30 May 2023

Department of Environment, Science and Innovation - Coal Business Centre
PO Box 3028,
Emerald QLD 4720

By email: CRMining@des.qld.gov.au

Attention: Juliana McCosker; Priti Mahajan; Jessica Edgar

FOXLEIGH MINE – INFORMATION REQUEST NOTICE RESPONSE

On 1 September 2023, Foxleigh Management Pty Ltd submitted a PRCP (encompassing both the PRCP – Rehabilitation Planning Part and PRCP – Schedule) for the Foxleigh Coal Mine to the Department of Environment, Science and Innovation (DESI). DESI subsequently issued an Information Request Notice to Foxleigh Management Pty Ltd on 30 October 2023, requiring Foxleigh Management Pty Ltd to provide additional information to address identified potential issues within the submitted PRCP by 30 April 2024. An extension of one month was granted to 30 May 2024.

Attachment 1 provided with this letter documents Foxleigh Management Pty Ltd responses to the DESI Information Request Notice and is submitted together with a revised PRCP – Rehabilitation Planning Part (V2) and PRCP – Schedule (V2), which are intended to replace the originally submitted documents.

Yours sincerely

Andrew Boyd
Andrew Boyd (May 30, 2024 10:12 GMT+10)

Andrew Boyd
Managing Director

4.4	Contaminant of Concern (CoC), sources of contaminant of concerns post rehabilitation and the potential pathways onsite that may end up to surface water post closure. The Appendix I section 4.4 provides overview of surface water quality through the monitoring conducted insitu at four upstream control sites and three downstream impact sites, but the period of sampling for Table 6 is not clear. Overall, the PRC plan does not provide baseline water quality monitoring data, contaminants of concern (CoC), and potential pathways of contaminant post closure. The information is important as it helps to determine the water quality limits, suitability of monitoring locations to demonstrate the stability and non-polluting state of the final rehabilitated landform. [The section identifies the relevant waterways and their environmental values. Appendix I section 4.4 provides overview of surface water quality through the monitoring conducted insitu at four upstream control sites and three downstream impact sites, but the period of sampling for Table 6 is not clear.]	environment water quality monitoring data of minimum past 2 years . b. Contaminant of concern (CoC) based on the mining process and waste characterisation. c. potential sources/pathways of contaminant during the post closure phase (such as surface runoff from rehabilitated areas, flood water etc.) and mitigative measures.	reflects both insitu and laboratory data collected thr Environment Monitoring Program over the last four has also been provided in a new **Appendix S**. The ne includes tables of surface water monitoring results a levels b. **Section 5.9.1: Potential Contaminants** of the amend outline the potential sources of contaminants, and th contaminants of concern. **Table 5-14: Potential Cont Mine Landforms** identifies the monitoring paramete monitored as part of the Rehabilitation Milestones fo c. **Section 5.9.1: Potential Contaminants** of the amend intervention and management strategies that have b potential risks. **Section 7.4.5: Surface Water Monito monitoring parameters to be measured.
	Groundwater Monitoring Vibrating Wire Piezometer (VWP) bores and Alluvial Standpipe Monitoring (ASM) bore. PRCP Section 3.5.1, sub-section, 'Groundwater Use' states that the local groundwater monitoring network at Fox comprises of a vibrating wire piezometer (VWP) monitoring network and groundwater monitoring standpipes. The section includes Table 3-39 (later Table 8): Fox VWP Monitoring Network which provides details of vibrating wire piezometer bores, FPVWP01, FPVWP02 and FPVWP03 and FPMB01 (ASM bore). Appendix I on Page 24 explains that historically groundwater pressure monitoring has been conducted by using above mentioned three VWP strings installed in 2014. However, no data from VWPs or FPMB01 is provided in Appendix I. The 2016 AGE report, 'Foxleigh Plains Groundwater Monitoring and Management Plan' provides water level data for ASM bore (FPMB01) for the period from December 2013 to November 2015. It is not clear why data from the ASM bore is not presented in Appendix I or used in model calibration. This information is considered important as it provides some historical data. Further on Appendix I, Page 25 it is explained that there is significant uncertainty surrounding the data coming from the VWPs and this data has not been relied on to assess either regional or local groundwater levels or vertical fluxes between strata. Page 25 also states that in 2021 there were an additional thirteen new groundwater monitoring standpipes that were installed on site. Overall, it has been observed that there is lack of historical groundwater level data in the submitted groundwater assessment. The PRC plan section 3.1.3 or the Appendix I does not clarify which bores from the VWP network or the newly installed standpipe network form the functioning part of the site groundwater network. This information is important to determine the data reliability and determine that mine activities are non-polluting.	Provide an updated PRC planning part/Appendix I that includes – a. Clarification on which bores from Appendix I, Table 8 and 9 form the functioning part of the current groundwater monitoring network. b. Justify the inclusion of bores in the groundwater monitoring network based on their capacity to provide a useful dataset for groundwater assessment. Please provide this justification c. Analysis of adequacy of current GW monitoring network to monitor impacts of Foxleigh mining operation on environmental values (EVs) of GW.	a. Clarification of which bores form the functioning par network: • **Section 1.2.5.3 Groundwater Monitoring Netwo** Planning part, and describes the current monito • The Foxleigh Groundwater Monitoring Managen included as a new **Appendix U**. This plan was de the current monitoring program in consideratio areas. FoxMan is currently preparing a minor am of the GMMP – 23 within the conditions of the E • See note below for justification of the inclusion program. b. Justification of the inclusion of bores in the groundw • **Appendix U (GMMP-23)** provides the reasoning included, and also provides an explanation for w included in the ongoing monitoring program. c. Analysis of adequacy of current groundwater monito • **Appendix E of the GMMP-23 (Appendix U)** is a p monitoring plan. Note: Clarification of the relevance of FPMB01 for model • FPMB01 was drilled on 28/11/2013 from ground 15.14 metres below ground surface (mbgs), with and gravel pack between 11.9-15.1 mbgs in low as alluvium with a falling head test result indicat approx. 9E-09 m/s. Well development was condu and bailer over two days due to the very low rec monitoring between 8/12/2013 – 7/2/2014 indic events exceeding 20 mm (on four occasions) and mbgs (123.47 mAHD) (within the screened sectio • FPMB01 monitors alluvial groundwater perched due to its hydraulic disconnection from the Perm

	any discussion as to how mining has impacted groundwater levels and quality based on the groundwater monitoring data. To understand the impact over the period, water level plots (hydrographs) and quality time series plots of the contaminants of concerns are required for all monitoring bores to demonstrate how groundwater levels and quality has changed over time. This information is necessary to understand the contaminants of concern generated by the mining activities and to demonstrate risks posed to environmental values have been identified and will be mitigated during rehabilitation to ensure the land achieves a stable condition.	water. b. Hydrographs and quality time series plots of the contaminant of concern for all monitoring bores. Note: The hydrographs and quality time series plots should be accompanied by discussion as to whether any changes in the groundwater level or quality are the result of climatic conditions, mining, or other localised water use.	**Post-Mine Landforms** identifies the monitoring para groundwater that are monitored as part of the Rehal relevant RA's. **Section 7.4.6: Groundwater Monitorir** monitoring parameters to be measured. b. **The new Appendix T- Groundwater Monitoring Resu** contaminants of concern against the trigger levels de **(Appendix U)**. **Section 1.2.5.6 Groundwater Quality** amended PRCP to describe the quality characteristics
	Groundwater data in Table 7 Appendix I, section 6.1.1 states that Table 7: Regional groundwater monitoring bores lists the regional groundwater monitoring bores utilised to prepare a regional groundwater level plan. Many of the columns in Table 7 has been left blank and need to be populated with the specified information. A full data set is required to confirm that the regional groundwater level plan is based on comprehensive data and that the consultations drawn in Appendix I regarding the stability and non-polluting nature of the final landforms are reliable.	Provide an updated Appendix I that includes – a. Duly populated Table 7: Regional groundwater monitoring bores. b. A regional groundwater level plan as stated in section 6.1.1	a. Table 7 is populated in the new **Annex A – Groundwa Appendix I**. b. Refer to the new **Annex C – Supplementary Figures -** figure: Groundwater level contours for 1999 (Figure A Appendix I is a water table map based on data points mining condition and model steady state starting con presented in Figure 11, data available to plot pre-Fox are sparse and single-formation – no multi-level form Furthermore, in the absence of any contradictory evi sparse historical data available, the assumption has b condition, the groundwater pressures in underlying f hence hydraulic head in each formation/unit equals t Note 1: **Section 1.2.5.5** of the PRCP has been updated to groundwater levels, in addition to water level data collect collected over the last 3 years. Note 2: The RFI questions relating to the Groundwater Fu report from the initial submission of the PRCP have been **Appendix I** has replaced the original report.
	Groundwater quality Appendix I, section 6.1.2 has Table 8: Foxleigh VWP network and Table 9: Foxleigh groundwater monitoring network which provides information on the location, elevation, total depth of the monitoring bores and the targeted formation by each bore but does not provide information on the quality of groundwater monitored at these bores. Appendix I, section 6.3 provides a summary of the monitoring of field water quality conducted at thirteen bores installed in 2021 (refer Table 12: 2021 GWMB field water quality summary). Overall Appendix I or PRC plan does not provide a groundwater quality monitoring data log that can help determining a trend in groundwater quality.	5.1 Provide an updated Appendix I that includes – a. Bore specific onsite background groundwater quality and level data for standpipes P1-P12 since 2021.	a. A new **Appendix T- Groundwater Monitoring Result** collates the results of groundwater monitoring collec Monitoring Management Plan (attached as the new A Management Plan also includes the historical dataset results collected at Fox, and also includes a discussio Note: The faulted synclinal geological structure present in limits any potential for off-site groundwater level or quali therefore ongoing monitoring of P1 – 12 bores has been r data sourced only from P8. Justification for which bores a made within the document (Appendix U). The purpose fo create the PRCP Groundwater Model (as per Appendix I).
	Model Calibration Appendix I Table 21: Calibration target sites provides location coordinates for the 17 bores used in the steady state calibration and very limited data has been provided in the report for these bores except for P1, P12 and P2. This information is required to provide support for the steady state pre-mining modelling	Provide updated Appendix I that includes following – a. Updated Table 21 in addition to location co-ordinates showing depth, target	a. A replacement Appendix I has been attached to the P - Table A1 as the replacement Table 21. b. Annex C - Figure A1 is the map showing the location bores.

