Vulcan Coal Mine –Application to amend EA 0002912 and PRCP Schedule (PRCP-EA0002912-V4)

Vitrinite Pty Ltd (Vitrinite) lodged an application to amend the Vulcan Coal Mine (VCM) Environmental Authority (EA) and Progressive Rehabilitation and Closure Plan (PRCP) schedule on 14 December 2021 with the Department of Environment and Science (DES). The amendment application primarily included the establishment of a Coal Handling and Preparation Plant (CHPP), Train Load-out facility (TLO) and a dedicated rail loop on ML700060. DES decided that the application would be assessed as a major amendment. Vitrinite received an associated information request from DES on 19 March 2021. During the course of the information stage, additional project activities were formulated by Vitrinite, including the addition of a small open cut pit (Matilda Pit) within the proposed rail loop. In order to incorporate these additional amendments into the original application process, Vitrinite lodged a Notice of Change to the original application, to DES on 11 May 2022. A subsequent information request was received from DES regarding this EA change application. This incorporated both the original RFI and additional line items specifically associated with the additional activities proposed. The information request is replicated below (Information Request Notice Appendix A, DES 2022) along with responses from Vitrinite.

Selected responses are supported by further technical assessment documents, which are appended to this response. These comprise:

- Appendix A- VCM Disturbance Footprint- Site Layout Figure (METServe)
- Appendix B- Progressive Rehabilitation and Closure Plan February 2022 (METServe)
  - PRCP Appendix A- Surface Water-Vulcan Coal Mine EA Amendment Surface Water Assessment- September 2022 (WRM Water and Environment)
  - PRCP Appendix B- Groundwater- Groundwater Impact Assessment- August 2022 (Hydrogeologist.com).
  - PRCP Appendix D- Terrestrial Ecology- Terrestrial Ecology Assessment for the Vulcan Coal Mine Amendment- September 2022 (METServe)
  - PRCP Appendix E- Stakeholder Engagement Plan- April 2020 (METServe)
  - PRCP Appendix F- Landform Evolution Modelling Report- November 2022 (WRM Water and Environment)
  - PRCP Appendix G- Geotechnical- Matilda Pit - Preliminary Geotechnical Assessment- July 2022 (Blackrock Mining Solutions)
  - PRCP Appendix H- Geotechnical- Jupiter Final Landform Slope Stability Assessment- March 2020 (Blackrock Mining Solutions)
  - PRCP Appendix I- Geochemistry- VCM Matilda Pit Geochemistry Assessment- September 2022 (RGS)
  - PRCP Appendix J- Geochemistry- Geochemical Assessment of Waste Rock and Coal Reject- June 2020 (RGS)
- Appendix C- Air- Air Quality Impact Assessment - August 2022 (Katestone Environmental)
- Appendix D- Noise- Vulcan Coal Mine Amendment – Noise and Vibration Addendum - June 2022 (Trinity)
- Appendix E- Final Landform Drainage Summary Memorandum- September 2022 (WRM Water and Environment)

Table 1 Environmental Authority and Progressive Rehabilitation and Closure Plan– Information Request Response Table

Item	Relevant Section of Document (supporting information document, proposed PRC Plan, PRCP schedule and/or supporting information appendix)	Matter	Information Requested	Response – draft text, confirm if complete/updated
EA Amendment Application Supporting Information document				
CHPP & Rail Amendment Supporting Information for Application to Amend EA0002912 for the Vulcan Coal Mine, December 2021				
1	Section 3 Proposed Amendment Section 5.7.3 Mitigation Measures (Surface Water)	Figure 2 'Site Layout' in Section 3 includes the infrastructure proposed by this amendment application. Section 5.7.3 states a flood protection levee will be constructed along the western side of the proposed Jupiter pit. Further information in Appendix 1 of the amendment application clarifies the proposed levee will be a regulated structure and will be constructed in Stage 2 of the mining project when the Jupiter pit has progressed to the north part of the mining lease. It is understood that the proposed levee is an additional structure to the existing flood diversion levee that runs from the north to south of the mining lease. However, the location ofthe proposed additional flood protection levee is not depicted on Figure 2 Site Layout.	Provide an updated Figure 2 Site Layout that includes a layer for the proposed flood protection levee. Provide the updated figure as a JPEG file. Update any relevant sections of the PRC plan – rehabilitation planning part to be consistent with the response to this item.	The VCM Site Layout figure (**Appendix A**) has been updated and includes the proposed flood protection levee. Relevant sections of the PRC Plan (**Appendix B**) rehabilitation planning part have been updated for consistency.
2	Section 3.2 CHPP	This section of the supporting information does not address if chemical and hydrocarbon storage is required on site for use in the coal handling and processing plant (CHPP). Section 1.3.2 CHPP ofAppendix 1 submitted with the application states the CHPP will include a tailings thickener and a solid bowl centrifuge, indicating certain chemicals and hydrocarbons might be used in processing coal.	Confirm if chemicals and hydrocarbons will be required for processes in the CHPP and if they areproposed to be stored on site at Vulcan Coal Mine (the project). If so, provide: (a) Details of what chemicals and hydrocarbons will be stored. (b) The quantities of each chemical or hydrocarbon proposed to be stored. (c) An assessment of the potential impacts to environmental values (EVs) from chemical and hydrocarbon storage, including how any risks will be mitigated/managed. Update any relevant sections of the PRC plan – rehabilitation planning part to be consistent with the response to this item.	Chemicals and hydrocarbons are required for CHPP operations and will be stored and handled in accordance with the current, relevant Australian standard, where applicable. (a)The following list of chemicals and hydrocarbons will be used at the CHPP: • Diesel; • Anionic flocculant (dry powder); • Cationic flocculant (liquid); and • Acrylate polymer. (b)The following quantities of hydrocarbons and chemicals will be required for the CHPP: • 215kL of diesel; • Anionic (dry powder) 50m³; • Cationic (liquid) 50m³; and • Acrylate polymer 10m³. (c) The storage of CHPP chemicals and hydrocarbons at the Project is considered a low risk. The level of risk was determined by the types and quantities of the chemicals and hydrocarbons to be used, along with appropriate management which will be implemented. All chemicals and hydrocarbons which are considered a hazardous or dangerous good will be handled and stored in accordance with:

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				• Information provided on the Safety Data Sheets (SDS) provided by the manufacturer; • The Australian Standard for the storage and handling of flammable and combustible liquids (AS1940); and • The Australian Standard for the storage and handling of corrosive substances (AS 3780). Relevant sections of the PRC Plan have been updated for consistency with this information (**Appendix B)**.
3	Section 4.6 Schedule F:Surface Water	An update to **Table F1: Water Release Locations from Sediment Dams** is proposed to align with revisions to sediment dams in the proposed site layout.	Provide an updated **Table F1: Water Release Locations from Sediment Dams** highlighting the proposed amendments to the table.	The Surface Water Assessment (**Appendix B- PRCP Appendix A**) has been updated to include the locations of sediment dams in the staged plans and the final landform for post-mining (Figures 1.2-1.4). The proposed sediment dam locations, along with their water sources and associated receiving waters, are provided in Table 5.2 of **Appendix B- PRCP Appendix A.**
4	Section 5.5 Air Quality Section 5.11 Noise andVibration	The potential impact to the EVs of air and noise (including vibration) from the proposed amendment application has been considered based on assumptions from the technical assessments previously undertaken for the project. Previous air quality impact assessments found the potential impactsto the EVs of air to be negligible and unlikely to cause adverse impacts. The supporting information states for the proposed amendment, “Given the distances to sensitive receptors, significant increase to these results are not anticipated.” Previous noise and vibration impact assessments found that noise,air-blast levels and ground vibration from the project would be compliant with noise and vibration criteria under modelled scenarios. The supporting information states for the proposed amendment, “Given the extended distances to residential receptorsor sensitive commercial receptors, the additional infrastructure and operation proposed at the [project] are considered to be negligible.” Further evidence is required to support the assumptions made (andas stated above) about the potential impact to EVs of air and noise in order to satisfy environmental objectives and performance outcomes as per Schedule 8 of the *Environmental Protection Regulation 2019* (EP	Provide updated modelled scenarios that include the additional infrastructure that is proposed by the amendment application. In particular modelled scenarios must address the potential impacts during the year when air and noise disruption from the project is predicted to be greatest.	Potential air and noise related impacts to sensitive receptors have been assessed in consideration of the proposed amendments. An Air Quality Impact Assessment (**Appendix C**) has been prepared to address potential impacts from the VCM Matilda Pit, Rail Loop and CHPP. The results indicate that impacts from the VCM at the sensitive receptors will remain minimal and that compliance with Schedule B: Air and in particular the values presented in Table B1 – Air Quality Limits of the existing EA (EA0002912) will be maintained. Similarly, a Noise Assessment Addendum (**Appendix D**) has been prepared to assess the potential impacts from the VCM Matilda Pit, Rail Loop and CHPP. The proposed activities are assessed to be compliant with the noise and vibration criteria nominated in the previous Noise Assessment Report (August 2020). As per Section 3 of the letter, the amendments to the Project are assessed to have negligible impact on the surrounding sensitive receivers and therefore meet noise objectives under the EP Regulation.

