

HAIL CREEK OPEN CUT

GLENCORE

28 November 2025

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

Dear Alison,

The purpose of this letter is to address the additional Information Request (IR) relating to the Environmental Authority (EA EPML00661913) Amendment application for the Hail Creek Open Cut Eastern Margin Extension Project (the Project).

The EA Amendment Application was submitted by Hail Creek Coal Holdings Pty Limited (HCC) on 11 January 2024. The Application reference number is A-EA-AMD-100576264 and is relevant to mining lease (ML) 4738 and 700026. A formal IR Notice was issued by the Department of Environment, Science and Innovation (now Department of Environment, Tourism, Science and Innovation (DETSI)) on 15 March 2024. HCC submitted a formal IR response (IRR) on 30 April 2025.

The EA Amendment application and supporting documents underwent public notification from 13 May to 10 June 2025. The public notification was determined to meet the requirements of the *Environmental Protection Act 1994*. During public notification, DETSI received 176 submissions relating to the EA Amendment application.

The EA Amendment application is currently in the decision stage of the assessment process. An additional IR was issued by DETSI on 31 July 2025 to address issues raised within the submissions. The IR items have been addressed in an Information Request and Submitter Response Report and associated replacement technical assessments attached to this letter.

We trust that the updated information addresses your IR, and that DETSI can proceed with assessing the application.

Kind regards,



Alan Shaw
Environmental & Community Manager
Hail Creek Open Cut

Table 1 Additional IR Response

Item	Matter	Information Request	Relevant Section
Greenhouse gas assessment – Appendix I information request response (IRR)			
1	<u>Emissions from land clearing</u> Sections 5.4.1 and 5.4.4 of Appendix I state that greenhouse gas (GHG) emissions from vegetation clearing were estimated using the method outlined in the 2013 Transport Authorities Greenhouse Group (TAGG) Workbook. However, the selection of emission factors for land clearing appears flawed. The vegetation emissions methodology in the TAGG Workbook is detailed in Appendix E, where emission factors are determined based on vegetation class and the assumed potential maximum biomass class (maxbio) in Table 2. For this project, the applicant has identified two vegetation types for clearing—open woodlands (i.e. class D) and open shrublands (i.e. class G)—and has applied emission factors of 77 t CO₂-e/ha and 113 t CO₂-e/ha respectively, based on an assumed maxbio class of 1. However, when referencing Figure 4 of the TAGG Workbook—which maps potential biomass classes across Queensland—it appears that the project site, located approximately 85km west of Mackay, may fall within an area assigned a potential biomass class as high as 5. Higher biomass class would result in higher emission factors. Furthermore, emission factors for vegetation types D and G under biomass class 5 are not provided in the TAGG Workbook. This highlights a key limitation of the TAGG methodology and suggests that the emission factors applied in the GHG assessment are likely to be underestimated. Furthermore, for estimating GHG emissions from land clearing, the Full Carbon Accounting Model (FullCAM) is generally preferred. While the TAGG workbook provides a guideline based on FullCAM for road projects, FullCAM is the primary model used for national and project-based GHG emissions assessment in Australia, including those related to land clearing. It is also noted that the TAGG workbook was developed in 2013 and some of the emission factors might now be outdated. In comparison, FullCAM is continuously updated and incorporates the most recent emission factors, making it more	The applicant is required to: a) Re-estimate GHG emissions from land clearing using FullCAM, in accordance with the requirements in both the Australian Carbon Credit Unit (ACCU) Scheme methods and the FullCAM guideline; and b) Provide assumptions and input data that are used in the FullCAM simulation. Re-estimation of GHG emissions using FullCAM will provide true and accurate estimation and address limitations as noted of TAGG workbook guidelines.	a) Section 3.1.1 of the Information Request and Submitter Response Report (IRSR Report) and table 9 of Appendix B - Replacement Greenhouse Gas Assessment Report. b) Section 3.1.1 of the IRSR Report and section 5.4.1 and table 8 of Appendix B – Replacement Greenhouse Gas Assessment Report.