section 11.4.1 is not provided in Table 29.

Appendix O, section 3.5 states that maximum groundwater inflow rate to each void as shown in Table 3-4 is used as the input for the GoldSim model. It appears that 'Maximum Flow Rate values' in Table 3.4 are based on Appendix I Table 29. A comparison is shown in below table supporting the assumption that GoldSim model in Appendix O likely to be based on maximum inflow rate to each void considering the bottom depth level rather than a Flux (range of inflow over time).

	Appendix I: GW Modelling report Table 29		Appendix O: Final Void Hydrology Report Table 3.4
Pit Name	**Bottom of pit (mAHD)**	**Maximum Flow Rate (L/s)**	**Maximum Flow rate (L/s)**
Far South	70.50	0.16	0.16
WC	119.54	3.60	3.6
Eagles Nest	--	10.56	10.56
Carlo Creek	56.94	0.48	0.48
One Tree West + Pipeline	-13.78	5.50	5.5
Foxleigh Plains North	40.46	18.02	18.02

It is noted that the void water levels will change over time considering the direct rainfall, surface runoff input to the void and evaporation. Accordingly, the groundwater inflow rate may change over time corresponding to the fluctuating void water levels and that change/flux needs to be considered for void hydrology modelling.
Hence it is important to understand if the modelling is based on a groundwater flux or maximum groundwater inflow rate as this will determine the predictions of long-term water levels in the voids

b. If not, provide updated modelling results based on the groundwater flux consideration.

any modelling with lower flows would have produced
the presented outcomes are "worst-case". Refer to n
and justification.

Note: The word 'flux' is used in Appendix I to mean a con
continuous, may be unchanging in magnitude in relation t
consideration) (Merriam-Webster definition), whilst the w
continuous state of change. It is inferred that DES is interp
meaning. In the sense used in Appendix I, the relevant da

Appendix O (WRM) Table 3.4 aligns correctly with Append
the initial model iteration fluxes (using the meaning of the
used to derive an interim void lake level which is used in t
modelling to compute void lake level-dependent groundw
fluxes in App I).

Temporal influences on groundwater fluxes / inflow rates
indicated in IP7.2 above, the groundwater inflow maxima
by WRM as per WRM Table 3.4, comprised inputs to the i
balance modelling to determine final pit lake level. Subse
and groundwater flow modelling used lesser groundwate
hydraulic gradients.

	developed using the bores marked in green only. More explanation of how this map was developed is required. This information provides confidence in what is actually being presented with these contours and how that supports the overall assessment. In addition to Figure 12 the following map/figures are required – The steady state groundwater level elevation contours providing the starting point for the transient calibration. Predicted groundwater level elevation contours for all major model layers (including those representing targeted coal seams) for the end of mining period and post closure period. The above contours are important to understand the relationship between the predicted long term groundwater levels in all units that could be connected to the voids and the predicted long term water levels in the voids.	. • The steady state groundwater level elevation contours providing the starting point for the transient calibration. • Predicted groundwater level elevation contours for all major model layers (including those representing targeted coal seams) for the end of mining period and post closure period.	starting point to simulate more recent historical precursor to prediction of groundwater respons multiple sources of data have been compiled to water table characteristics. • These sources have included information obtain monitoring bores (**Table 7 – Annex A - Appendix** historical standpipe (**Table 8 - Annex A - Append** installed' monitoring network (**Table 9 - Annex A** • When compiling these spatially and temporally c hydrogeologically discrete (fault/thrust-bounded aquifer) units, we have considered the probable contemporary mining activities and the plausible reflecting interaction with surface drainage netw structure. • Contours are based on **Annex A - Appendix I Tab** bores P1, P2 and P12. Tabular data presented in **Appendix I**. b. Additional figures have been compiled. Refer to the r **Figures – Appendix I** for maps prepared illustrating: • Groundwater level contours for 1999 (Figure A1) • Groundwater level contours for end of mining (F • Groundwater drawdown in various model layers • Groundwater level contours for post closure (qu A13)
arch gy	**Predicted long term water levels.** Section 4 of the Appendix O provides a lowest regional groundwater level measured at all voids as 122.5 m AHD. This level is used to compare predicted long term water levels in all pits to determine if the void will be a sink or source. However, there is no justification provided for the use of 122.5 m AHD to represent long term groundwater levels, in all geologic units in contact with all voids. Additional groundwater elevation contours (refer to item 8) are required to demonstrate a realistic long term groundwater level elevation adjacent all voids and provide confidence in the long-term groundwater levels used to determine sink or source predictions.	9.1 Provide updated Appendix O that includes – a. Justification for the use of 122.5m AHD to represent long term groundwater levels, in all geologic units. b. The above justification needs to be in consideration with the additional groundwater elevation contours that are requested in above Item 8.	a. WRM has not based the model outcomes on the 122 been used as a reference point in the Appendix O gra balance model uses inflows of surface water and GF- together with evaporation and rainfall etc, to calcula mining groundwater level of 122.5m AHD was selecte modelled groundwater levels at the time of writing o level is considered conservative in nature as it repres lake could be considered a source.level deemed mos drawn **Figure A1 – Annex C – Appendix I** contours ha mining groundwater contour for each of the voids, a **Table 5-22: Modelled Void Water Levels** – of the am the results from Appendix O and Appendix I, to show voids being a grondwater sink is still valid when comp levels at the location of each void, rather than a mor groundwater level. b. In the absence of pre-mining groundwater monitorin modelled heads have been used to infer the pre-min **– Annex C – Appendix I**). This assumed pre-mining gr influence predicted mining impacts on the modelled conservative trigger for the determination of void sir

Void	bottom of pit/ floor level (m AHD)			long term median void Water Level/ modelled average (m AHD)		
	App. I, Table 29	App. O, Table 4.1	Discrepancy	App. I, Table 30	App. O, Table 4.1	Discrepancy
Eagle Nest	Not provided	-104	**?**	98.3	41.5	**56.8 m**
Foxleigh Plains	40.46	-130	**170.46 m**	48.3	71.6	**23.3 m**
One Tree West	-13.78 (includes pipeline)	-29	**13 m**	71.7	47.7	**4 m ?**
Pipeline	above	-43	**NA**		67.4	**NA**
WC	119.54	-15	**134.54 m**	42.6	42.8	**Nil**
Far South	70.5	70	**Nil**	81.6	81.3	**Nil**
Carlo	56.94	86	**29.06 m**	44.4	105.6	**61.2 m**

b. Updated Table 4.1 and accordingly updated prediction of residual void behaviour.

