be used to demonstrate achievement of target thresholds/ranges for each parameter necessary to establish a growth media that is adequate to achieve the PMLU. For example – particle size analysis to consider soil texture, soil profile descriptions including a measure of PAWC, any restrictions to effective rooting depth for re-	Provide a revised PRC plan and schedule that elaborates on how the functional properties required by the growth media will be assessed and the efficacy of ameliorating subsoil and spoil to achieve those properties (listed in section 6.1.4.1) for woodland habitat and watercourse post mining land uses.

		vegetation species, and the ability of the soil to store and provide sufficient nutrients (e.g., analysis of organic matter and exchangeable cations). To adequately justify the suitability of subsoil and spoil as a growth medium, the PRC plan should further delineate the properties identified as necessary for establishment of woodland species, how these will be achieved and then demonstrated as being attained prior to commencement of revegetation activities.												
4	Woodland habitat <i>Section 6.1.8.5:</i> <i>Woodland habitat vegetation</i>	The description of vegetation types listed in table 28 and table 29 of the PRC plan are inconsistent with the vegetation types in milestone criterion RM11(a) and RM14(f). Consistent nomenclature for which species are defined as “trees”, “shrubs”, and “grasses” is necessary in the PRC plan to demonstrate achievement of milestone criteria RM11(a) and RM14(f). As the nomenclature assigned in Table 29 provides a broader description of vegetation structure, it is recommended that this is applied consistently across the PRC plan and schedule. The below table (Table 1) demonstrates the inconsistencies in nomenclature between sources: Table 1: Vegetation types in the PRC plan and RM11/RM14 <table border="1"> <tr> <th rowspan="2">Source</th><th colspan="3">Vegetation types</th></tr> <tr> <th>Type 1</th><th>Type 2</th><th>Type 3</th></tr> <tr> <td>Table 28 (RA2)</td><td>Dominant tree species</td><td>Dominant mid-storey</td><td>Dominant grass</td></tr> </table>	Source	Vegetation types			Type 1	Type 2	Type 3	Table 28 (RA2)	Dominant tree species	Dominant mid-storey	Dominant grass	Provide a revised PRC plan that uses consistent nomenclature between Table 28, Table 29, and milestone criteria in the PRCP schedule.
Source	Vegetation types													
	Type 1	Type 2	Type 3											
Table 28 (RA2)	Dominant tree species	Dominant mid-storey	Dominant grass											

		Table 29 (RA3)	Upper-storey tree species	Mid and lower storey tree and shrub species	Grass species	
		RM11/ RM14	Trees	Shrubs	Grasses	
PRCP Schedule						
5	Milestone Criteria <i>RM2: Remediation of Contaminated Land</i>	Milestone criteria (b) and (c) of RM2 <i>Remediation of contaminated land</i> are not measurable parameters to determine whether RM2 has been achieved. The milestone criteria below should represent completed actions rather than proposed actions as underlined: <i>b) In the event that residual contamination has been identified and presents a potential unacceptable risk to the nominated PMLUs or environmental values, remediation works and/or implementation of management controls <u>will be undertaken</u></i> <i>c) Where ongoing management of residual contamination is deemed appropriate, a draft Site Management Plan <u>will be prepared</u> for the administering authority's consideration</i> Furthermore, each rehabilitation milestone should be supported by milestone criteria that facilitate achieving subsequent rehabilitation milestones. The ongoing presence of residual contamination that presents a potential unacceptable risk to the nominated PMLUs may indicate that subsequent milestones are not achievable. It is recommended that criteria demonstrating the completion of				Provide a revised PRCP schedule that addresses the following: a) Milestone criteria are developed according to SMART principles and propose a measurable indicator of milestone achievement. b) Ensure that criteria demonstrate achievement of remediation/management controls.

		remediation, or the efficacy of management controls, are included at RM2 to support achieving subsequent milestones.	
6	Milestone Criteria <i>RM3: Landform development and reshaping</i>	Section 6.1.5.3 <i>Long-term landform stability</i> states that long-term landform stability risk is considered low due to 70% of the site having a final slope of <3%. This low-risk classification is not consistent with the approach taken in the schedule. Milestone criteria RM3(d) states: <i>d) Landforms reshaped with maximum 10% slopes (RA1, RA2, RA3)</i> To support the low-risk rating assigned to long-term landform stability in the planning part, it is recommended RM3 provides specific detail regarding the slope of different rehabilitation areas (e.g., those with maximum 10% slope and those with maximum 3% slope).	Review the criteria in RM3 and provide a revised PRCP schedule that ensures the criteria are commensurate with the low-risk landform proposed in the PRC plan.
7	Milestone Criteria <i>RM9: Revegetation (water course)</i>	A typographical error is noted at criterion RM9(b). This should refer to Table 30.	Provide a revised PRCP schedule that corrects the typographical error.
8	Milestone Criteria <i>Erosion</i>	Erosion prevention provided by groundcover crops and the reduced use of topsoil is frequently discussed throughout the PRC plan. The risk of piping and tunnel erosion associated with dispersive and sodic conditions is also identified. The absence of sufficient erosion related criteria may not satisfy the requirement to demonstrate the land will achieve stable condition.	Provide a revised PRCP schedule proposing additional criteria necessary to demonstrate the land will achieve a stable condition.

