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 proposed PRC plan.*

To: Round Oak Minerals Pty Limited
Level 32 10 Eagle Street
BRISBANE QLD 4000

ATTN: Gemma Brown

Our reference: EPML02840015; 101/0013762

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

1. Application details

The application for a proposed PRC plan was received by the administering authority on 28 July 2022.

The application reference number is: EPML02840015

Land description: Mining Lease (ML) 90241

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 outlined in Attachment 1 to this notice. Attachment 1 requests an updated progressive rehabilitation and closure plan (PRC Plan) be provided in response to this information request. It is recommended that a copy of Attachment 1, with an additional column to indicate where the PRC Plan has been updated is also submitted.

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 March 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 ESCairns@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 the decision is compatible with human rights.

If you require more information, please contact the department using the contact details provided below.

Signature

07/09/2022

Date

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

Enquiries:
Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Phone: (07) 4222 5334
Email: ESCairns@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
Spatial Data			
	Spatial data submission	No spatial information has been provided about the nearest sensitive receptors and the Rehabilitation Planning Part does not provide a map of the location.	Provide a shapefile showing the location of the nearest sensitive receptors.
Rehabilitation Planning Part			
	Section 4 Post Mining Land use Section 2.2.7 - Soil Section 4.1.3 – Considerations in determining PMLU	All three Soil Mapping Units of the site are discussed and despite fertility/nutrient issues the soils appear to have more than sufficient depth for PMLUs and the requirements specified in Table 6-6. The shallow soil resources are a major factor in determining the PMLU and the need to import soil is also discussed in the proposed PRCP. While the land suitability for the project area was determined to be Land Suitability Class 4 (marginally suitable for proposed use), the PMLU assigned Land Suitability Class 5 (unsuitable land with extreme limitations). Grazing has been carried out on the land within the project area in the past. It is unclear how Land Suitability Class 5 will support the PMLU of low intensity grazing. The same soil management units have been designated and distinguished as land suitability Class 4 in Table 4.2, and land suitability Class 5 in Table 4-3 in which grazing is unsuitable.	Provide an updated Rehabilitation Planning Part that demonstrates how a land suitability class 5 is suitable for the PMLU of low intensity cattle grazing.
	Section 4 Post Mining Land Use Section 6.1.1 – North and South pits.	It is unclear how the pit designs facilitate water storage and use for the PMLU. For example, the water level in the South Pit is more than 100m below from the pit rim.	Describe how the pit voids will achieve the PMLU of stock water storage considering the final design and dimensions of the pits as well as the location and design of the abandonment bunds.
	6.5.2 Waste Rock Dumps	Section 6.5.2 states that the WRD has been capped to be water shedding and a 5m thick NAF material barrier has been placed followed by a compacted rock layer of 500 mm nominal thickness. Section 6.5.2 later states a cover design was developed in 2022 based on trials and the preferred cover may have an unacceptable rate of seepage (PDF page 101). Figure 6-24 provides a *Preferred* cover design and shows a 1m thick layer of rock which section 6.5.2 describes as coarse waste rock. It is unclear how coarse	Provide an updated Rehabilitation Planning Part that includes: • Provide additional evidence (e.g. through representative sampling) that demonstrates 5m of NAF material is capping the WRD including on batters.