"Commentary on discrepancies in modelled void" - re-modelling is not considered necessary to address the original Appendix I Table 29 and Table 30 has bee in **Table A4 and A5 -Annex B – Appendix I**, with inclu

b. Table 4.1 – Appendix O has been updated in the new in the provided pit shell data for Eagles Nest as there that went very deep. Eagles Nest should be -65m RL information of the maximum depth in the pit shell da modelled peak long-term water level.

Void salinity

Table 3.3: Adopted salinity concentration from section 3.4 indicates that a salinity of 55,000 mg/L has been adopted for the water balance model configuration. The 55,000 mg/L salinity concentration appears to be significantly higher than the figures presented in section 6.3 of the Appendix I: GW Modelling Report.

Appendix I, section 6.3 states average electrical conductivity (EC) of 55,000 µS/cm for alluvial formation and same section, Table 12: 2021 GWMB field water quality summary shows a range of EC of 32,073 to 42,765 µs/cm for the various formations.

Based on a conversion from EC to TDS of about 0.67 the range of figures in Appendix I, Table 12 convert to 21490 mg/L to 28,650 mg/L and the 55,000 µs/cm quoted in the text converts to 36,850 mg/L. All of these figures are considerably lower than the 55,000 mg/L used in Appendix O.

Further clarification required to justify use of 55,000 mg/L salinity in Appendix O for water balance model configuration.

11.1 Provide updated Appendix O and PRC plan that includes –

a. Justification for use of 55,000 mg/L salinity to represent groundwater in the water balance model configuration when the data in Appendix I shows lower salinity range.

a. **Appendix O** (WRM) has been amended to fix the erro salinity units. Salinity used was meant to be EC of 55, to 36,850 mg/L. See the amended **Table 3.3 - Appen salinity – Appendix O** presents the recalculated salin

	modelling considers water losses will only occur due to evaporation. No consideration to horizontal permeability through the void wall below the water table into the surrounding geology is given in the model. If hydraulic connection between the void and adjacent geology exists, the potential for salts moving outside the void into the surrounding groundwater, albeit via molecular diffusion (Fick's Law), also exists. Migration of extremely high salinity out of the void would deem the void as a contamination/pollution source and thus not a safe, stable non-polluting NUMA.	b. A mitigative measure to eliminate potential of high salinity void water interaction with surrounding groundwater systems, such as backfilling above the regional groundwater level for voids with high risk of potential interaction with surrounding groundwater system.	b. It is not proposed to alter the planned closure metho considered that there is a risk to the surrounding gro modelled void water bodies, as they are predicted to perpetuity. Note: The consequence of hydraulic connections betwee pit wall geology have been considered in the Groundwate Horizontal hydraulic conductivity is the predominant mod movement of water between the strata and the void or p described in **Sections 9.7.3 and 11.4.2 of Annex A - Appe** multiple model layers and at multiple circumferential loca of groundwater flow in relation to pit lakes. All tracking in groundwater, irrespective of velocity, is toward the simula macro-scale that no contaminated pit lake water is likely t environment. Whilst the geological and hydrogeological data are not av flow on a geological bedding or stratum-scale and it is not magnitude to acquire the density of data necessary to fac may reasonably be made concerning the behaviour of gro have been subsumed into hydrostratigraphic units in the Model layers 4-13 represent the mined Permian strata as **Appendix I**, with the rationale for differentiation into the described in **Section 8.2. Void– Annex A, Appendix I** (Zon conductivity (3-6 orders of magnitude greater than the Pe juxtaposes. RCM coal seams mined at Foxleigh exhibit hig interburden measures and are assigned in this model as la 1-2 orders of magnitude greater conductivity than juxtape where hydraulic gradients drive groundwater from Permia predominant flow occurs in the coal seams. Subordinate f interbeds but there is not a physical mechanism that wou flow directions of coal seam flow to the void and interbed With predominant groundwater flow occurring towards th advective velocity will exceed the rate at which salt ions m walk in the opposite direction.

	The PRC plan indicates that the proposed grazing PMLU will be based on land class 4 and is partially consistent with EA Appendix 2 completion criteria which states land class 4 as an optional completion criteria for 'Areas where agricultural land use applies'. The Agricultural Land Evaluation Queensland Guideline (Second edition) classify land class 4 as a land with severe limitations and unable to successfully sustain a use of land. Hence the proposed land class 4 may not be supportive of proposed cattle grazing PMLU. Appendix K: Geochemical characterisation of waste material in section 4.2.2 have identified the soil types found within the Foxleigh mining lease as Chromosols (45%), Sodosols(20%), Arenosols (20%), Anthroposols (12%) and vertosols (1%). Further the section states, 'only Arenosols are considered good growth medium able to support both grasses and trees, with the remaining soil types supportive only of native grass/vegetation.' It is unclear – a) why an alternative land outcome such as Native Ecosystem as stated in the EA Appendix 2 has not been considered; and b) how proposed unsuitable land class will sustainably support the proposedPMLU of grazing.	criteria that ensures the rehabilitation land will achieve following: • Land suitability class of ≤3 as per Agricultural Land Evaluation in Queensland (Second Edition) guideline and; • The rehabilitation planning practices for grazing as a post-mining land use[1] as published by the Queensland Mine Rehabilitation Commissioner Or An alternative PMLU such as Native Ecosystem. This should include a rehabilitation methodology and SMART criteria (Example: BioCondition Framework*) for the Native Ecosystem PMLU. 1 https://www.qmrc.qld.gov.au/research/post-mining-land-uses/grazing	documents related to rehabilitation and closure outco regulatory authority gives continued approval for implem LODs describe a pre-approved land outcome at Fox of lov suitability. • EA-Appendix 2 -Rehabilitation Requirements • Rehabilitation Management Plan (submitted to D • Environmental Management Plan drafted in 28/ • Environmental Management Overview Strategy 2003. • EIS Assessment Report (dated 12/04/2001) **Section 1.3** and **Section 3.1.1** of the amended PRCP repro these LODs, as they pertain to the pre-approved land out The "*Rehabilitated mined land suitability for beef cattle g Technical Paper* [1]" (Short, 2023) notes that: *Commercial grazing opportunities (i.e for profit) rehabilitation can be grazed in conjunction with seasons (never in drought), for relatively short pe* The technical paper further notes that it will require caref grazing, and the stocking rate for the area, to maintain lar land and water degradation. As per agreements with the previous landholders of Fox, is to support a grazing platform grazed in association with eg. for "low-intensity" grazing for short periods of time as in keeping with the reference above (Short, 2023).
A) 3.4	**Community Consultation** In terms of assessing the proposed PMLU's (grazing, watercourse and native ecosystem corridor) against the outcomes of community consultation, section 3 states, 'Achievement of the identified PMLU's (grazing, watercourse and native ecosystem corridor) is in line with consultation completed to date.' The "Fox Consolidated Consultation Register" presented in Table 3-30 contains limited information on the outcomes of community consultation in regard to developing post mining land uses for the site, particularly post 2013. Therefore, it is not clear whether recent changes to the PMLU's (approved via major amendment in August 2023) for site are consistent with the prior consultation. This information is important to understand the extent of proposed PMLU and NUMA aligning with the community expectations and required as per section 126C(1)(d) of the EP Act	14.1 Provide an updated PRC planning part that shows that the proposed PMLU and NUMA are consistent with the outcome of community consultation.	Since FoxMan commenced operations at Fox, ongoing cor with stakeholders who hold a genuine interest in the land and operational performance, and outcomes, as outlined PRCP. These have included, neighbouring landholders, the Commonwealth government agencies, and LGA Council m **Section 2** of the amended PRCP has been updated to bett stakeholder engagement post-2013. **Section 2.2.2: Stakeh** PRCP process includes a summary of the topics addressed The pre-approved PMLUs, where applicable, are consisten the local area and are strongly supported by the commun consultation to date on these PMLUs has resulted in: • No queries or issues with the PMLUs have been other members of the local community to date; • No queries or issues with the PMLU have been r stakeholders.
	Strategies or plans for the land of a local government, the State or the Commonwealth Section 3.3 does not give consideration to whether the proposed PMLU is consistent with any strategies or plans for the land of a local government, the State or the Commonwealth as required per s126(1)(d) of the EP Act.	15.1 Provide an updated PRC planning part that– a. State the extent to which each post-mining land use for land identified in the PRCP schedule for the plan is consistent with any	**Section 3.3** and **Section 4.2** of the amended PRCP have be to which each PMLU or NUMA for land identified in the P consistent with any strategies or plans for the land of a lo Commonwealth.