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		Reg). The environmental objectives in the EPReg must be considered as part of the decision on the application as per section 176(2)(a) of the *Environmental Protection Act 1994* (EP Act).		
PRC plan – rehabilitation planning part				
Progressive Rehabilitation and Closure Plan Vulcan Coal Mine, dated 6 December 2021				
5	Section 3 StakeholderEngagement	Reference is made to an appended Stakeholder Engagement Plan(SEP) that also includes the stakeholder consultation register. However, the SEP has not been attached as an appendix to the PRC plan – rehabilitation planning part and was not submitted as a seperate attachment with the amendment application supporting information.	Provide an updated PRC plan – rehabilitation planning part that includes the SEP as an appendix in the same document (PDF). The SEP must demonstrate evidence of stakeholder consultation carried out in relation to this amendment application. Update relevant sections of the PRC plan – rehabilitation planning part to demonstrate how the proposed post-mining land use (PMLU) for rehabilitation of the additional infrastructure is consistent with the outcome of stakeholder consultation, as per section 126C(d)(i) of the EP Act.	The SEP has been appended to the PRC Plan (**Appendix B- PRCP Appendix E**). The SEP includes the relevant stakeholder consultation. The outcomes of the SEP are consistent with the proposed PMLU outlined in the PRC Plan – rehabilitation planning part (**Appendix B**).
6	Section 6.1 Landform Design	There is insufficient information in this section regarding how mixed rejects materials will be disposed of within waste rock dumps. Details of the placement strategy appear to be limited to the following information stated in Section 6.1.4: “All processing waste including reject material and dry tailings, will be stored within activewaste rock dumps…within waste rock cells.”	Provide more detail on the mixed rejects placement strategy, which is a key consideration of landform design as per section 3.6.1 of the Guideline — Progressive Rehabilitation and Closure Plans (PRC plans), ESR/2019/4964, dated 17 March 2021(PRCP guideline). Details of the strategy must include: (a) details of the characteristics of the rejects, e.g. particle size distribution, maximum moisture content; (b) details of where cells will be located within waste rock dumps, e.g. figures of cross sections through waste rock dumps; (c) the depth/s at which mixed rejects will be buried; and (d) how the placement strategy will prevent or minimise potential impacts to ground water and surface water. The proposed waste placement strategy must also be supported by an updated geotechnical assessment and the results of landform evolution modelling as requested	An updated waste geochemistry assessment (**Appendix B- PRCP Appendix I**) has been prepared to consider the proposed amendments. Based on the outcomes of the geochemical assessment, the report contains environmental management measures for waste rock, coal, and coal reject materials with respect to stockpiling, emplacement, and rehabilitation. This is included in Section 6.1.5 of the PRC Plan (**Appendix B- PRCP).** **(a)-** The previous geochemistry assessment (**Appendix B- PRCP Appendix J**), which was prepared for the initial EA Application and considered the Jupiter pit area, concluded that waste rock and coal reject materials generally had low sulfide content and excess acid neutralizing capacity (ANC) and so bulk materials posed a low risk of generating acidic or metalliferous drainage (AMD). A detailed characterisation of the coal rejects is provided in the updated geochemistry assessment (**Appendix B- PRCP Appendix I**), which includes pH, electrical conductivity, total sulfur, maximum potential acidity, acid neutralising capacity, net acid producing potential, metals, cations and anions. This information is provided in Section 6.1.5 of the PRC Plan

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			by items **10** and **11**.	(**Appendix B- PRCP**). **(b and c)-** To reduce the likelihood of acid mine drainage, dry reject coal materials will be placed deep into to the open pit profile as backfill and be progressively covered with Non-acid Forming (NAF) waste rock materials.During operations, traffic compaction of the in-pit dry coal reject materials is also proposed to assist in limiting air entry to the coal rejects to surface diffusion and slow down the overall rate of reaction of the bulk coal reject materials. Slowing down the rate of PAF reaction will hence limit the rate at which acidic materials are created and reduce the chance of acid mine drainage and deleterious runoff into surface water and groundwater. This information is provided in Section 6.1.5 and 6.1.4 of the PRC Plan (**Appendix B- PRCP**). **(d)-** From the above management methods employed in addition to the proposed water management strategies (**Appendix B PRCP, Appendix A**), it is expected potential impacts to surface and groundwater will be adequately managed to meet the EA conditions. Geotechnical assessments have also been undertaken to consider the proposed amendments to final landform designs **(Appendix B- PRCP Appendix G and H).** The assessments concluded that the factor of safety is within acceptable limits. The co-disposal of coarse and fine dry coal reject materials, whereby fine rejects fill the air gaps in course rejects, will also provide additional geotechnical stability to final landforms. Additional information has been provided in the Landform Design section of the PRC Plan (**Appendix B**).
7	Section 6.1 Landform Design Section 1.3.2 Project Description (Rail Loop)	The rail loop closely follows the Western boundary of the tenure ML700060 and, as stated in Section 1.3.2, a number of areas of cut and fill will be required to achieve the appropriate grade for the rail line. This point is reiterated in Table 6-1 'Cover variations in each rehabilitation area', which states: "deeper incisions may be required for cuttings…subsoils will be replaced during backfilling of any excavations which will resemble	(a) Update the description of actions required to construct the rail loop in Section 1.3.2, including construction plans, the location of cut and fill areas and cross sections. This information is necessary to support descriptions of the rehabilitation actions required to achieve targeted objectives. (b) Provide more detail about the final landform design of rehabilitated rail loop, including updates to	Detailed construction plans will be developed prior to the rail loop being developed. Cut and fill requirements for the rail loop are displayed in the figure below. Conceptual plans have determined that cut on the western side of the loop requires 288 kbcm (thousand bank cubic metres) to be removed and the fill on the eastern side of the loop will require 246 klcm (thousand loose cubic metres) to be filled. The description of the actions to construct the rail loop has been included in the PRC Plan (**Appendix B**).