		waste rock will provide an infiltration storage layer. Section 6.5.2.2 indicates trials are being undertaken to determine cover system design. Hence, a final proposed cover system and nominated performance objectives are not provided. The schedule indicates the WRD is yet to achieve RMs1-4. RM5 which requires the installation of a cover and reshaping the WRD is listed as occurring after RM4 (surface preparation), is not proposed to commence until 2027 and is expected to take 5 years to complete. Further, criteria that reflect the installation of the cover system and associated monitoring infrastructure is not included. The rainfall and overland studies indicate that the cover material is very rocky, with very little sand, clay or organic matter present (Table 1, Appendix O). It is unclear if the cover material used in the study is meant to represent the surface layer (0.3m crushed waste rock) specified for the Trial 3 cover design. The studies demonstrated that the coarse nature of the waste rock resulted in no overland surface flows but with corresponding high infiltration rates. The trial used plots and flumes set at 20% gradients which do not mimic the steeper slopes present on the waste rock landform. No runoff was collected from plots during rainfall simulation and no rills developed during overland flow simulations. This resulted in no values for interrill erodibility, rill erodibility and critical shear being derived from the studies for use in WEPP. Trial 3 cover design involves a 0.3m layer of fine waste rock applied to the landform surface and overlying a 1m ISL of coarse waste rock which in-turn overlies a 0.3m RPL of fine waste rock. Preparation of the plots used for the study presented in Appendix O involved compacting waste rock material to a density of 1.5t/m^3 intended to reflect a trafficked landform. No information is presented in the PRC Plan to demonstrate that this reflects the likely compaction to be achieved on the landform batters (especially the angle of repose batter). Data presented in Appendix W indicates the Trial 3 cover design has a limited capacity to store infiltration in the ISL. Consequently, the low rates of overland flow and high infiltration rates demonstrated during the studies present some concerns regarding the ability of the capping layer and ISL to store sufficient water to support vegetative growth, and the potential for coarse waste rock in the ISL to continue percolation of water down to the RPL. Based on the information presented, there is a risk that water will infiltrate through the cover design, encounter the RPL and move laterally through the landform. Water could potentially express at the base of the angle of repose batter and cause heaving and failure of this batter where it meets the bench,or express at the base of the landform and cause failure at this point. This	• Provide further information to demonstrate the final cover system will achieve long term structural stability, considering the matters raised. This is likely to require additional overland flow and rainfall studies at higher gradients which better replicate the final landform to either demonstrate no rill development or to provide derived values for updated erosion modelling. Consideration should be given to whether WEPP is the most appropriate model to demonstrate erosional stability of this high-risk landform given that other models (such as SIBERIA or CAESAR-Lisflood) will model landform evolution, consider features or points on the landform which may become unstable and determine landform sustainability over long time periods. Include additional information to demonstrate the suitability of the cover design to support vegetative growth, which in-turn informs the erosional stability of the landform and integrity of the RPL. Provide an updated PRCP Schedule that: • Provides for the progression of milestones in chronological order, • Includes criteria to reflect the installation of the cover system and the installation of monitoring infrastructure.

		is compounded by concerns that the angle of repose batters will not be sufficiently compacted or trafficked by machinery during construction to ensure long term stability. Given the relatively shallow depth (1.3m) to the RPL and low water storage capacity of the ISL, there is a risk that vegetation will develop an effective root zone that encroaches upon the RPL and potentially impact on the RPL integrity. Appendix O also concludes that minor tunnel erosion may form as a consequence of the percolation of water through the landform, resulting in sediment discharges to the surrounding environment. Tunnel erosion is considered to present a high risk to the long-term stability of a constructed landform which encapsulates PAF material. The stability of the batters on the WRD have not been adequately demonstrated, given: • the low slope gradients investigated during the rainfall and overland flow studies, • the potential for tunnel erosion to commence, • concerns regarding the ability of the capping and ISL layers to support vegetative growth, • the potential impacts from plant roots encroaching on the RPL, • the failure of landform batters due to lateral movement of water through the landform, and • insufficient compaction of landform batters.	
	Appendix W: Cover Design – Waste Rock Dump Section 2.2 Cover column trials	Section 1.3.3 Waste rock dump cover system provides three (3) potential cover system designs incorporating waste rock, waste rock with added fines and clay (growth medium soil). Matric suction and soil water sensors were installed within the cover systems to monitor soil hydraulic properties and to generate input data for running the soil water flow model HYDRUS. A key outcome from the column trials and modelling was to evaluate cover design performance in terms of minimising expected seepage. Important information relating to these sensors were not provided such as: (a) calibration of the sensors over a range of waste rock/soil moisture contents to provide site-specific and waste rock/soil specific information; (b) installation protocol to demonstrate the sensors are installed correctly; (c) the relationship between water tension and moisture content measured in-situ to demonstrate this relationship covers the range of moisture conditions normally determined for the soil moisture characteristic (SMC). A comparison of the SMC for the waste rock and soil materials (Appendix E of the Report (Appendix W)) shows a disparity between the measured, in-situ data and that predicted by Fredlund and Xing (1994).	Provide details on the calibration and installation of the moisture tension and water content sensors. Provide the fitting parameters for the measured, in-situ data and for the predicted SMC. Confirm these parameters against published data and values generated by soil water retention software such as RETC.