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	reliable and accurate for estimating GHG emissions from land clearing.		
2	<u>Fugitive emissions from coal extraction</u> The applicant applied a higher order Method 2 to estimate fugitive emissions from coal extraction. In accordance with the NGER Measurement Determination and ACARP Guideline, the use of Method 2 must be supported with a gas assignment report that details the drilling and sampling program, and the gas model that are used to derive the Method 2 emission factor. However, the gas assignment report is not provided, making it difficult to assess the accuracy of the estimated fugitive emissions. Moreover, the derived Method 2 emission factor for fugitive emissions from coal extraction is not included in Table 7 of the GHG assessment report. Based on the information provided in the GHG assessment report, the Method 2 emission factor can be back calculated by dividing the total annual fugitive emissions in Tables 16 and 17 by the estimated run of mine (ROM) coal production in Table 4. DETSI's analysis shows that the Method 2 emission factor under the Project only ranges from 0.00461 to 0.1061 t CO₂-e per tonne of ROM coal. The highest emission factor of 0.1061 t CO₂-e/t ROM coal was used to estimate fugitive emissions for the year 2028. Under the LOM including Project scenario, the Method 2 emission factor ranges from 0.0618 to 0.131 t CO₂-e per tonne ROM coal. It is noted that the Method 2 emission factor for fugitive emissions varies from year to year in both scenarios and also differ between these two scenarios in the same year. Further clarification is required to justify the use of year-specific and scenario-specific Method 2 emission factors in the estimation of fugitive emissions from coal extraction.	The applicant is required to: - Provide the gas assignment report to describe how the Method 2 emission factors were derived based on in-situ gas sampling and measurements; - Confirm if the gas assignment report satisfies the requirements for Method 2 outlined in the NGER measurement Determination and ACARP Guideline; - Provide clarification to explain why the Method 2 emission factor is year- and scenario-specific; and - Include the derived Method 2 emission factor in Table 7 of the GHG assessment report.	- Section 3.1.2 of the IRSR Report. - Section 3.1.2 of the IRSR Report. - Section 3.1.2 of the IRSR Report. - Section 3.1.2 of the IRSR Report.
3	<u>Scope 3 emissions</u> The GHG assessment report does not include all relevant Scope 3 emission sources. The following fuel types, used on site, would also contribute to Scope 3 emissions. However, these sources were not accounted for in the GHG assessment report: - Diesel used for stationary and transport purposes - LPG used for stationary purposes	The applicant is required to: - Include the Scope 3 emission sources in the GHG assessment; - Assess the Scope 3 emissions from each emission source using the relevant Scope 3 emission factor; and	Section 3.1.3 of the IRSR Report and table 11 and section 6.3 of Appendix B – Replacement Greenhouse Gas Assessment Report.

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	- Gasoline used for transport purposes - Petroleum-based oils - Petroleum-based greases The relevant Scope 3 emission factors for these fuels are provided in the 2024 NGA Factors Workbook.	c) Update Table 6 of the GHG assessment report to reflect the inclusion of these Scope 3 sources, ensuring the appropriate checkboxes for Scope 3 emissions are marked for each applicable fuel.	
4	<u>GHG abatement plan</u> Facility-level Scope 1 emissions reduction targets As the project's estimated annual Scope 1 and 2 emissions exceed 25,000 t CO₂-e, the applicant must provide a GHG abatement plan in accordance with Appendix A of the DETSI GHG guideline. This additional IR requirement is consistent with section 6A(b) of Environmental Protection Act 1994 (the EP Act). The GHG abatement plan must include facility-level Scope 1 emissions reduction targets, an emissions reduction program that meets Appendix B of the DETSI GHG guideline. As the project will be integrated into the existing Hail Creek coal mine that is an existing Safeguard facility, the project's Scope 1 emissions reduction targets must be established in accordance with the Safeguard Mechanism. It appears that the estimated Safeguard baseline (i.e. Scope 1 emissions reduction targets) for the entire Hail Creek coal mine, including the proposed project, is shown in Figure 4 of the GHG assessment report. However, the methodology and input data that were used for estimating baseline numbers are not included, making it challenging to assess the accuracy of the provided Safeguard baseline data. The facility-specific emissions reduction initiatives and commitments are briefly discussed in section 8.2 of the GHG assessment report. It should be expanded following the SMART principle outlined in Appendix B of the GHG guideline. In particular, the applicant should thoroughly investigate the feasibility of pre-drainage, which is the most significant opportunity for the site to reduce its methane emissions. <u>Feasibility of pre-drainage</u>	The applicant is required to provide a draft GHG abatement plan for the project in accordance with Appendix A of the DETSI GHG guideline including, but not limited to: a) A detailed description of the methodology and input data used to estimate the Scope 1 emissions reduction targets (i.e. baseline) in accordance with the commonwealth Safeguard Mechanism; and b) Details of the proposed feasibility study of pre-drainage in the proposed mining area as part of potential abatement measures to reduce methane emissions.	Section 3.1.4 of the IRSR Report and Appendix C – Draft Greenhouse Gas Abatement Plan.