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		conditions previous to subsoil removal." However, the actions that will be required to rehabilitate the rail loop and the final landform design criteria that will be achieved have not been clearly set out. For example, what slope gradient will be achieved by backfilling the incisions? Figure 6-3 does not make it clear what the final landform elevation of the rail loop area is proposed to be or the topography of backfilled cut batters. Figures 6-4 to 6-6 do not include the rehabilitated rail loop in cross sections.	Figures 6-3 to 6-6, such as, final landform elevation and cross sections. (c) Provide more information about the rehabilitation actions that will be carried out to achieve the final landform design for the rail loop. Particularly, demonstrate that the gradients specified in rehabilitation milestone criteria for RM3 and RM4 in the PRCP schedule can be achieved for rehabilitation of the land designated for the rail loop. A response to this item must be considered with any response to item **17**.	 The final landform (post closure) of the rail loop is displayed in cross sections which have been prepared in the Final Landform Drainage Summary Memorandum (**Appendix E**). Cross section XS-5 is taken north-south from the rehabilitated rail loop area through the western backfilled Matilda Pit/in-pit waste rock dump and out to the undisturbed slope to the south. XS-6 is a west east cross section taken from the rehabilitated rail loop area out through the Backfilled Matilda Pit/in-pit waste rock dump. These cross sections are also presented in the PRC Plan (**Appendix B**). Note that the cross sections are conceptual drawings which are not to scale. The cross sections are intended to showcase the key features of the final landforms and design principles which will be used in its detailed design. Specific design elements of the final landform (including final grades, material selection, and final geometries etc.) will be prepared as part of detailed design phase to support relevant rehabilitation reports. The rail loop is categorised within Rehabilitation Area 3, which has a PMLU of Low-intensity cattle grazing with habitat for threatened fauna. Rehabilitation Milestone 3 (landform development and reshaping/reprofiling) and Rehabilitation Milestone 4 (Surface preparation) criteria will all be achieved by having a final landform which has a similar slope to that of the pre-existing landform. The slopes of the western side of the rail loop will be shaped to a

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				maximum of 15% and will contain surface water management measures to drain water from the landform to the surface water drainage features within the surrounding landscape. The eastern side of the rail loop is expected to have a flatter slope which also incorporates surface water management features (**Appendix E**). Final landform geometry will be surveyed progressively to maintain adherence to the final landform and surface water management design. Sub-soil, rock mulch and topsoil will be spread with bulldozers and will be the subject of depth and distribution survey and quality control monitoring.
8	Section 6.1.4 Mine WasteGeochemistry	Section 6.1.4 states that leachate from coal reject sample testing had a mean acid-neutralising capacity and did not have elevated metal concentrations. However, details regarding the sampling regime, analyses conducted and the results of tests have not been presented.	Provide greater detail of the sampling regime and analyses conducted on mine waste geochemistry, and present the results in the PRC plan – rehabilitation planning part. Refer to the paragraph on Waste characterisation in Section 3.6.1 of the PRCP guideline for guidance on information to be included. Consider any response to this item in conjunction with item **12** about technical reports.	Geochemistry assessments (**Appendix B- PRCP Appendix I and J**) have been undertaken to assess the degree of risk from the storage of mining waste materials at the Project. Both geochemistry assessment reports have been referenced in the relevant section. The reports provide information on the sampling regime and analysis on mine waste material, which are consistent with the PRC Plan guidelines.
9	Section 6.1.6 Drainage and Surface Water Management (Figure 6-7 Final landform 0.1% AEP flood event)	Evidence of potential flood modelling completed and details of the impacts for final landform design is not provided in the PRC plan –rehabilitation planning part. It is noted that there is some evidence of it having been completed as part of Appendix 1, which is the surface water assessment submitted as supporting information for the amendment application. This information is necessary to understand and justify surface water management in the final landform design, and demonstrate the landform in post-closure can meet the definition of a stable condition as per section 111A of the EP Act. Additionally, the final landform in Figure 6-7 'Final landform (post- mining) 0.1% AEP event Flood depths, levels and extent' is not thesame as Figure 6-3. It appears to be the same or similar to the landform in the PRC plan – rehabilitation planning part (version dated 22 October 2021) submitted for a previous amendment.	Complete flood modelling for the proposed final landform and include the results in the PRC plan – rehabilitation planning part. Refer to the paragraphs about Flooding and Water management in section 3.6.1 of the PRCP guideline for information to be included. If relevant, update other sections of the PRC plan – rehabilitation planning part to be consistent with any response to this item. Consider any response to this item in conjunction with item **12** about technical reports.	The Surface Water Assessment Report (**Appendix B- PRCP Appendix A**) outlines the post-closure condition impacts. Flood modelling and a flood impact assessment has been undertaken for the 10% (1 in 10) AEP, 1% (1 in 100) AEP and 0.1% (1 in 1000) AEP design flood events in consideration of the proposed final landform conditions (described in Section 8 of The Surface Water Assessment Report (**Appendix B- PRCP Appendix A**) and Section 6.1.7 of **Appendix B- PRCP**). It is important to note that no final voids are proposed as part of the final landform and both open cut pits will be backfilled with overburden material. As shown in Figure 6-3 of **Appendix B- PRCP**, drainage structures will be implemented on and around the final landforms to ensure that the landforms are free draining in accordance with the flood modelling results (shown in **Appendix B- PRCP Appendix A)**. For example, a 10 m corridor between the Jupiter Pit crest and the toe of the final landform will be provided for drainage on the eastern side of the final landform. The diverted water drain upstream (west) of the rehabilitated landform at the former Matilda Pit will be a permanent landform feature to limit erosion of the landform toe