		Section 2.2 HYDRUS modelling provides a description of the set-up and running of the one-dimensional (1-D) form of HYDRUS. This form of model can be used to simulate the laboratory-based column study but to realistically mimic field cover design, a two-dimensional (2-D) form of HYDRUS would be more appropriate. Information on the model set-up does not state (a) the upper (e.g. atmospheric, constant head, constant flux) and lower (e.g. free drainage, zero flux) initial boundary conditions; (b) constants for each material (waste rock and soil) that describe the hydraulic characteristics in particular the SMC and hydraulic conductivity (K(h)); (c) the actual infiltration and evaporation rates which are used to predict the water balance. The report states a potential evaporation rate of between 0.0045 and 0.0048 m/d and it is assumed this rate is constant over the model period. This is most likely not to occur as soil cover surface layer dries out and evaporation becomes water-supply limited. Other mechanisms should be used to better quantity evaporation losses within the model.	Provide the initial upper and lower boundary conditions used to run HYDRUS. Provide a better estimate of bare soil evaporation and its (seasonal) fluctuation over the simulation period.
		Section 2.3.3.2b Saturated hydraulic conductivity of the growth media is stated as 0.0004 m/day or 5.1 x 10^{-9} m/s. This is an extremely low value and is reflective of a highly compacted clay layer rather than growth media. This hydraulic conductivity would result in a very low rainfall infiltration and encourage runoff. Using this value, HYDRUS would be expected to predict very low seepage/drainage rates. Section 3.1.3 The composite waste rock sample was Class 3 indicating that remoulded waste rock (heavily trafficked) at the plastic limit will disperse in water. The simulations by HYDRUS have not accounted for this potential decline in infiltrability on cover performance evaluation. Section 4.1 Cover column trials shows capillary rise is unlikely to occur and how storage within the cover profile and seepage out of the cover base varies with time. Typically, the data is presented in terms of rainfall, evaporation, storage, and drainage as a function of time as this often clearly demonstrates when elevated water contents (low soil water tension) and drainage occurs in response to rainwater inputs over time. Presenting this data in graphical format will show the performance of each cover system in response to climatic conditions, and for comparing output from HYDRUS. Section 4.2 HYDRUS modelling compares outputs from the cover column trials with model prediction. The output from the column study and HYDRUS are not (a) directly compared in terms of variability in water balance parameters with time; or (b) statistically compared as a measure of model efficiency. A statistical	Provide reasoning and validation why the saturated hydraulic conductivity of the growth medium soil was set as 5.1 x 10^{-9} m/s and re-model the water balance using HYDRUS using appropriate values. Provide comment and model simulation outcomes on the potential decline in surface infiltration with aggregate dispersion. Present the cover column water balance in graphical format for each parameter (rainfall, evaporation, storage, drainage) as a function of time. Present the water balance predicted by HYDRUS in graphical format for each parameter (rainfall, evaporation, storage, drainage) as a function of time.