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	Section 6.2.1 of the GHG assessment report estimate that Scope 1 emissions from the Project correlates to an approximate average emissions intensity of 0.0965 t CO ₂ -e per t ROM coal. This site-specific emissions intensity is higher than that of most operating open-cut coal mines and even some underground coal mines in Queensland. This indicates the need to thoroughly investigate pre-drainage to capture methane and convert it to carbon dioxide. By doing so, the fugitive methane emissions from extraction of coal are expected to be significantly reduced.		
5	<u>Comparison with national and state emissions</u> Section 7 of the GHG assessment report presents a comparison between the project's estimated GHG emissions and the remaining national and Queensland carbon budgets. However, this comparison is made over the period 2021–2050, while the project is not expected to commence until 2025. To ensure a fair and relevant analysis, the comparison should be limited to the period 2025–2050. In addition, the report assumes Queensland's remaining carbon budget for 2021–2050 to be 2.9 Gt CO₂-e, citing the Climate Resource report titled Comparison between Queensland's 2030 and 2050 Emission Reduction Targets, 1.5°C Pathways and 2.0°C Pathways. However, this estimate was derived without accounting for Queensland's 2035 emissions reduction target. The Climate Resource report bases its budget solely on the 2030 and 2050 targets. When the Queensland 2035 target—75% emissions reduction below 2005 levels—is factored in, the remaining emissions budget for Queensland from 2021 to 2050 is expected to be significantly lower. Furthermore, the assessment only includes Scope 1 and 2 emissions in the comparison. Given that the project will also generate Scope 3 emissions within both Queensland and Australia, it is necessary to include relevant Scope 3 emissions in national and state comparisons.	The applicant is required to: a) Recalculate the remaining carbon budgets for Australia and Queensland for the period 2025–2050. For the Queensland carbon budgets, take into account the 2035 emissions reduction target; and b) Include relevant Scope 3 emissions in comparisons with national and state emissions and remaining carbon budgets for 2025–2050.	Section 3.1.5 of the IRSR Report and section 7 of Appendix B – Replacement Greenhouse Gas Assessment Report.
6	<u>Other minor issues</u> Several additional minor issues have been identified in the GHG assessment report, which should be reviewed and addressed to improve the clarity and accuracy of the report. This includes:	The applicant is required to: a) Update Note 2 of Table 9 in Appendix I by replacing Scope 2 Queensland grid emission factors with Scope 3 Queensland grid emission factors;	a) Section 3.1.6 of the IRSR Report and table 9 of Appendix B – Replacement

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	- In Table 9 of Appendix I, Note 2 references "Scope 2 Queensland grid emission factors" for estimating Scope 3 emissions from electricity transmission losses. - Table 16 presents estimated annual Scope 1 and 2 emissions under the Project-only scenario. Emissions from SF₆ leakage are excluded for the project. However, as the project will extend the mine's life by another three years, SF₆ emissions should be included for these three years. Table 7 of the GHG assessment report, the unit for SF₆ leakage is described as kg SF₆/kg SF₆, which appears to be incorrect and should be checked. If the unit is correct, the global warming potential of SF₆ should be applied to convert the emissions to carbon dioxide equivalence.	b) Include SF₆ emissions in table 16 of Appendix I; and c) Check unit of SF₆ leakage within Table 7 of Appendix I and if unit is correct, use global warming potential of SF₆ to convert the emissions to carbon dioxide equivalence.	Greenhouse Gas Assessment Report. b) Section 3.1.6 of the IRSR Report and table 18 of Appendix B – Replacement Greenhouse Gas Assessment Report. c) Section 3.1.6 of the IRSR Report.
7	The applicant provided projected Scope 2 and 3 emission factors for the period of 2040 to 2050. This is considered unnecessary as the entire Hail Creek coal mine has an estimated mine life up to 2038.	The applicant is required to: a) Justify providing projected Scope 2 and 3 emission factors for the period of 2040 to 2050. Noting the entire Hail Creek coal mine has an estimated mine life up to 2038; and b) Pending (a), provide projected Scope 2 and 3 emission factors for the relevant period.	Section 3.1.7 of the IRSR Report.
8	Section 6.2.1 of the GHG assessment report compares the project's emissions intensity with both the: - Default Safeguard industry average of 0.0653 t CO₂-e/t ROM coal for coal mines; and - The range of site-specific emissions intensities for operating coal mines that are Safeguard facilities, being 0.0084 to 0.6384 t CO₂-e/t ROM coal. Whilst it is acknowledged that the default Safeguard industry average has no difference between open-cut and underground coal mines, for site-specific emissions intensities for operating coal mines that are Safeguard facilities it would be more reasonable and meaningful to	The applicant is required compare the project's estimated emissions intensity against the site-specific emission intensities of operating Safeguard open cut coal mines in Queensland.	Section 3.1.8 of the IRSR Report.