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				until vegetation has been suitably established. For the Jupiter final landform, a 10 m corridor along the toe of the final WRD landform will be provided for drainage on the eastern side of the final landform. Final landforms in the 'Final landform (post- mining) 0.1% AEP Flood Event' and the 'Conceptual Final Landform Drainage Plan' figures have been updated and provided in the PRC Plan. The Surface Water Assessment Report has been appended to the PRC Plan (**Appendix B- PRCP Appendix A**).
10		Limited information has been provided on the geotechnical characteristics of rejects materials disposed of in the waste rock dumps to demonstrate long term stability of the final rehabilitated landform, particularly during scenarios of high rainfall.	Provide an updated geotechnical assessment that considers the proposed changes to the waste rock dumps—the burial of rejects in the in-pit and ex-pit waste rock dumps, and the increase in height of the in-pit dump by 5 to 7 metres. Information provided as part of a response to item **7** may be relevant to any response provided for this item. Update any other relevant sections of the PRC plan – rehabilitation planning part to be consistent with any response to this item.	Geotechnical assessments have been undertaken for both the Matilda Pit (**Appendix B- PRCP Appendix G**) and the Jupiter Pit (**Appendix B- PRCP Appendix H**) to assess slope stability. The burial of dry coal reject material within the in-pit waste rock dump and the height increase of the in-pit dump have been considered as part of the geotechnical assessment, with the factor of safety being within acceptable landform stability limits. Relevant sections of the PRC Plan – rehabilitation planning part have been updated (**Appendix B**).
11	Section 6.1.8 Predicted Stability	The level of environmental risk will be substantially increased by placing rejects materials in the waste rock dumps. This can be expected to increase the risk of potential environmental contaminants being released should the landform not be in a stable condition post closure. The current slope stability assessment and erosion assessment is no longer sufficient to demonstrate long-termstability of the final landform design. As set out in the paragraphs on Landform design in Section 3.6.1 of the PRCP guideline, landform evolution modelling is required to provide an analysis of future stability of the final landform and justify that the targeted landform design objectives are reasonable and can be met.	Carry out landform evolution modelling, and include the details of the model and results in the PRC plan – rehabilitation planning part. It is recommended that SIBERIA is used to complete the landform evolution modelling. If required, update targeted landform rehabilitation objectives based on the results of the modelling and/or clearly demonstrate how the results support the current targeted landform rehabilitation objectives.	As outlined in the geochemistry assessments (**Appendix B- PRCP Appendix I and J**), dry reject materials will be buried deep into to the open pit profile as backfill and be progressively covered with NAF waste rock materials. This management of the reject material was considered appropriate to avoid potential contaminants being released to the environment. Landform evolution modelling using model software SIBERIA within CAESAR has been completed to predict resulting erosion and deposition processes on the final landforms (**Appendix B- PRCP Appendix F**). The modelling highlighted the predicted rilling, gully erosion and sedimentation for each of the potential cover design scenarios which were compared to rehabilitation objectives determined in the PRCP. An erosion risk rating was determined for each of the assessed cover design scenarios based on these rehabilitation objectives. The outcomes of the LEM assessment show that once the proposed WRD landforms have fully established a cover of rock mulch with grass cover,