	The PMLU for the undisturbed area has not been defined in the spatial files and PRC plan (e.g. final site design map). (Refer to the red bordered area in below image which shows approximate extent of undisturbed Foxleigh mining lease area).		
	Retained Infrastructure PRC plan section 3.1.9 states that an area totalling 745.518ha of infrastructure is to be retained in accordance with the landholder statements. The landholder statements are supportive of retaining access roads and tracks post mining. The PRC plan nor the spatial data provide a map showing the exact location and details of the infrastructure to be retained . The PRCP schedule RM1: Infrastructure decommissioning and removal, milestone criteria states that, 'sumps or dams that do not form part of final landform as sediment control structures dewatered and contaminated silt removed, this raises a question if there are in dams/sumps/water structures that likely to be retained post mine and if so what the associated PMLU is. The PRC plan also does not clarify if any rehabilitation steps apply to infrastructure to be retained to ensure it is safe, not cause environmental harm and stable for the purpose post closure.	17.1 Provide updated PRC plan that includes – a. Clarification on which infrastructures to be retained onsite post mine and associated PMLU. b. A map showing the exact location of infrastructure to be retained. c. Any rehabilitation steps that are required to ensure retained infrastructure is safe and stable for post mine use. d. A spatial file showing a separate polygon for infrastructure to be retained and associated PMLU.	a. To clarify which infrastructure will be retained onsite amended PRCP outlines the PMLU of retained infrast agreements for the retention of infrastructure with u landholders. These agreements cover the retention c • Bitumen based roads which require little ma or • Roads made of benign alluvial materials whi are also non-polluting and stable. Pre-existing infrastructure on easements that cross th post-mining: • the Barwon Park–Middlemount Road easem • BMA water pipeline easement; b. A map showing the location of infrastructure to be re amended PRCP – ***Figure 3 4 Retained Infrastructure*** c. The new RM12 Achievement of post-mining land use Infrastructure PMLU) has been created (see RFI 38) v (as outlined in ***Table 5-25: Rehabilitation Milestones*** PRCP). In addition, monitoring methods, contingency records and documentation required to demonstrate amended PRCP Appendix V: Demonstration of Milest d. The new Retained Infrastructure PMLU and the new been included in the updated schedule and spatial fil NB. there is NOT 745.518ha of retained infrastructure included infrastructure areas for rehabilitation. Areas of l area of the PRCP that are being allocated to Landholder up to 176.38 ha. This includes: • 86 ha of Foxleigh retained infrastructure (ie re landholder agreements. • 63.76 ha has been calculated to lie within the 24.45 ha has been calculated to lie on "undistur • 16.65 ha apportioned to the BMA pipeline within

	Table 3-58: Fox available topsoil/Growth Medium shows that there's a surplus topsoil available on site as per the 2022 Topsoil inventory. The PRC plan (at page 126) states topsoil application depth ranging from 150-200mm and a rehabilitation trial indicating 150mm topsoil depth supporting decent vegetation. The PRC plan does not clarify the following – • Since the site has surplus topsoil, why topsoil application depth of up to or more than 200mm is not proposed at-least for areas prone to erosion risk. • How does the dispersive nature of soil support the proposed minimum topsoil application rate of 150mm for a self-sustaining, stable PMLU • Has a target range of growth medium nutrients identified to support a self-sustaining PMLU. The above information required for determining SMART rehabilitation criteria for surface preparation rehabilitation milestone in PRCP schedule. The above information required for determining SMART rehabilitation criteria for surface preparation rehabilitation milestone in PRCP schedule.	Dump slopes, top of the dump, infrastructure etc.) b. Justification how the above-mentioned domain specific topsoil application rate supports achieving the self-sustaining and stable PMLU. c. Target range of growth medium nutrients in accordance with the relevant PMLU (Cattle grazing/Native Ecosystem).	Section 5.3.4.3 also identifies which RAs would be sp sufficient surplus was able to be salvaged. b. Rehabilitation trials at Fox (*2021 Rehabilitation Trials* Mine, 2022), and rehabilitation Inspections (*Historic – Engeny 2021)* have indicated that a minimum of 15 vegetation. However, where a topsoil surplus has be be directed to rehabilitation areas RA6, RA7, and RA5 as they hold the greater propensity to erosion. c. The milestones outlined in Section 5.10.1 of the ame and suitability assessment to be completed by a AQP within a rehabilitated landform. The assessment requ exchangeable sodium potential, electrical conductivi quality is suitable to achieve the relevant PMLU. For all PMLUs within RM7 – Achievement of surface r been included within the amended PRCP requiring so undertaken at 12 months and 5 years after the comp where required) requiring the following parameters t mine land suitability: • Plant Available Water Capacity (PAWC); 30 - • Bicarbonate P (at 0 -10cm depth); 4 - <8 mg/ • Electrical Conductivity (1:5 dilution) (in the r dS/m . • Soil pH as measured at any part of the root z • Exchangeable Sodium Percentage (ESP%) (a • Slope <10%, ESP <14% • Slope >10%, ESP <6%
	Amelioration Section 3.5.8 (page 126) states that topsoil will be ameliorated with gypsum due to the dispersive nature of topsoils available on site to provide greater stability of soil organic matter. The section proposes a gypsum application rate of 15t/ha and fertiliser application rate of 0.2t/ha based on soil sampling results in accordance with Appendix K. The PRC plan nor Appendix K clarify how the proposed gypsum and fertiliser application rate supports the topsoil to achieve the required nutrient level supporting grazing or native ecosystem PMLU. The plan does not specify targets for total nitrogen, phosphate, organic matter and ESP. Further information is required to ensure the appropriateness of the milestone criteria.	19.1 Provide updated PRC plan that includes – a. Explanation on how the proposed gypsum and fertiliser application rate was derived. b. b. Topsoil amelioration based on nutrient targets mainly for Total Nitrogen, Phosphate, Organic matter and ESP.	a. **Section 5.3.4.4** of the amended PRCP has been upda proposed topsoil to best determine the specific appli fertiliser. The previously stated rate of 15 T/ha of gyp maximum rate of application, as it is recognised that require such a high rate. The fertiliser rate of 0.2 T/h rate to allow for extra application for poorer fertility milestones outlined in **Section 5.10.1**, these applicati have been included. These practices are in keeping v rehabilitation practices and will ensure topsoil in suit requirements. b. Rehabilitation management practices and milestone require an AQP to determine amelioration requireme placement on a rehabilitated landform. Furthermore added to RM7 to reach PMLU.

significant impacts on surrounding native remnant vegetation. The rationale and source for selection of the particular grass species from Table 3-59 is not provided in the PRC plan.

It is noted that Appendix K, section 4.2.2 states that 'the site comprises of mostly Chromosols (45%), Sodosols (20%), Arenosols (20%), Anthroposols (12%) and Vertosols (1%). Out of above only Arenosols are considered good growth medium able to support both grasses and trees, rest all supportive only of native grass/vegetation'.

Considering the soil characteristics, it is not clear why the proposed seed mix includes predominantly non-native and invasive grass species. This information is important to determine the self-sustaining and non-polluting nature of the final landform.

Indian Couch *Bothriochloa pertusa* or *Seca Stylosanthes* spp.

combination of species cognisant of grazing best manage 2022).

Alternative palatable native grass species will be consider if successful may be added to the standard seed mix.

Data Discrepancy

Section 1.3.2 of the Appendix H shows a NUMA summary considered for flood modelling. The catchment and surface area shown in Table 1.1 of the Appendix H differs to EA Appendix 4: Approved Residual void surface area.

Pit Name	EA Appendix 4: Approved Residual Voids(Ha)		Appendix H: Table 1.1 NUMA Summary (Ha)	
	Total NUMA Area	Void water body surface area	Catchment Area	Surface Area
Eagles Nest	187.3	92	356	283
Fox Plains	185.5	101.9	631	276
One Tree West	93.8	48.9	230	142
Pipeline Pit	89.3	37.8	170	89
WC Pit	74.6	20.9	136	105
Far South	54.0	21.2	124	67
Carlo	45.8	23.1	167	51

It is not clear if the discrepancy is a typo error or has a rational behind it. Clarification required as the change in NUMA area may impact the flood modelling outcomes.