		comparison based on model efficiency will demonstrate how well the model assumptions and input parameters reflect that measured in the column study. Section 4.2.3 Water balance (Table 18) shows the major loss component of the water balance (measured and modelled) was evaporation (42-75% of rainfall). This conclusion has not been verified either experimentally (e.g. changes in soil moisture recorded by the moisture sensors) or through the assumptions on which HYDRUS was set up and run. The very low hydraulic conductivity of the cover materials would limit infiltration but encourage runoff. This water balance component was not considered in both the cover column study and in modelling.	Provide a graphical comparison of measured and modelled water balance outcomes. Provide a statistical comparison of model efficiency against the measured data. Provide a detailed discussion/interpretation of the water balance for the three cover scenarios, with supporting documentation from the published literature. If any assumptions or input data are found to not reflect the cover system design study, modelling is to be repeated and if possible use 2-D HYDRUS when applying outcomes to recommendations for waste dump design and performance criteria, particularly in terms of seepage rates.
	Section 4.2.3 Ancillary Infrastructure, roads and ROM Pad PRCP Schedule RA2 and RA3	The Rehabilitation Planning Part and the schedule indicates contaminated material will be removed from the ROM and infrastructure areas. However, it is unclear where this material will be placed. According to the PRCP Schedule, the WRD will be capped and assumed to be not available for additional waste disposal. The residual voids will be used for stock watering so the disposal of contaminated material is unlikely to result in the land being able to support the PMLU.	Provide an updated Rehabilitation Planning Part that includes information regarding where contaminated material from the ROM and infrastructure areas will be disposed. Provide an updated PRCP Schedule that considers the consequential timing of rehabilitation activities to achieve a stable condition.
	Section 4.2.2 Waste Rock Dump Section 4.2.3 Ancillary Infrastructure, roads and ROM Pad	Section 4.2.2 states the WRD sediment dam will be retained post closure. No information is provided regarding the ROM dam that is authorised in the EA. The water management section does not provide detail regarding the remedial actions that will be undertaken to remove contaminants and ensure the structure is suitable for the PMLU.	Provide an updated Rehabilitation Planning Part that includes information regarding how the dam will be decommissioned to achieve a safe and stable condition is not provided.

	4.2.3 Ancillary infrastructure, roads and ROM pad 6.5 Landform and cover design	The landform section does not provide designs of the final landform including the ROM, dams, safety bunds, roads and culverts. The final design, footprint and height of the ROM is not provided and it is unclear how it will be suitable for the PMLU of low intensity grazing. The design and location of the safety bunds is not provided. It is unclear how these bunds will interact with surface water flow and remain stable in the long term.	Provide an updated Rehabilitation Planning Part that includes information regarding: • the designs of the landforms to remain on site, • how the landforms are suitable for the PMLU and will achieve a stable condition.
	6.6 Water Management	It is noted that section 4.2.3 of the Rehabilitation Planning Part lists the infrastructure to remain. Figure 6-35 provides a map of diversions and culverts. A description, and designs, of the diversions and culverts are not provided. Figures provided in Appendix T indicate the conveyance of water under established haul roads is essential for the management of surface water. Appendix T also provides information regarding culverts indicated to have been installed. However, aerial imagery indicates culverts and associated erosion protection measures may not have been installed at the locations indicated in the figure. Section 6.6 states that diversions will be removed from North Pit East Creek and Sediment Dam Western Drain to facilitate inflows to north and south pits for water storage. Appendix P notes the potential conflict between the north east diversion and the safety bund and advises either the bund is constructed to allow water to	Provide an updated Rehabilitation Planning Part that includes information demonstrating that water management structures including culverts and diversions have been designed and constructed to ensure they will remain stable during high rainfall events and in the long term. Provide an updated Rehabilitation Planning Part that includes further information regarding the design and location of the safety bund around the