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				rehabilitation objectives as outlined in the PRCP would be achieved. Erosion objectives achieved with this cover design in place include: • Erosion depth only affecting uppermost topsoil layer; • Land is stable, only minor active rills or gully erosion no deeper than 0.25 m; • Minor risk of sedimentation to downstream waterways; and Relevant sections of the PRC Plan – rehabilitation planning part have been updated (**Appendix B**).
12	General	The PRC plan – rehabilitation planning part refers to a number of technical reports, e.g. Geochemical assessment of waste rock and coal reject prepared by RGS in 2020, Vulcan Complex Project Surface Water Assessment prepared by WRM in 2020. The PRC plan must be a stand-alone document as it is a public facing document.	Provide an updated PRC plan that includes referenced technical reports as attached appendices and/or summarise all key information in the PRC plan – rehabilitation planning part so that the PRC plan is not reliant on information contained in a separate document that is not available on the public register.	All referenced technical reports have been appended to the PRC plan document (**Appendix B**).
PRCP schedule				
VCM_PRCP Schedule_Excel format (MET00297551-002)				
13	RA2	The PMLU for RA2 is, “Low intensity cattle grazing”. However, Section 10 in the PRCP plan – rehabilitation planning part, includingFigure 10-1 ‘Final Site Design’, indicate the PMLU for RA2 is not proposed to change from, “Low intensity cattle grazing with habitat for threatened fauna”, which is also what is currently approved. ThePRCP schedule in the approved template ESR/2019/4957 (xslx) is considered the statutory document, and therefore, it is considered that the amendment application proposes to change the PMLU for RA2.	Provide an explanation for how the PRC plan – rehabilitation planning part addresses and justifies the proposed change of PMLU for RA2. Alternatively, provide a revised PRCP schedule with an update to RA2 that states the PMLU is, “Low intensity cattle grazing with habitat for threatened fauna”.	The PRC plan and schedule have been updated (**Appendix B**). The PMLU for RA2 is “Low-intensity cattle grazing with habitat for threatened fauna”.
14	RA3	Relevant activities of RA3 includes “magazine”. The amendment application supporting information states the explosives magazine will not be established as was previouslyapproved.	Provide an explanation for why “magazine” has been retained as a relevant activity in RA3. Alternatively, provide a revised PRCP schedule withan update to RA3 that does not include “magazine”. Update any relevant sections of the PRC plan – rehabilitation planning part to be consistent with a response to this item, particularly Section 10.	Reference to the magazine has been removed from the PRC plan schedule and relevant sections of the PRC plan have been updated (**Appendix B**).

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15	RA4 Rehabilitation milestones	The relevant activities under RA4 do not appear to include the flood protection levee (the regulated structure that will be constructed in Stage 2 of operations), nor is it indicated that it has been considered in one of the other rehabilitation areas. Given it has not specifically been considered as part of one of the rehabilitation areas, it is not clear what rehabilitation milestone criteria apply to the levee.	Provide an updated PRCP schedule that: (a) includes the flood protection levee in an existing rehabilitation area or proposed new rehabilitation area; (b) clearly sets out what rehabilitation milestone criteria apply to the levee to achieve the PMLU; and (c) rehabilitation milestone criteria have been revised, where relevant, to include specific rehabilitation criteria for the levee. Update any relevant sections of the PRC plan – rehabilitation planning part to be consistent with the response to this item.	Rehabilitation of the flood protection levee was previously captured under RA4 but wasn't listed as a relevant activity. The PRC plan schedule has been updated accordingly to include the flood protection levee in the RA4 relevant activities and throughout the PRC plan. The PRC plan schedule outlines which rehabilitation milestones are applicable to RA4. Additionally, Table 10-2 within the PRC plan also outlines all of the milestone criteria for the Mine and which are applicable to the levee (RA4). Rehabilitation milestone criteria have been revised, where relevant, to include specific rehabilitation criteria for the levee. Relevant sections of the PRC plan – rehabilitation planning part have been updated with the above (**Appendix B**).
16	RA6	The milestone reference for RA6 is RM9. RM9 is 'Fulfilment of all requirements of the agreement with Isaac Regional Council for theconstruction and commissioning of Saraji Road'. However, RA6 is for infrastructure as the relevant activities. Therefore, RM10 seemsto be the more appropriate reference milestone.	Provide an updated PRCP schedule to include reference to the appropriate rehabilitation milestone for RA6.	Reference to RM9 has been changed to RM10 for RA6. Relevant sections of the PRC plan – rehabilitation planning part have been updated with the above (**Appendix B**).
17	RM1, RM3 and RM4	The only proposed amendment to rehabilitation milestone criteria is in RM1: "All rail lines removed". The rehabilitation milestone criteria for RM3 and RM4 do not contain specific criteria related to landform development and reshaping/reprofiling and surface preparation for the rail loop.	Consider including additional rehabilitation milestone criteria for the area of land designated for the rail loop from any response to item 7.	Additional milestone criteria have been considered for the rail loop. We argue that the existing criteria for these RMs are appropriate, as detailed designs will be drafted as part of RM3 criteria and the criteria listed in RM4 are applicable to the rail loop rehabilitation.
EA Amendment Application Supporting Information document				
Appendix 1 WRM EA Amendment Surface Water Assessment (Appendix 1)				
18	Section 5.5 Section 5.6.1 (Figures 1.2 and 1.3 in Section 1.3)	The area of land designated for the rail loop and the rail load out facility has not been included as a surface water catchment for the purposes of surface water management for the project. It does not appear in the list of surface water catchments defined in section 5.5 or the list of mine affected water catchments defined in section 5.6.1. The rail loop and rail load out facility appear in Figures	(a) Table 5.1 of Appendix 1 defines types of water that are managed within the project area, including the definition of mine-affected water. What type of water is surface runoff from the landdesignated to the rail loop and rail load out facilityconsidered to be in terms of Table 5.1, including the Rail Loop Dam and TLO MWD? (b) If the catchment is not considered mine affected	Runoff from the TLO pad will be considered mine affected water (MAW) and will be managed in the TLO dam. The rail loop will be considered diverted runoff when operational. This is due to the proposed construction of upstream diversion bunds to divert the upstream clean water catchment around the rail loop to the proposed culverts prior to runoff being affected by mine water/disturbance areas. Therefore, rainfall/runoff diverted through the rail loop culverts would be classified as clean water. Notwithstanding this, suitable construction erosion and sediment