21.1 Provide updated PRC plan/Appendix H that includes:

a. Clarification why the catchment and surface area in Table 1.1 of the Appendix H differs to the EA Appendix 4: Approved Residual void surface area.
b. If required update the flood modelling according to residual void area stated in the EA Appendix 4.

a. The flood study (Appendix H) catchment area of each it includes land surrounding the void that drains into of the voids (shown in the original Appendix H Table and therefore the actual NUMA hectares is smaller th "void water body surface area" is a smaller area insid flooded void. **Figure 5-18** in the amended PRCP illust area and NUMA area. None of these stated areas for and the NUMA summary statistics were provided in A reference to indicate which voids were included in th table has been amended to include the areas stated from the 'Final void hydrology report' dated 08/04/2 Environment Pty Ltd).
b. The flood modelling was not required to be updated surface areas. However, the flood modelling was red protection landforms in place. An amended Appendi Planning Part.

Stream Gauging Data

Section 3.3.2 of the Appendix H states, '*All the stream gauging station rating tables do not extrapolate high enough to provide flow estimates for the January 2013 event.*' In this case following is not clear –

- If the absence of ability to extrapolate high enough flow data affects the reliability of the model output.
- Can other "minor" rainfall events be used to demonstrate the predictive reliability of the model. For example, can less intense rainfall and baseflow be used in the calibration process?
- Can this predicted flow be statistically compared with measured data as a means of supporting the model outcomes such as those presented in Figure 3.4;

22.1 Provide updated PRC plan/Appendix H that includes:

a. Flood assessment outcomes despite limitations of the input data

a. No change to the modelling inputs to the flood study not considered that it would make an alterable differ However, **Section 3.2.5: Stream Gauging Data, and 3 H** has been updated to further clarify and justify the absence or ability to extrapolate the rating curves to common limitation of most flood model calibrations this into account. The January 2013 flow event in Ro density or records, of which was a key focus of the m design hydrology results from the calibrated model w peak flow estimation techniques which reaffirms mo design event simulation and the assessment of flood

	Understanding the impact of flooding in the event of diversion failure is required to understand long term site and landform stability specially the rehabilitated TSF area considering its proximity to the creek.	diversions fail.	creek diversion or flood protection landform Therefore, flooding does not pose a stability ii. S**ection 5.3.2 - Appendix H** has been update creek diversions, and as to whether they ca criteria of flood velocity, stream power, and the diversions took all of these things into a scenarios, the flood extent is well beyond th creek diversions. iii. Section 5.3.3 of Appendix H has been added of the flood protection landforms to ensure the event of a flood
	Flood flow velocity modelling Section 6 of the Appendix H states that flood flow velocity modelling indicates rates of >3.5 m/s for 0.1% AEP and PMF. Erosion potential at these velocities (with vegetation cover) are considered possible, but the magnitude of erosion and its impact on final landform stability and maintenance needs more detailed information. Flow rates of >3 m/s have the potential to erode particularly when flowing water is in contact with erodible soil materials. It is noted that PRC plan section 3.5.4 and Appendix K states the soil quality as dispersive, hence prone for erosion. It is also noted that proposed PMLU for the site predominantly is cattle grazing, and the section 6 of the Appendix H suggests overall risk of erosion from flooding in absence of long-term well-established vegetation.	24.1 Provide updated PRC plan/Appendix H that: a. Demonstrates the final landform stability under extreme rainfall events and considering the relevant PMLU/Native Ecosystem.	a. **Section 5.3.2.4: Flood Risk Profile** of the amended PI landform erosion risk from flooding. In addition, see relevant Milestone criteria that address this risk. Wi has been updated to require rock mulch (>200mm) a of flow concentration such as drains, landform depre peak flood velocities are greater than 2 m/s. The mile protection for the final landform under extreme rain Note: Flow velocities >3.5m/s in the 0.1% AEP and PMF e creek channels and occur in the pre-mining scenario. Velo landforms are predicted to be much lower as shown by th H.
	Water Diversions The PRC plan section 3.5.7 provides information on water management including diversions. Page 120 the PRC plan states that, 'Management of the Cockatoo Creek diversion will incorporate subsoil amelioration with gypsum'. It is not clear if the section means to refer to subsoil or topsoil. The addition of gypsum suggest dispersive soil material which is supported by the findings in Appendix K: Geochemical Characterisation of Waste Assessment in regards to soil characteristics. As the addition of gypsum is a temporary solution, its application to soil that is used to construct permanent diversions raises a question on the long-term stability of the diversion. It is noted that the PRC plan does not identify the soil types used in constructing the diversions. The Appendix R: EIS statement assessment report (page 1252 of the PRCP) states, 'there are ongoing issues at the existing operation related to the highly erodible nature of the on-site materials used in existing flood and surface water diversion levees and cracking zones at the top of pit walls.' Information on soil materials used in constructing the permanent diversions is required to understand long term erodibility and diversion stability.	25.1 Provide updated PRC plan that includes: a) Clarification on use of gypsum for soil that is used in the construction of diversion and the role it plays in the long-term stability of the diversion. b) Mitigative measures/alternative resources considered for diversion construction that can enhance the long-term stability of the diversion. c) Details on construction materials used in permanent diversions and how the construction material supports the longterm stability of the diversion post closure.	a. The paragraph relating to gypsum, topsoil and the cr included without adequate context, and has thus bee excess of subsoil removed during construction of the this material was stockpiled, and it was noted that if would likely need gypsum amelioration. As this parag management it has been deleted. b. On review of the rest of section "Creek Diversions an Requirements" in the original "Section 3.5.7: Water M reflect the required content of this section in the PRC 5.3.7.4) has been edited (refer to the PRCP tracked c • The monitoring programme of the water diversio **Section 7: Monitoring**, under **7.4.7 PMLU Water** • Flood mapping results have been updated to ref moved to be in the **Section 5.3.3: Flooding** unde **Watercourse Diversions**; • Guidelines followed for construction of diversion have been incorporated into **Section 3.1.2: Wate** • The subsoil (stockpile) amelioration with gypsum relevant. c. The diversion is inspected annually, and any areas ide incorporated into planned remediation works. This in DESI in the form of the Annual Regulated Structures Condition G8-G12 of the EA.

As the landform assessment is carried out in isolation to WRD slopes, it is not clear how other synergies of the landform aspect taken into consideration such as a mixed PMLU or native ecosystem, the flood prone landform and void catchment areas.

The Appendix H: Flood assessment report in its Landform flood interaction section (section 5.3.1) states that maps of flood event and the PMF to assess the risk of landform erosion are presented in Appendix B: Flood velocity mapping. The section also states key locations of interest likely to be final rehabilitated Pipeline Pit and WC pit spoil with notable ponding where high velocities are predicted to occur.

Section 3.3 of the Appendix J states, 'the soil parameters represented in the Water Erosion Prediction Project (WEPP) model for the site landform, is based on the soil depth of 300mm which is greater than actual proposed topsoil depth which is 150mm. Achieving target erosion rates for 300mm thicker layer add conservancy to the model results. ' It is not clear if the proposed target erosion rates of less than 30 rills/gullies and less than 0.3m deep in the schedule are based on 300mm topsoil application rate or 150mm topsoil application rate.

Section 5.3.3 of the Appendix J provide information on concave slopes and in section 5.3.2 suggests relationship between increased rock cover and reduced erosion but does not elaborate on rate of rock mulch application for specific slope gradients and any other additional surface treatment options where topsoil application rate is 150m.

The above information is important to determine SMART rehabilitation milestone criteria for Surface preparation.