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	compare the project with open cut coal mines in Queensland, rather than all coal mines. This is because HCOC is an open cut operation. Furthermore, underground coal mines generally have higher emission intensity due to deeper coal seams and higher gas content.		
Flood – Appendix B, Appendix C and Appendix F of IRR			
9	<u>Climate Change and Flood Risk Assessment</u> Climate change scenarios have been considered in the assessment of water ponding in voids in “Appendix B – Surface Water Impact Assessment” but have not been incorporated into flood estimation in “Appendix F – Flood Risk Assessment”. Incorporation of climate change in flood modelling is now mandated by legislation as listed below: • Australian Rainfall and Runoff (ARR) 2019 guidelines require climate change consideration for flood estimation. • EP Regulation 2019 mandates the use of ARR 2019 for flood estimation and risk assessment.	The applicant is required to: - Use current climate change scenarios (such as Representative Concentration Pathways [RCPs]) in modelling to project future rainfall intensity and storm frequency, as outlined in ARR 2019 (Book 1); and - Update flood modelling to incorporate expected increases in rainfall intensity and runoff, and account for changes in catchment conditions (e.g., land use, vegetation).	- Section 3.2.1 of the IRSR Report. - Section 3.2.1 of the IRSR Report and section 2.3.3 and 4.1.3 of Appendix D – Replacement Surface Water Impact Assessment.
10	<u>PMF flood estimation</u> Flooding is clearly a consideration at Hail Creek, as Waste Rock Dumps, residual voids, and the reshaped TSF are situated in areas susceptible to flooding with high erosive potential – even for 1% AEP events, as demonstrated in the flood assessment report. When this is the case, flood assessment must consider Probable Maximum Flood (PMF) modelling for PMF flood level estimation. This has not been done. The PMF flood modelling is a must requirement for operational voids, especially if they accumulate mine affected water*. Note: PMF results are also critical inputs for the consequence category assessment (CCA) of regulated structures, informing appropriate design standards and safety margins where required.	The applicant is required to provide PMF flood models and their resulting flood levels.	Section 3.2.2 of the IRSR Report and section 4.5 of Appendix D – Replacement Surface Water Impact Assessment.
11	Watercourse Diversion: Function, Riparian Impact, and Long-term Performance Appendix C (“Hail Creek Functional Design Report”) does not fully align with the requirements of the Watercourse Diversion Guideline (OSW/2019/4599). The functional design is insufficient in key areas,	The applicant is required to revise Appendix C to address the identified shortcomings. The revised Appendix C must: Demonstrate that all diversion and drain designs comply with requirements for	- Section 3.2.3 of the IRSR Report. - Section 3.2.3 of the IRSR Report and section 8.3.4 and 8.3.5 of Appendix E