		flow through within the diversion or the base of the pit wall is buttressed with waste rock to allow the bund to be located closer to the pit crest. However, figures provided in Appendix T indicate the diversion will be removed and the proposed northern bund for the north pit is aligned to boundary of the area of "*potentially unstable pit edge zone*" which is 10m closer to the pit crest and potentially does not comply with industry best practice. Figure 002 of Appendix T indicates the velocity in this location may be >2.5 m/s and the depth shown in Diagram for is approximately 2.5 – 3.5 m. It is unclear whether water in this area will be directed into north pit or diverted by the safety bund. Appendix T indicates that without the safety bunds, surface water from large areas of upstream catchment will enter the pits potentially resulting in the pits no longer acting as groundwater sinks. Information regarding how the safety bunds have been designed to remain stable during extreme flood flow is not provided. Appendix T indicates that in some areas velocities of up to 4.7 m/second around the north pit levee and 5.9m/second predicted upstream of the ROM. Information regarding how the diversions have been designed to ensure they achieve a stable condition has not been provided. Section 6.6 does not provide information regarding how the dams will be decommissioned to remove contaminants and ensure a stable condition is achieved. The water management plan provided in Appendix M relates to the operation of the mine only. Section 6.6 and Appendix M do not consider or provide information regarding how water will move across the site during normal rainfall conditions after all rehabilitation activities have been completed.	northern pit including information regarding how it influences flood flow in the immediate area. Provide an updated Rehabilitation Planning Part that includes further information regarding the how the safety bunds are designed to remain stable during high rainfall events. Provide an updated Rehabilitation Planning Part that includes information regarding how dams that are to be retained for landowner use will be decommissioned to achieve a stable condition. Provide an updated Rehabilitation Planning Part that includes information regarding how water will flow across the site once all rehabilitation activities have been undertaken.
	2.2.6.1.1 Hydro geochemistry. 6.1 Hydrogeology Appendix Q Water balance and geochemical assessment of pits	Section 2.2.6.1.1 states that the water quality in the pits may become sulphate rich and of low pH but that they will be groundwater sinks. Section 6.6 again states that pits are groundwater sinks and the risk of mobilisation of contaminants is low. Appendix Q (summarised in section 6.1.1) provides the results of pit water modelling and states: • that water rapidly accumulates in both pits. • that while north pit is a net groundwater sink, it will overtop in rainfall events greater than the 95th percentile. • groundwater will move from north pit to south pit due to the difference in elevation between the base of the pits (approximately 80m).	Provide an updated Rehabilitation Planning Part that includes information demonstrating the structures to remain for water storage for stock watering will be non-polluting and safe.

		Appendix Q indicates the starting water level of the WRD dam is below the base elevation of the dam and that WRD dam spills each year. The modelling indicates there is the potential for release of contaminants from both the WRD dam and the north pit during high rainfall events. Appendix I provides the results of kinetic waste rock analysis and states that PAF is likely to take several years to oxidise and for acid generation to develop. Appendix Q provides water quality modelling for both pits and the WRD dam. It is noted that the mine ceased operation in March 2021 and by June 2022 approximately 9.5 m of water has accumulated in north pit and 20 m of water has accumulated in south pit. It is unclear whether this water has been pumped from the WRD dam or has accumulated from groundwater inflow. While section 5 states sampling was undertaken uniformly it is unclear whether samples were taken from surface water only. Tables 9 and 10 provide water quality results for both north and south pits. These results indicate that while pH remains circum-neutral, water quality is generally deteriorating over time and at times is elevated in fluoride, EC and sulphate. The water quality model does not recognise the potential for stratification or the potential for water quality to change in several years due to the oxidation of PAF material in pit walls (indicated by Appendix I) resulting in iron hydroxy species that can significantly influence pit water quality. The model also does not recognise the potential for water to seep from north pit to south pit resulting in elevated concentrations of contaminants entering south pit through groundwater recharge from north pit. Results for north pit indicate that the water quality may not remain suitable for stock watering. Many parameters included in ANZECC for stock watering are not modelled (including fluoride and EC). The conclusion for north pit provided in section 6.3.4 states that the results are not representative and it is expected that pit water quality would be suitable. Results for south pit indicate water quality will exceed ANZECC stock watering guidelines for TDS and potentially sulphate. Again, it is noted that the modelling does not include potential inputs from the oxidation of PAF material within the walls or the additional contribution of contaminants from north pit through groundwater recharge. No water quality modelling is undertaken for the WRD dam. Neither the Rehabilitation Planning Part or the PRCP schedule indicate that contaminated	