- final landform including all disturbed domains and associated PMLU. ·
- areas susceptible to flood waters and ponding in accordance with Appendix B: Flood velocity mapping of Appendix H: Flood assessment report.

b. Clarification on the relevancy of the proposed target erosion rates with respect to 150mm topsoil application rate.

c. Information on recommended rate of rock mulch application for specific slope gradients considering final landforms at Foxleigh site; and

d. Other additional surface treatments for reducing erosion and supporting growth of vegetation where topsoil application rate will be 150mm.

carried out in isolation of the landform. The main top
assessment, as was a cover level that is required to b
implementation of these practices aligns with the WI

- Section 5.3.2.4: Flood Risk Profile has been upda
- Components of the final landforms with potentia reviewed (**Flood Assessment report - Appendix** assessment peak velocity results for the 0.1% AE assess the risk of landform erosion under very ra assessment of landform erosion risk from region
  - Flooding against the rehabilitated final flood velocities in very rare flood event of erosion, particularly with long-term v
  - Flood protection landforms have been p to the NUMAs. Therefore no flood ingre for all events up to and including the PM
  - The diversions are expected to perform designs and the current creek diversion
- Rock mulching in discrete locations of the spoil c landforms could be considered if increased erosi
- A new Section **5.3.5.4.4: Areas susceptible to flo** amended PRCP, with further details provided in **Profile**. Rock mulching in discrete locations of th protection landforms could be considered if incr

b. As mentioned in Appendix J, 300mm soil depth is use used, the model will generally limit erosion as there i transport off the slope. 300mm is used as a means of this amount (typically with vegetation), then a thinne Sensitivity runs with the model confirmed this.
   - The topsoil application rate of 150mm is not alte modelling, as the extra depth was illustrative, no See RFI 18 for further justification of the use of 1

c. Appendix J notes the relationship between increased rates. The report was making recommendations of p that could be used, and also referred to methods use **Management Strategies to minimise Erosion risks** ha outline the actual proposed methodologies that will required.

d. Appendix J was making recommendations of potenti could be used, and also referred to methods used on **Management Strategies to minimise Erosion risks** ha outline the actual proposed methodologies that will required.

	Insufficient information has been provided to demonstrate that the landform design has considered and addressed the risk of increased erosion at areas where the landform causes flow to concentrate as shown in Figure 5.4 of Appendix J and Figure 3-31 of PRC plan (page 108 of PRCP). The erosion modelling undertaken did not consider concentrated flows, and as a result the findings would be invalid on areas of the landforms that concentrate flow by design. This information is required to demonstrate the final landform is stable.	in rill/gully incision into dispersive spoil materials.	intended to protect the landform from rill/gully incis spoil material. Furthermore, milestone criteria within the amended PRC landforms to contain erosion and sediment control syste and fit for purpose, and that reshaped landform have bee stable by an AQP. The implementation of such measures v whist groundcover is established.
	Erosion assessment Section 5.4 of the Appendix J includes the recommendation to undertake further characterisation and testing of materials to derive more reliable erosion predictions, noting that "Modelling inputs have been derived from existing Fox reports, which have diverse sources. A tailored site-specific sampling program could provide experimentally derived results, using actual site materials where an erosional stress is applied by way of flumes and simulated rainfall." Erosion predictions should be based on site-specific data to provide sufficient confidence that the proposed landform designs can support the proposed PMLU and will be stable and non-polluting.	28.1 Provide updated PRC plan and Appendix J that includes – a. Updated erosion assessment based on measured, site-specific erodibility rates.	a. Erosion prediction and soil qualities presented within specific data collected through the development of S Assessment: The Foxleigh Plains Project. HAN19-001 Geochemical characterisation of mining waste, coal, 2021. An updated erosion assessment was not deem expected that the results of further modelling at this significant change to erosion management**. Section 5 to minimise Erosion risks** outlines the actual propose applied at Foxleigh. In addition, extra Milestone crite have been added to the RM's.
	Landform Topsoil Section 3.3 of the Appendix J states that soil mapping in 2011 found the site was dominated (43%) by brown/yellow sodosols and other smaller areas of different coloured duplex soils and cracking clay vertosols. The three materials considered in WEPP modelling were sodosols, vertosols, and chromosols. Physical properties of the vertosols and sodosols indicate these soils are erosion prone. It is unlikely that WEPP modelling would have considered the dispersive properties of each soil type and cracking behaviour of vertosols. Exclusion of these properties may under-estimate actual soil erosion rates and may not provide reliable final landform stability predictions.	29.1 Provide updated PRC plan and Appendix J that includes – a. Revised WEPP modelling to include potential increased erosion where vertosols and sodosols have been used.	a. A revised WEPP modelling assessment was not deem assessment did consider properties associated with t were different for the soil types, and the results of th the appropriate erosion control methods, such as % expected that the results of further modelling at this significant change to erosion management**.** Final landform design parameters outlined within **section** outlined in **Section 5.4** have been developed to address a These practices include: ○ Minimising slopes on newly rehabilitated sp ○ Restricting slope lengths to a maximum con ○ Requiring newly reshaped landforms to con systems designed by an AQP, installed, and ○ Reshaped landform have been assessed as g ○ Inclusion of a cover crops within the seed m on the exposed surfaces. The implementation of above measures and milestone cr rehabilitation, is expected to minimise erosion risks (no m slope erosional stability is achieved once groundcover rea
	Slope stability Section 4.1 of the Appendix J includes a Table 4.1: WEPP annual average mean soil loss rate outputs (T/ha/Yr) for 0% vegetation cover. The Table 4.1 shows that bare soil conditions and ground cover 60% ground cover. More information is required detailing the way bare slopes be managed prior to 60% vegetation cover establishment. This information is required to demonstrate final landform stability.	30.1 Provide updated PRC plan and Appendix J that includes – a. Management strategies to minimise erosion prior to 60% vegetation cover being established and sustained.	a. Management strategies for managing erosion during described in the new **Section 5.3.5.4.3**. The final land minimise slopes on newly rehabilitated spoil to a ma slope lengths to a maximum continuous length of 10 • Milestone criteria within the amended PRCP req contain erosion and sediment control systems d fit for purpose, and that reshaped landform have stable by an AQP. • Seed mixes have been developed to include a co

	information is needed if another modelling method such as SIBERIA has been considered for landform assessment. The above information is important as the landform stability issue could be crucial for site given the large area susceptible to erosion such as mine dump area of 4315ha (RA1).	likelihood of permanent riling occurring.	b. The new **Section 5.3.5.4.2: Proposed Slopes to redu** management to minimise rill/gully erosion. The final minimise slopes on newly rehabilitated spoil to a ma slope lengths to a maximum continuous length of 10 criteria within the amended PRCP requires newly res and sediment control systems designed by an AQP, i that reshaped landform have been assessed as geote mixes have been developed to include a cover crop the exposed surfaces. The implementation of such m protections, whist groundcover is established. In addition, **Section 7.4.5.2:Landform and Erosion** of the maintenance and contingency methods to implemented s classified as 'moderate' or 'severe' be identified within th
d s	Section 3.5.6 of the PRC plan provides a conceptual cover system, but no testing or validation of this design is presented. Information on key soil physical (PSA, ρb, SMC, K, dispersion index, etc) or chemical (pH, EC, ESP etc) characteristics have not been provided in support of the cover materials selection and performance to satisfy the cover objectives. The Appendix L or section 3.5.6 is not detailed enough and must be supported by following – · • SMART completion criteria (e.g., in-situ Ksat, in-situ ρb, SMC, allowable drainage through cover base, etc) · • in-field cover trials and/or · • modelling. This information is required to assess if the final landform will be non-polluting.	32.1 Provide updated PRC plan and Appendix L that includes – a. Description of the proposed cover system design based on physio-chemical characteristics of the proposed cover material. b. How the selected cover material characteristics helps to achieve the cover system's performance objectives as stated below: • to minimise recharge of tailings moisture from deep infiltration of rainfall. • to avoid upward movement of leachate from tailings into the vegetation rooting zone; and • to accommodate long-term consolidation settlement in the tailings, such that the first two objectives and surface erosional stability are not compromised. (Refer page 109 of the PRC plan)	a. **Section 5.3.6.2: Potential Cover Materials** has been properties from Fox that are suitable for the cover la analysis is included. b. **Section 5.3.6.1: Objectives of Cover Design** outlines to meet the objectives of the Cover Design. It should contaminant of concern that the cover design is no PAF materials in the tailings materials. Updated milestone criteria within Section 5.10.1 of the ar to ensure the covers are effectively implemented to achie NB. Cover trials are not currently feasible on the TSF as th depositional area. At the end of active deposition, areas c available for a trial sooner than areas in the middle of the given to implementing a trial at that time. Also, it is emph preliminary cover design, and it is expected that further r place. Over the next 20 years before this TSF is expected t further research and development in the industry that co proposed methods.
	Landform and Erosion: Section 3.7.2 states that, '*field-based erosion monitoring should take place annually and erosion severity be ranked using criteria displayed in Table 3-72: Field Erosion Monitoring Criteria.'* The PRCP schedule proposes a criteria for erosion control based on Table 3-72 as follows – *'No erosion classification of 'Severe' or 'Extreme' (>30 rills/gullies with average depth of >0.3m) present on site'*. The technical basis for Table 3-72 are not clear and does not justify adoption of above-mentioned milestone criteria allowing moderate erosion when compared to the 'Erosion Classification Framework' published by the Australian Soil and Land Survey Field handbook. (refer image below). Table 1. Erosion classification framework Erosion | Minor | Moderate | Severe	33.1 Provide an updated Rehabilitation Planning Part that includes: a. Field based erosion monitoring data if available b. Justification how the proposed criteria for erosion control likely to meet the safe, stable PMLU.	a. **Section 7.4.2:Landform and Erosion** includes the upd **Monitoring Criteria**. b. Erosion monitoring and associated milestone criteria with the Australian Soil and Land Survey Field Handb and Terrain 2009).