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	including natural channel design, sediment transport, hydraulic/flood analysis, and revegetation and monitoring (Table 1 below). The functional design report must demonstrate that the diversion achieves the required outcomes for geomorphology, hydrology, sediment transport, connectivity, aquatic habitat, and riparian function in accordance with OSW/2019/4599. <table><tr><th colspan="3">Table 1: Deficiencies in functional design report (Appendix C of IRR)</th></tr><tr><th>Requirement (Guideline/Key Concept)</th><th>Assessment of Appendix C</th><th>Deficiency/Gap</th></tr><tr><td>Natural geomorphology & riparian vegetation</td><td>Not demonstrated</td><td>No natural reference reach, weak revegetation plan</td></tr><tr><td>Pre/post-mining hydrology & connectivity</td><td>Insufficient analysis</td><td>No clear demonstration of pre/post-diversion regime</td></tr><tr><td>Design flood events (0.1% AEP etc.)</td><td>Not clearly evidenced</td><td>Lacks transparent hydraulic design for key floods</td></tr><tr><td>Sediment transport regime</td><td>Inadequate assessment</td><td>No quantified, self-sustaining transport demonstration</td></tr><tr><td>Armouring & stability (bed, banks)</td><td>Not fully justified</td><td>No detailed design for 0.1% AEP/PMF, durability unproven</td></tr><tr><td>Geotechnical stability (through spoil)</td><td>Minimal assessment</td><td>Spoil settlement, seepage, instability not addressed</td></tr><tr><td>Revegetation and bank stabilisation</td><td>Generic only</td><td>No detailed plan for establishment or maintenance</td></tr><tr><td>Floodplain corridor width</td><td>Largely arbitrary</td><td>Not justified by modelling or natural evolution</td></tr><tr><td>Operation & monitoring plan</td><td>Generic</td><td>No event-based triggers, not risk-based</td></tr><tr><td>Certification & approvals</td><td>Partial</td><td>Missing full documentation and legal sign-off</td></tr></table>	Table 1: Deficiencies in functional design report (Appendix C of IRR)			Requirement (Guideline/Key Concept)	Assessment of Appendix C	Deficiency/Gap	Natural geomorphology & riparian vegetation	Not demonstrated	No natural reference reach, weak revegetation plan	Pre/post-mining hydrology & connectivity	Insufficient analysis	No clear demonstration of pre/post-diversion regime	Design flood events (0.1% AEP etc.)	Not clearly evidenced	Lacks transparent hydraulic design for key floods	Sediment transport regime	Inadequate assessment	No quantified, self-sustaining transport demonstration	Armouring & stability (bed, banks)	Not fully justified	No detailed design for 0.1% AEP/PMF, durability unproven	Geotechnical stability (through spoil)	Minimal assessment	Spoil settlement, seepage, instability not addressed	Revegetation and bank stabilisation	Generic only	No detailed plan for establishment or maintenance	Floodplain corridor width	Largely arbitrary	Not justified by modelling or natural evolution	Operation & monitoring plan	Generic	No event-based triggers, not risk-based	Certification & approvals	Partial	Missing full documentation and legal sign-off	erosion resistance, hydraulic stability, and long-term self-sustainability as required by OSW/2019/4599. b) Identify any locations where design criteria are exceeded (e.g., localised exceedances of shear stress, velocity, or stream power) and provides mitigation or design improvements. c) Include a comprehensive monitoring and adaptive management plan with clear performance triggers, as required by the Watercourse Diversion Guideline. If this information is not provided in response to this informal IR, DETSI may include example conditions provided in Attachment 1 at end of this document.	– Replacement Functional Design Report. c) Section 3.2.3 of the IRSR Report and section 9 of Appendix E – Replacement Functional Design Report.
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12	<u>Floodplain Impacts and Biodiversity Corridor</u> The formal* IR item 6 required details of 0.1% AEP impacts on the biodiversity corridor (north of ML4738) due to proposed expansion. The IRR does not provide a quantitative, mapped impact assessment of flooding on the biodiversity corridor and/or specify mitigation and/or offset actions. *Formal IR refers to information request issued by DETSI on 15 March 2024.	The applicant is required to: a) Provide a quantitative impact assessment of flooding on the biodiversity corridor north of ML4738, for all relevant design flood events (including at least the 1% AEP, 0.1% AEP, and PMF). b) Compare the pre- and post-mine floodplain regimes and evaluate the	Section 3.2.4 of the IRSR Report and Appendix C of Appendix D – Replacement Surface Water Impact Assessment.																																				