		It is noted that criteria related to achievement of specific groundcover rates are proposed in the schedule. To ensure the risk of piping and tunnel erosion is adequately addressed in the schedule it is recommended additional criteria are proposed. Erosion is a measured rehabilitation parameter in Table 38 <i>Monitoring schedule and measured rehabilitation parameters</i> of the PRC plan.	
9	Milestone Criteria <i>RM13: Achievement of post-mining land use to a stable condition (cattle grazing)</i>	With reference to the backfill and reshaping of land associated with dams and tailings drying cells proposed at RM3, it is recommended that a criterion be proposed at RM13 demonstrating the backfilled areas have not subsided and continue to be free-draining. Inclusion of such a criterion will demonstrate land has achieved a stable condition.	Provide a revised PRCP schedule that proposes a criterion at RM13 to demonstrate backfilled areas have not subsided and continue to be free-draining landforms.
10	Milestone Criteria <i>RM14: Achievement of post-mining land use to a stable condition (woodland habitat)</i>	a) It is recommended that additional milestone criteria are proposed at RM14 to ensure sufficient demonstration that the post-mining land use will be sustainable in the long term. It is noted that Table 38 and section 8.2.4 <i>General Rehabilitation Parameters</i> of the PRCP plan propose several parameters that may demonstrate long-term sustainability and satisfy SMART principles: • Invasive plants • Tree density and basal area • Shrub cover	Review the criteria proposed at RM14 and provide a revised PRCP schedule proposing additional criteria to demonstrate the land will achieve a stable condition.

		Recruitment A comparison of parameters measured at monitoring sites against reference sites is recommended to underpin criteria that are not transitioned from the EA. b) Section 8.2.1 <i>Reference sites</i> of the Rehabilitation planning part states that reference sites will be used to assess the performance of impacts of seasonal and/or climatic variability on rehabilitation. Such analysis is important to demonstrate the land can sustain a post-mining land use. It is recommended that a milestone criterion addressing this matter is proposed.	
11	Milestone Criteria <i>RM15: Achievement of post-mining land use to a stable condition (watercourse)</i>	a) It is recommended that additional Milestone criteria are proposed at RM15 to ensure sufficient demonstration that the post-mining land use will be sustainable in the long term. It is noted that Table 38 and section 8.2.4 <i>General Rehabilitation Parameters</i> of the PRC plan propose several parameters that may demonstrate long term sustainability and satisfy SMART principles: - Invasive plants - Species richness - Tree density and basal area - Tree canopy and shrub cover - Recruitment	a) Review the criteria proposed at RM15 and provide a revised PRCP schedule proposing additional criteria to demonstrate the land will achieve a stable condition. b) Review footnote 6 to define the reference site as undisturbed watercourse and provide in an updated PRCP schedule.

		A comparison of parameters measured at monitoring sites against reference sites is recommended to underpin additional criteria that are not transitioned from the EA. b) Section 8.2.1 <i>Reference sites</i> of the PRC plan states that reference sites will be used to assess the performance of impacts of seasonal and/or climatic variability on rehabilitation. Such analysis is important to demonstrate the land can sustain a post-mining land use. It is recommended that a milestone criterion addressing this matter is proposed. c) Footnote 6 in RM15 proposes that the watercourse reference site is representative undisturbed grazing land adjacent to the disturbance area. It is recommended that the reference site for the watercourse PMLU is undisturbed watercourse.	
12	Milestone Criteria <i>SMART principles</i>	Milestone criteria are required to be written in a manner consistent with SMART principles, as per section 4.1 Step 4 of the PRCP Guideline. RM12(a) specifies the following: a) <i>Revegetation species presence on upper banks, mid-banks and lower banks <u>representative</u> of sown seed mix as detailed in RM9</i> RM15(d) specifies the following:	Provide a revised PRCP schedule that ensures RM12 and RM15 achieve SMART principles.

		d) <i>Riparian vegetation consisting of an over-storey, under-storey and groundcover, <u>comparable</u> to an established watercourse reference site</i> The terms 'representative' and 'comparable' are not readily quantified and do not satisfy the SMART principles. It is recommended that the criteria incorporate measurable parameters that define what is considered 'representative' and 'comparable'.	
13	Milestone Criteria <i>Criteria must facilitate subsequent milestones</i>	Milestone criteria must facilitate achieving subsequent rehabilitation milestones. It is unclear how vegetation criterion RM12(a) facilitates the achievement of vegetation criterion RM15(d). The intent of RM12(a) is to demonstrate that each zone of the bank supports vegetation growth, however this parameter is not reviewed in the subsequent milestone RM15. Similarly, the intent of RM15(d) is to demonstrate a diverse vegetation structure, however the previous milestone RM12 does not establish this parameter as a surface requirement. Section 6.1.8.6 <i>Watercourse revegetation</i> of the PRC plan recommends hydromulching/hydroseeding is utilised to establish watercourse vegetation. Inclusion of this action as a milestone criterion at RM9 will facilitate achievement of surface requirements at RM12.	Provide a revised PRCP schedule that ensures the initial criteria represent a clear pathway to the achievement of the subsequent criteria.
14	Milestone Criteria <i>Consistency with previously</i>	Where appropriate, it is acknowledged that grazing milestone criteria revised through previous negotiation may be applied to subsequent schedules. It is recognised that the Wards Well PRCP	Where it is intended that milestone criteria proposed for RM10 and RM13 are consistent with

	<i>negotiated criteria (grazing)</i>	was finalised following the submission of the Red Mountain Infrastructure PRCP application. For example: • RMI PRCP: RM10(a) Preferred pasture (3P) % DM yield 10-60% - Wards Well PRCP: RM6(a) Preferred pasture (3P grasses²) % DM yield $\geq 10\%$ • RM13(e) should reference Table 19 of the PRC plan as the basis of the Land Suitability Assessment (LSA Framework for Open-Cut Coal Mine Rehabilitation 2018). This table is equivalent to Table RM7 referenced in RM7(f).	the previously approved PRCP schedule for Wards Well, provide an updated PRCP schedule.
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