	ensure that the final landform is stable and non-polluting into perpetuity, not to ensure compliance with the EA. **Groundwater Monitoring:** Section 3.7.5 states that groundwater monitoring will be continued in accordance with Schedule E in the EA pending defined trigger limits. The groundwater monitoring and reporting should be done to ensure that the final landform is stable and non-polluting into perpetuity. The reporting requirements in Schedule E of the EA are for the operational phase of the mine and not rehabilitation and closure. The current EA groundwater monitoring network is not considered adequate for post closure phase. Monitoring locations, monitoring frequency, quality characteristics and limits appropriate for rehabilitation and closure need to be defined and included in the PRCP schedule.	and groundwater monitoring locations, monitoring frequency, quality characteristics and limits that are fit for purpose. Please note – • monitoring locations should be based on sources and pathways of potential contamination. • Quality characteristics should be based on CoC. • Limits should be fit for purpose (closure not operation), site-specific and based on Water Quality Objectives, guidelines, and background data.	outline the potential sources of contaminants, a contaminants of concern. Further, it outlines the management strategies that have been develope risks. • **Section 5.6.7.3: Groundwater Contaminant of C** primary contaminant of concern for groundwate • **Table 5-14: Potential Contaminants of Concern** identifies the monitoring parameters for surface monitored as part of the Rehabilitation Mileston Existing surface and groundwater monitoring programs ha in consideration of the existing contaminants of concern f transport mechanism and potential resultant environmen closure management of Fox will not introduce any new C therefore the existing programs are considered to be an a monitoring program to implement post mining.
	Grazing and Native Ecosystem PMLU monitoring Section 3.7.2 outlines a monitoring schedule and rehabilitation parameters for grazing PMLU. The section does not provide a benchmark against identified rehabilitation parameters to determine safe, stable, non-polluting, and self-sustaining nature of grazing PMLU. Example of benchmark* could be defining grass species richness by identifying the seed mix and application rate, annual grass yield, crown cover etc Table 3-80 does not include parameters for measuring the native tree, shrub species richness, recruitment rate etc. It is recommended that for Native Ecosystem PMLU a BioCondition framework* should be adopted for monitoring benchmark and technique. *BioCondition Matrix – https://www.qld.gov.au/__data/assets/pdf_file/0029/68726/biocondition-assessment-manual.pdf	35.1 Provide an updated Rehabilitation Planning Part that includes: a. Benchmarks to monitor achievement of cattle grazing and Native Ecosystem PMLU	**Section 7.4.: Rehabilitation Monitoring Methods** has bee address this RFI. • To ensure rehabilitation at Fox can demonstrate rehabilitation objectives and outcomes of safe, s polluting, milestone criteria have been develope benchmark criteria or targeted land suitability. • The survey methodologies outlined have been a Herbarium survey technique (*Methodology for S Ecosystems and Vegetation Communities in Que* al. 2019) and the *Method for the Establishment BioCondition* (Eyre et al. 2017). **Section 5.4.4: Cattle Grazing PMLU** lists Milestone Criteri revegetation relevant to Low Intensity Grazing PMLU have RM6 - Revegetation (seeding and / or planting). The follow RA1, RA3, RA4, RA5, and RA6. The following milestone cri • Completed seeding using a selection of species li Grazing PMLU (Foxleigh Mine, 2023) • Palatable, productive, perennial pasture species perennial species sown at a seeding rate of 30kg **Section 5.4.6 Native Ecosystem PMLU** lists Milestone crit include benchmark criteria reflective of characteristics sir ecosystems 11.3.1 and 11.3.2. • Species identified are consistent with *Table 5-19 Corridor PMLU (Foxleigh Mine, 2023)*, • Assessment by an AQP that rehabilitation repres with characteristics similar to REs 11.3.1 and 11. ◦ ≥2 tree species ◦ ≥3 shrub species ◦ ≥ 5 groundcover species
eas	Spatial data shows that existing rehabilitation is included in Mining and Mine Dump Areas (RA1). It is recommended to separate the existing rehabilitation area from RA1 and be captured	36.1 Update PRCP schedule – a. To add new RA for existing rehabilitation b. Update maps and spatial data accordingly	a. A new RA7 has been created for Existing Historical Re b. Maps and spatial data have been updated according

	Retained infrastructure. The PRCP schedule does not provide any rehabilitation milestone suitable for retained infrastructure and explaining the steps that are required to ensure safe, stable stage achieved for retained infrastructure.	38.1 Provide a dedicated rehabilitation milestone criteria suitable for retained infrastructure.	RM12 Achievement of post-mining land use to a stable co PMLU) has been created. RM12: Achievement of post-mining land use to a stable c PMLU), as (outlined in Table 5-22 in section 5.10.1 of the included to ensure this PMLU achieves the definitions of a • No infrastructure remaining other than those tha agreement. • The RA is safe with safety hazards, as determine surrounding unmined landscapes. • There is no environmental harm being caused by • Retained water storage water quality for quality trigger values for livestock drinking water define (Water) Policy 2009 Mackenzie River Sub-basin E Quality Objectives Basin No. 130 (part), including Sub-basin, September 2011, or the most recent v • All retained water storages achieve geotechnical and approved by an AQP. • No evidence of erosion on the retained dam ban 'severe'. • Dams to remain for landholder use are safe for s banks.

- Specify the erosion management practices.

cover system.

d. A corrective measure to ensure cover system meets the benchmark.

e. Specify the erosion management practices.

concern (salinity) from preventing the establishment
that are relevant to achieve the successful vegetation
relevant for the other RA's, and specifically **RM8 – Ac**
land use to safe and sustainable condition (Low Inte

b. Key steps to achieve a successful cover system install
The following milestone criteria is proposed in **RM3:**
System/Capping:
   - Low clay content NAF spoil is placed 2m thic
   - Non-Acid Forming spoil meets the following
     - Total sulfur >0.1 %
     - NAPP<-5 kg H2SO4/t)
     - Acid neutralising capacity: maximu
   - A low permeability layer ≥ 1m of material (w
     Tertiary spoil), compacted to at least ten tim
     above it. The surface will be shaped to shed
     landform.
   - ≤ 2m of gravelly fresh Permian spoil is place
   - Final ground surface will shed rainfall witho

c. Benchmark to measure the performance of cover sys
Therefore, the benchmarks to measure the performa
establishment of vegetation consistent with the PML
demonstrate the achievement of the PMLU have bee
– Achievement of target post-mining land use to saf
Intensity Grazing PMLU).

d. A corrective measure to ensure cover system meets
Corrective measures for all RM's are detailed within t
outlined in **Appendix V: Demonstration of Milestone**
implemented when monitoring identifies issues with
milestone criteria are not being met.

e. Specify the erosion management practices
Erosion management criteria is contained within **RM**
Requirements, and **RM8 – Achievement of target po**
sustainable condition (Low Intensity Grazing PMLU)

Note: the following changes in numbering of RM's in the
- RM4 is the new **RM3: Installation of Cover System/C**

achieve the target topsoil nutrient level.

d. Targeted land suitability class

AQP, and any recommendation made for ameli
exchangeable sodium potential, electrical con
achieve the relevant PMLU.