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		consequences for habitat connectivity, ecological function, and environmental values within the biodiversity corridor, referencing relevant ANZECC/ANZG criteria where applicable. c) For any identified adverse impacts, specify mitigation and/or offset actions, and ensure these are incorporated into the site's risk assessment framework.	
13	<u>Water management structures at Hail Creek</u> Section 7.2.3.4 of Environmental Assessment Report (EAR, v3) provided in response to IR states that: • Exevale North clean water drain and Carrinyah clean water drain will be incorporated into the landform to divert upstream clean water runoff around the pits (Figure 4 below); and that • Flood protection for each pit will also be provided in the form of bunding / levee structures where required, as outlined below: - Homevale Pit Levee; - Exevale Pit Levee; and - Carrinyah Pit Levee Further details are required about which structures will remain on site permanently and as such how the stability and flood immunity of those structures has been considered.	The applicant is required to provide further details about which structures will remain on site permanently and as such how the stability and flood immunity of those structures has been considered. Please note that this IR can be dealt with via conditioning in the EA. For diversions and associated levees, example conditions are provided in Attachment 1 of this document. These conditions can further be updated to ensure that all high-velocity drainage pathways (velocities exceeding 2 m/s) are protected against erosional and geotechnical instability. DETSI also notes that current HCOC EA (EPML00661913, dated 13 June 2025 and thereafter referred to as the EA) includes conditions for regulated structures in its Schedule I. These conditions require the EA holder to undertake consequence category assessment and construction under ESR/2016/1934 which includes consideration of flood immunity and stability.	Section 3.2.5 of the IRSR Report and section 4.5.2.3 of Appendix D – Replacement Surface Water Impact Assessment.
Groundwater – Appendix D, Appendix G and Appendix E of the IRR			
14	<u>Numerical modelling (Brumby water hole (BWH))</u> The formal IR item# 14 raised concerns about the local scale model developed by KCB (October 2023) using the SLR 2023, PRCP groundwater model to obtain some boundary conditions. The	The applicant is required update the October 2023 KCB local scale numerical groundwater model of the BWH with boundary conditions informed by	Section 3.3.1 of the IRSR Report and Appendix F – 2025 Brumby Water Hole Groundwater Model Update.

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	concern was that the SLR PRCP groundwater model does not incorporate the proposed open cut mining at Homevale Pit, Exevale North or Carrinyah extension. In particular the proposed mining at Homevale Pit and Exevale North is much closer to Brumby Water Holes (BWH) than any existing approved mining that has been modelled in the SLR PRCP model. Therefore, the boundary conditions (obtained from the SLR PRCP model) in the KCB local scale model would be significantly different if the updated EA application modelling (SLR April 2025) had been used. While the value of the work carried out in the KCB October 2023 assessment is noted, the IR response does not seem to address the concern. Given the importance of understanding the potential impacts of the proposed additional mining on NWH, the KCB local scale modelling should be updated with boundary conditions informed by the SLR April 2025 numerical groundwater modelling.	the SLR April 2025 numerical groundwater modelling.	