		sediment from the WRD during operation will be removed from the dam and water quality results provided in Table 11 indicate the potential for elevated EC (and potentially TDS by association), sulphate and fluoride. Information provided in Appendix Q demonstrates that water quality in both pits may not be suitable for stock watering in the long term, north pit may not remain non-polluting in the long term and water stored in the WRD dam may not be suitable for stock watering in the long term.	
	Section 6.9.2 – Geological stability and Appendix P	Section 6.9.2 provides a description of the abandonment bunds around the North and South Pits. It is stated that the abandonment bunds will be a combination of soil, gates, rocks and will restrict access to the landowner only. The abandonment bunds are further discussed in Appendix P which provides description of the requirements and design of the bunds. The report quoted Western Australian guidelines (DIR, 1997) to determine the setback distance for the bunds from the pit edge. The guidelines recommended 25° for weathered rock. However, the project adopted 30° angle based on measured slope morphology angles from topographic features adjacent to the pits. The DIR 1997 guidelines suggest the minimum dimensions should be 2m height on 5m base. It further recommended unweathered, freely draining, end dumped rockfill should be used. The information provided on the construction of the bunds does not sufficiently demonstrate that the bunds will be safe and stable and the materials used will not cause ongoing pollution. An additional buttress has been proposed to protect the northern pit wall and to prevent ingress of surface water into the pit. The location of the buttress was discussed in general term in the proposed PRCP.	Provide information on how the design and construction of the bunds meet the best practice and that sufficient setback distance has been provided allowing for any potential pit wall collapse. Provide information on where the bund will be located and demonstrate that it has been adequately designed to provide the stability to the north wall, as required to achieve a safe, stable and non-polluting PMLU.
	Section 8.2.1.1 – Analogue sites	The proposed PRC Plan refers to reference sites for comparison of milestone criteria for the areas to be rehabilitated to native ecosystem or grazing on native pastures. No detail has been provided for the location of the reference sites or their suitability as representative sites for the rehabilitation areas. Without specific locations and information regarding the characteristics of the reference sites, criteria in the PRCP Schedule are not measurable.	Provide information regarding the location of nominated analogue sites, their current condition regarding each of the milestone criteria that will be used for comparison and how the analogue sites are considered suitable for comparison.
	Appendix R – Risk Assessment	The risk assessment does not consider the following factors that are known to contribute to revegetation failure such as: • Poor seed quality, • Inappropriate seed mix used,	Consider the additional risks that could potentially impact on the ability to stable condition address in the risk management matrix.

	Risk Nos. 18, 19, and 20	• Seeding methods, • Insufficient insect treatment, watering or sheltering young trees, • Insufficient topsoil preparation, • Poor weed hygiene, • Fire, storm damage to young revegetation, • Topsoil handling and quality, and • Below average wet season rainfall or sporadic rainfall during establishment. Without appropriate risk mitigation strategies is it possible that rehabilitation milestones will not be complied with, the land will not achieve a stable condition and may not be suitable for surrender.	
	Rehabilitation Planning Part and PRCP schedule	It is understood that the project has ceased mining and rehabilitation activities on the WRD are proposed to commence in December 2022. However, the construction of the cover system is not proposed to commence until 2027 and only 5 years has been provided to achieve a stable condition. Further, the schedule proposes to undertake milestones 1-4 including surface preparation and placement of growth media before the cover system has been constructed. Similarly, the schedule for RA4 proposes that it will take 10 years to decommission infrastructure by which time, the WRD will have been capped and not available to disposed of contaminated material. Justification for this timing is not provided in the PRC plan and it is unclear how the proposed timing reflects the requirement for each milestone to be achieved as soon as practicable after the land becomes available (s126D(4) of the Environmental Protection Act 1994 and Step 7 of section 4.1 of the PRCP Guideline). The reference map indicates that the WRD dam is located within RA1. However there are no milestone criteria that clearly relate to the WRD dam and the works required to decommission the regulated structure to ensure it remains in a stable condition and can support the proposed PMLU. The rehabilitation planning part does not provide justification for the: • proposed timing of rehabilitation milestones, • proposed order of rehabilitation milestones, or • proposed criteria provided in each of the milestones and how they will achieve, or reflect, a stable condition.	Review and update the PRCP Schedule to reflect each milestone being achieved as soon as practicable after the land becomes available. Provide an updated Rehabilitation Planning Part that provides justification for the proposed timing, order and criteria proposed for each Rehabilitation Milestone.