- Gypsum will be applied at a rate determine
recommendations.
- Fertiliser to be applied at a minimum rate o
recommendations.
- Records of ameliorants applied and incorporated
an AQP.
- Records that topsoil placement has achieved a m
- Ripping depth on contour to a minimum of 500m

Milestone Criteria to address ongoing soil quality in rehab
proposed to be included in **RM7 – Achievement of Surfac**
applicable for all RA's involving revegetation. The followin

- Soil testing (sampled 12 months and 5 years after th
repeated where required) indicates the following pa
post-mine land suitability (Short 2023):
  - Plant Available Water Capacity (PAWC); 30 - <
  - Bicarbonate P (at 0 -10cm depth); 4 - <8 mg/k
  - Electrical Conductivity (1:5 dilution) (in the ro
dS/m .
  - Soil pH as measured at any part of the root zo
  - Exchangeable Sodium Percentage (ESP%) (at
    - Slope <10%, ESP <14%
    - Slope >10%, ESP <6%

Note: the following changes in numbering of RM's in the
- RM6, RM7, and RM8 have been combined into the n
(topsoil)

- Completed seeding using a selection of species li
  Grazing PMLU (Foxleigh Mine, 2023)
- Palatable, productive, perennial pasture species
  perennial species sown at a seeding rate of 30kg

Milestone Criteria to address the establishment of revege
Grazing PMLU have been proposed to be included in **RM6**
planting). The following criteria will be applicable for RA1
following milestone criteria is proposed:

- Completed seeding using a selection of species li
  Grazing PMLU (Foxleigh Mine, 2023)
- Palatable, productive, perennial pasture species
  perennial species sown at a seeding rate of 30kg

Milestone Criteria to address the establishment of revege
been proposed to be included in **RM6 - Revegetation (see**
following criteria will be applicable for RA5:

- Native tree and shrub species mix sown suit a no
  characteristics similar to REs 11.3.1 and 11.3.2.
- Completed seeding using a selection of species li
  Native Ecosystem Corridor PMLU (Foxleigh Mine)
- Seeding selection includes a minimum of:
  - Six upper story native species sown at a seed
  - Five mid-stratum native species, at a seeding
  - Five lower story shrub and grass species at a
  - Two legumes at a seeding rate of 1kg/ha.

Milestone Criteria to address the establishment of revege
been proposed to be included in **RM6 - Revegetation (see**
following criteria will be applicable for RA8:

- Completed seeding using a selection of species li
  Grazing PMLU.
- Grass species mix sown with a minimum of 4 per
  rate of 30kg/Ha.

Note: the following changes in numbering of RM's in the c

- RM9, RM10, and RM11 have been combined into the
  (seeding and / or planting)

	The PRC plan section 3.3.2 refers to further assessment of permanent diversions against the ACARP stability criteria which is not reflected in the schedule.	c. Include a criterion to assess stability of the permanent diversions.	Instead, To ensure rehabilitation at Fox can demonstr rehabilitation objectives and outcomes of safe, stable milestone criteria have been developed based on eitl criteria or targeted land suitability. **RM7** has the following alternative criteria: **Low Intensity Grazing PMLU** • Pasture species identified are consisten Grazing PMLU • At least 4 perennial species established **Novel Native Ecosystem PMLU** • Assessment by an AQP that rehabilitatio ecosystem with characteristics similar t ▪ ≥2 tree species ▪ ≥3 shrub species ▪ ≥ 5 groundcover species **b. Weed criteria:** The following criteria has been added into RM8, RM9 RM7. However, weed monitoring will be included in a weed control will be implemented at all stages of reh • Weed presence, as defined in the Biose 10% of total vegetative groundcover co monitoring report with weed managem **c. Stability of creek diversions:** The following criteria has been added into RM9 rathe monitoring will be included in all vegetation monitori implemented at all stages of rehabilitation. • Assessment by an AQP that the Diversion has an Criteria for functioning river landscape units in m (ACARP Project number C20017). Note: the following changes in numbering of RM's in the • RM12, RM13, and RM14 have been combined into th **surface requirements.** New relevant RM with the same criteria are: • **RM8: Achievement of post-mining land use to a stal grazing PMLU).** • **RM9: Achievement of post-mining land use to a stal PMLU)** • **RM10: Achievement of post-mining land use to a sta ecosystem PMLU)** • **RM11: Achievement of post-mining land use to a sta PMLU)**

	specific area. · • Does not provide monitoring locations/frequency and benchmark/standard for water quality assessment. · • No criteria for soil testing.	c. Benchmark against which the surface water quality will be measured. d. Soil testing criteria to support self-sustaining PMLU.	b. Surface water quality monitoring locations, frequenc has been added in each of the RM's: • Receiving waters water quality monitoring result Table 7 and Table 10 water quality triggers, wh locations outlined in Table 11 or are comparable of at least two years. c. Benchmark for surface water – as per b. d. Soil testing criteria • Soil testing (undertaken 5 yearly (or a lesser peri following parameters are met for the relevant pe 2023): • Plant Available Water Capacity (PAWC); 30 - • Bicarbonate P (at 0 -10cm depth); 4 - <8 mg/ • Electrical Conductivity (1:5 dilution) (in the r dS/m . • Soil pH as measured at any part of the root z • Exchangeable Sodium Percentage (ESP%) (a ○ Slope <10%, ESP <14% ○ Slope >10%, ESP <6% Note: the following changes in numbering of RM's in the c • RM15 is now **RM8: Achievement of post-mining land intensity cattle grazing PMLU).** • RM16 is now **RM9: Achievement of post-mining land (watercourse PMLU)** • RM17 is now **RM10: Achievement of post-mining lan (novel native ecosystem PMLU)** New relevant RM with the same criteria are: • **RM11: Achievement of post-mining land use to a sta PMLU)**
	The provided criteria do not meet the SMART principle due to following – · • Does not specify slope geometry for each residual void. · • Does not specify the factor of safety for each void.	44.1 Provide an updated PRCP Schedule to include SMART criteria regarding – a. Slope geometry for each residual void b. Factor of safety for each void	The PRCP milestone and schedule have been updated to a Milestone Criteria to address the landform stability releva proposed to be included in: **MM1 – Achievement of structural stability,** MM1 will be a. Slope geometry • Void walls / slopes assessed as stable by an AQP • Overall, in-situ pit wall and floor slopes <275% (< • Overall backfilled spoil walls and floor within the b. Factor of Safety • In-situ pit walls ,floor and backfilled spoil within meeting an FOS>1.5.

(EA appendix 2) and criteria to determine its effectiveness. ·

- The EA Appendix 2 states that all residual voids to be protected by permanently rehabilitated stable flood protection landforms. The provided criteria refers to abandonment safety bund and a safety bund, but it is not clear if they are mean to qualify as flood protection landform. ·
- The criteria for abandonment safety bund rehabilitation does not specify the steps to be followed to achieve the self-sustaining rehabilitation such as application of topsoil, growth media application etc. Further vegetation species and seeding rates have not been included.

floor slopes and walls.

c. Specification to establish an appropriate drainage system and criteria to determine success.
d. Landform design specification for permanent flood protection landforms providing protection for 0.1%AEP.
e. Abandonment safety bund rehabilitation steps

that will be safe and structurally stable, includes the

- Modelling confirms that residual void acts as a g environment into perpetuity

Note: as pit lake equilibrium is not modelled to be reache does not seem reasonable to propose a specific pit water monitoring seeks to confirm the modelling over time.

b. *Stability*

Milestone Criteria to address erosion/stability within NUM be included in:

MM2 – Achievement of landform design and surface
applicable for all IA's. The following milestone criteria

- Evidence has shown ground cover between the v >60% where ground cover is defined as any cove and may include live cover.
- Results have shown that, between the void crest erosion features are not present and that any ini vegetation cover.

c. D*rainage*

MM3 - Achievement of sufficient improvement not t
that will be safe and structurally stable, includes the

- Final void walls confirmed to drain internally

d. Flood Protection

MM2 – Achievement of landform design and surfac
applicable for all IA's. The following milestone criteria

- An AQP has certified that NUMA is immune

e. Ab*andonment Bund*

MM2 – Achievement of landform design and surface
applicable for all IA's. The following milestone criteria

- Safety infrastructure established around the voic
  - cattle exclusion zone to prevent cattle a
  - adequate bunding in place confirmed to appropriately qualified person;
  - perimeter fencing and signage erected t humans; and
  - appropriate signage placed every 100 m clearly identify and convey the purpose Management Area No Entry).
- Bunding constructed to the following design crite Flood Protection Landform):
  - a minimum batters 1V:3H
  - a minimum height of 2 m; and
  - located at least 25 m beyond the area p instability of the pit edge.

			MM3 - Achievement of sufficient improvement not to ca **that will be safe and structurally stable**, includes the follo • Modelling confirms that residual void acts as a g environment into perpetuity • Groundwater monitoring confirms modelling of five (5) year monitoring program. • Groundwater monitoring locations and frequenc program outlined in the EA (EPML00744813) • Groundwater monitoring results are within trigg (EPML00744813). NOTE: as an amendment to the EA to address groundwat submitted soon, no specific table references are made in be amended. It is considered that the most relevant criteria for post-clo monitoring that confirms the groundwater and void mode remain as a groundwater sink, and therefore presents no groundwater.

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