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		1.2 and 1.3.However, it is not clear where surface water runoff from this area will flow as it has not been included as a mine water, surface wateror clean water catchment. Section 5.3 states the following as part of the general water management strategy for the project: “separate diverted water frommine affected water to ensure that up-catchment water and mine affected water do not mix wherever practicable”. The assessing officer’s concern is the potential for rainfall runoff to be contaminated with coal dust from the rail loop and under the rail load out facility, and flow into clean water catchments.	water, provide justification to explain why it does not meet this definition. (c) Provide more information on where surface runoff from the land designated for the rail loop and rail load out facility is proposed to go, and how it will be managed as part of the site water management plan. Update relevant sections and figures of the PRC plan – rehabilitation planning part and Appendix 1 in response to this item, and provide the revised documents as part of the response to this informationrequest. In particular, the water balance model results in Section 7 of Appendix 1 may need to be revised to consider any response to this item.	controls (ESCs) will be implemented in accordance with site’s Erosion and Sediment Control Plan (ESCP) as part of the rail loop construction and will remain in place until disturbed soils have been suitably stabilised. This will ensure that the potential elevated risk of erosion and downstream sedimentation is minimised until the rail loop earthworks are complete. Regarding the management of water at the rail loop and rail load out facility, the following is of note: • The appropriate ESCs will be determined prior to the commencement of construction activities. Management of runoff from adjacent roads will be achieved through a combination of drainage control, erosion control and sediment control measures. The design of the measures will be undertaken during detailed design, but will likely include some of the following measures: o Catch drains; o Check dams; o Grass swales; o Rock lining/protection; o Sediment traps; and o Sediment basins • The rail loop (operational in Stage 2) will be considered diverted runoff, diverting undisturbed catchments around the rail loop. Notwithstanding this, suitable construction erosion and sediment controls (ESCs) will be implemented in accordance with site’s Erosion and Sediment Control Plan (ESCP) as part of the rail loop construction and will remain in place until disturbed soils have been suitably stabilised. This will ensure that the potential elevated risk of erosion and downstream sedimentation is minimised until the rail loop earthworks are complete. • The erosion and sediment control measures proposed for the rail loop would likely be installed on or adjacent to the railway embankment and road. • The TLO dam is intended to be a mine-affected water dam, and will collect runoff from the train load out pad, direct rainfall and mine-affected water from the train loadout process. There is no external catchment runoff draining to the to the TLO dam. The TLO dam will only receive water as required for train loadout purposes.