PRCP Schedule			
	Milestone Criteria Generally	Suggest numbering the milestone criteria for ease of reference.	For ease of reference, use the following format for each criterion: 1. Criterion a. Sub criterion i. Further sub criterion.
	Rehabilitation Milestones	RM2 applies to each rehabilitation area including the pits and the WRD. Criteria for this milestone include the remediation or removal of all contamination. It is unclear how this milestone is to be applied to a permanent feature such as a WRD or pit. Further a criteria requires that the land be determined to be not contaminated. It is unclear how this will be possible for a WRD. RM3 does not appear to apply to the WRD dam that is included in RA1. It is anticipated that some land reshaping would be required to decommission the regulated structure (although this is not proposed in the Rehabilitation Planning Part). RM4 proposes that rocky growth media be used. It is unclear how rocky growth media is suitable for achieving a PMLU of cattle grazing. The timing of RM4 in relation to RA2 may not be in sequence with intended activities. RM5 does not include, or specify, the implementation of monitoring equipment necessary to demonstrate the objective of the cover system is being achieved and infiltration is not reaching the PAF material. As the cover is essential for ensuring a non-polluting landform is achieved, it should include representative sampling of capping material once placed to demonstrate it does not contain PAF or other contaminated material (Section 4.2.3 states that benign material from ROM will be used as either capping material or regraded and revegetated). Criteria requiring certification that the cover system is constructed according to the specified design is not included. It is noted this is the last rehabilitation milestone prior to achieving a stable condition. However, no criteria are included requiring revegetation and performance requirements for revegetation are not included. It is recommended that criteria be included similar to those recommended for RM7. RM6 indicates that a fence OR abandonment bund may be used to restrict access. Industry best practice is to use an abandonment bund and fencing and this is proposed in the Rehabilitation Planning Part. This milestone also proposes to transfer the voids to the landholder. As noted above water quality modelling indicates the void water may not be suitable for the PMLU in the long term. If voids were to remain for water storage then water quality parameters and values demonstrating suitability for stock water must be met and maintained for	Provided an updated PRCP Schedule includes criteria that reflect the rehabilitation methodology proposed in the Rehabilitation Planning Part and is required to achieve a stable condition. Provide an updated PRCP Schedule that include all water quality parameters and values necessary to demonstrate water in the pits and WRD dam meets ANZECC water quality limits for stock watering.

		significant period of time prior to transferring responsibility for the feature to the landholder. Many criteria in RM7 refer to analogue sites. A description and justification of analogue sites is not provided and therefore these criteria are not measurable. It is recommended that specific and measurable criteria be included that demonstrate the land is on a trajectory to achieve a stable condition including: • 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 surface water quality. • Absence of seepage expressing at the surface. RM8 only applies to water management structures that are to remain. There are no criteria relating to the levees and diversions: • Being vegetated, • Certified as conforming with design documents and functioning as designed, • Being stable and not showing signs of active erosion, • Do not alter the geomorphology of the receiving environment The second criteria in RM9 requires an assessment only and does not provide performance requirements necessary to demonstrate a stable condition has been achieved. Section 4.2.2 states the engineered cover system has been designed to prevent infiltration which could generate acidic conditions and mobilise metals. However, criteria reflecting this outcome have not been provided. The fourth criteria to demonstrate the cover is performing only requires review of data and does not require specific performance requirements which are the basis for the design. Surface and groundwater quality does not include all parameters necessary to demonstrate compliance with ANECC stock water quality limits. RM10 does not include criteria requiring the voids to continue to be groundwater sinks and does not include all parameters necessary to demonstrate compliance with ANZECC stock water quality limits. Criteria proposed in RM9 and RM11 do not provide many aspects required to demonstrate a stable condition has been achieved. For example:	

		• For RA2, specific habitat features are present and persisting to support native ecosystem, • For RA2, evidence that fauna is using native ecosystem and is not compromising the integrity of the cover system, • For RA2, 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, • For RA2, water and oxygen infiltration rates have been proven to be reduced to the extent (a nominated rate or %) that prevents oxidation and seepage, • Vegetation species required to support the PMLU are present (3P plants for grazing PMLU), 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, • 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, • Seepage is not present or expressing at the surface, • 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 (particularly down gradient from the pits and the WRD), • All slopes have been certified as being geotechnically stable, • Safety infrastructure has been constructed and is maintained, • All infrastructure to remain has been certified by an AQP as being stable and fit for purpose (including culverts).	
	RA4	The relevant activities nominated for RA4 do not reflect all the structures to remain and are nominated for RA4.	To remove uncertainty, ensure all water management structures are nominated in the schedule for RA4.