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19	Section 5.9 Post-ClosureConditions Water Management	A statement from the key features of the final landform in Appendix1 is, “Final landform batter slopes will be 17%”. This contradicts the approved PRCP schedule PRCP_EA0002912_V4 and the proposed PRCP schedule submitted with the application, which states in rehabilitation milestone 3, “Batters have a maximum slopeof 15%”.	Confirm the slope gradient proposed for final landform batters of rehabilitation areas. Has the surface water modelling of the proposed final rehabilitated landform been carried out using the assumption that batters have a maximum slope of 15% or 17%?	The surface water assessment and associated modelling was undertaken using final landform maximum batter slopes of 15%.
Change to Amendment Application (submitted 11 May 2022)				
20	Email received by the department for the change to amendment application dated 11 May 2022	A statement from the email “All values, impacts and mitigation discussed in the amendment remain unchanged, albeit there will be a slight increase in footprint to accommodate the altered rail loop configuration. The previous disturbance figures provided had assumed the entirety of the rail loop interior was disturbed for ecological assessment purposes. The surface water, terrestrial ecology and groundwater assessments supplied with the current amendment application will be updated to address the additional pit and infrastructure and potential additional minor impacts.”	Update the following documents to address the potential additional impacts to environmental values as a result of the construction of the “small pit” (Matilda Pit) and rail loop footprint: • Surface Water Assessment • Terrestrial Ecology Assessment • Groundwater and • Geochemistry Assessment Provide information on how additional and/or potential impacts will be mitigated and/ or managed. Provide the revised documents as part of the response to this information request.	All the listed assessments have been updated to consider the impacts from the inclusion of the Matilda Pit. Mitigation of potential impacts are outlined below- **Terrestrial Ecology**- Recommended mitigation measures are listed on page 80 of the Terrestrial Ecology Assessment for the Vulcan Coal Mine Amendment (**Appendix B- PRCP Appendix D**). **Surface Water**- The potential impacts of the Project on surface water resources will be mitigated through the implementation of a mine site water management system (page 55 of surface water assessment) to control the flow and storage of water of different qualities across the site (**Appendix B- PRCP Appendix A**). A surface water monitoring program will be implemented to monitor potential environmental impacts and ensure that the site water management system is meeting its objectives. **Groundwater**- No mitigation measures are currently proposed or required as part of the Project. There are no impacts predicted for third party groundwater users and surface water systems. Impacts to GDEs are considered highly unlikely as are impacts on groundwater quality and broader environmental values. Should monitoring and subsequent assessment determine potential impacts, mitigation strategies would be considered commensurate with the level and risk of environmental impact (**Appendix B- PRCP Appendix B**). **Geochemistry**- Recommendations for geochemical management of materials are listed on page 35 of the VCM Matilda Pit Geochemistry Assessment (**Appendix B- PRCP Appendix I**).
21		The primary update is the establishment of a small, shallow (max depth 40m) open pit within the modified rail loop alignment. For the purposes of environmental assessment, it is assumed that the full extent of the rail loop interior is disturbed for mining purposes. The new pit will be mined concurrently with the main pit to the east. There is no requirement to increase the production rate or significantly alter project timeframes. This is because further work has been completed on the main pit and the amount of coal to be extracted has	Provide more information in relation to the new proposed small pit including but not limited to: • method of the construction and operation of the open pit; and • Impacts to project timeframes	The open pit, referred to as the ‘Matilda pit’ will be developed concurrently with the approved VCM pit. Truck and shovel mining operations will be employed to develop and operate the Matilda pit. It is expected that the following equipment will be required to construct and operate the Matilda pit: • Excavators; • Haul trucks; • Dozers; and • Graders.

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		reduced from what was originally proposed and approved. Further, this means that there is sufficient capacity within the waste rock dump final landforms previously proposed to store the waste from this pit, without design modification. There would be no change to the equipment fleet, workforce, accommodation etc. This is largely an exercise to supplement material that has been decided not to be mined from the main pit.		Mining and processing will be conducted by equipment already onsite and considered in the existing approvals. No additional infrastructure, other than the pit itself and the road connecting back to the ex-pit dump levee crossing, is required. The Matilda Pit will be stripped and mined in a west to east direction with a maximum pit depth of 40m. Waste rock will be transported to the Jupiter in-pit dump (where there is sufficient capacity) in conjunction with Matilda pit in-pit dumping. Waste rock dump designs will not need to be altered as bulk materials from the Matilda Pit have been considered and fit within the current dump design. Coal will be loaded and hauled from the Matilda pit to the ROM, where it will be stockpiled prior to processing. ROM coal is currently approved to be trucked offsite for toll washing and export at third party facilities. Once the CHPP infrastructure is constructed, ROM coal will be processed onsite. The Matilda pit is proposed to be located within the rail loop and will provide supplementary coal to the ROM stockpile. Development of the Matilda pit will not require an increase of the approved production rate, nor have a significant impact on the life of the project. This is because further drilling work has been completed on the main pit to confirm the geological model and the amount of coal to be extracted has reduced from what was originally proposed and approved.
22		Statement from email “Part of the pit is proposed to be retained as a water storage (noting the previous rail loop included a water storage) for future use.” Statement from email “The primary update is the establishment of a small, shallow (max depth 40m) open pit within the modified rail loop alignment (refer figure below)”. Statement from email dated 02 June 2022 “Based on the attached figure, the absolute maximum dimensions of the pit would be 500m wide x a tapered 800m length. Pretty small relative to the 50km of pits across the road”	With regards to the part of the pit that is proposed to be retained as a water storage, please provide further information on: • The size of the void to remain (length, width, and depth); • The quality of water that will remain in the void; • The use of the water to be stored in the void once the resource has been extracted; • Whether the part of the pit to remain as a water storage is proposed to remain post relinquishment; and • How it will be managed within the Site Water Management Plan.	Vitrinite has further investigated the retention of part of the pit as a water storage and has decided not to proceed with the inclusion of this storage facility. The entire Matilda pit will be backfilled so that there is no void after mining is complete. Relevant sections of the PRC plan – rehabilitation planning part have been updated (**Appendix B**).