15	<u>Groundwater monitoring - network and levels</u> Currently there are only five (5) monitoring bores in the EA. They are all alluvial monitoring bores and appear either dry or within about a metre of being dry. The EA Table E2 appears to indicate that for all five (5) bores there is a water level trigger of >2m drawdown from the background level although it is not clear what the background level is. If this can't be determined and in fact, they are all dry or nearly dry, then it is recommended that: • The current five (5) alluvial bores in the EA become interpretation bores only, as effective water level triggers cannot be applied to these bores; • All monitoring bores as identified in Table 5-1 of the SLR Groundwater Impact Assessment (Appendix D of IRR), be placed on the EA, with the exception of GWMB11, which has been decommissioned. Some should be identified as compliance bores with water level triggers, others like the alluvial bores should become reference bores. A table with a suggested approach to selecting compliance and reference water level bores, is provided in Attachment 2 at end of this document. Note that some columns like earliest GW level data, lowest GW level, approx. depth of water, are included for assessment purposes. They are not intended to go in the EA table. The EA should however include the top of casing elevation which is not shown here and a water level trigger (mAHD) when it has been determined. Ground level elevation, depth, screened depth and formation name have been taken directly from Appendix D and assumed to be correct. The Water Level Trigger bores have been selected based on attaining appropriate spatial coverage. It has also considered available depth of water in each bore where it is likely that they will be able to sustain a predicted drawdown in the future, although that should be confirmed by the Hail Creek groundwater consultants. All five (5) Rangal Coal Measures bores (where target coal seams are located) are within proposed mine pits and therefore it seems likely they will be mined out at some stage in the future if all proposed pits are approved. Therefore, no Rangal Coal Measures monitoring bores have been included as Water Level Trigger bores.	The applicant is required to: - Update and provide EA groundwater monitoring network for groundwater levels as per IRR and recommendations provided in right hand side column of this additional IR item. The network must consider the need for ongoing monitoring of the water levels in BWH. DETSI has provided recommended network in Attachment 2 of this document. The applicant must review and comment on Attachment 2; and - Provide top of casing (TOC) elevation and water level trigger threshold (mAHD) for bores within updated groundwater monitoring network as determined in (a) above. The water levels can be determined by undertaking groundwater modelling (conceptual or numerical). The level of groundwater model undertaken must be commensurate with the scale of the disturbance as well as the potential for impacts to groundwater related environmental values. DETSI may consider adding condition with future date to provide level triggers thresholds.	- Section 3.3.2 of the IRSR Report and table 2-2 of Appendix G - Groundwater Monitoring Network and Compliance Trigger Level Development. - Section 3.3.2 of the IRSR Report and table 3-1 of Appendix G - Groundwater Monitoring Network and Compliance Trigger Level Development.
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	Moreover, it is not recommended that the vibrating wire piezometers (VWPs) be included in the EA table as it is not clear which of the VWPs are monitoring groundwater levels accurately. Ongoing monitoring may still prove useful in some of the probes, but it is not seen as appropriate to place them on the EA at this time. The application also does not consider the need for ongoing monitoring of the water levels in BWH.		
16	<u>Groundwater monitoring – network, quality characteristics and triggers</u> The EA Table E1 requires monitoring of the five (5) alluvial bores mentioned in additional IR item# 15 above for groundwater quality characteristics. However, and as mentioned above, the five (5) bores do not seem to be fit for purpose if relied solely for groundwater monitoring. Monitoring locations are to be determined based on conceptual and or numerical groundwater modelling, groundwater level measurement data, location of sensitive receptors (SRs), location and type of GDEs, location of mining infrastructure and local geology. Groundwater monitoring locations should align with receiving environment surface water quality monitoring locations, if appropriate. For quality characteristics Table E2 includes only five (5) metals (iron, arsenic, antimony, aluminium and mercury). The quality characteristics monitored should be based on the Contaminants of Concern (CoC). The CoC should be determined based on mining activities and waste rock characterisation, etc. For a coal, the potential common CoCs include many other heavy metals as well (i.e., chromium, boron, cobalt, lead etc). The groundwater quality characteristics must be consistent with those measured from surface water quality. However, this is not the case herein.	The applicant is required to provide latest raw ground water quality data by using one of the attached spreadsheets: • Attachment 3.1_Data_Blank_1; or • Attachment 3.2_Data_Blank_2. The data must report metal and metalloids in both total and dissolved fractions. The above data will then be used to update groundwater monitoring network, quality characteristics and their triggers.	Section 3.3.3 of the IRSR Report.
Biodiversity, offset and rehabilitation – Appendix A of the IRR			
17	The potential offset area is currently leased to Glencore (Lot 13 on Plan WHS466) and: • Adjoins HCOC in the north of the ML;	The applicant is: a) Recommended to engage with QPWS and DETSI for including part of offset area into HNP noting its importance for achieving	Section 3.4.1 of the IRSR Report.

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	- Contains a state biodiversity corridor (SBC) and its associated buffer zone; and - Borders Homevale National Park (HNP, the park), on its eastern border. A voluntary declaration (VDec) under the Vegetation Management Act 1999 is proposed to legally secure the above potential offset area. Given its proximity to HNP, and to improve the ongoing ecological benefits of the proposed offset area, part of the proposed offset area could be incorporated into the protected estate. Specifically, it has been identified that the area northeast (NE) of road (yellow encircled in Figure below) could be beneficial to Queensland Parks and Wildlife Services (QPWS) to manage issues like fire, weeds and feral animals. To progress this, support from QPWS Mackay must be gained before proposing this addition to the national park. For remaining proposed offset area, a higher order (i.e., Nature Refugee) and permanent legal security (into perpetuity) must be obtained. Whatever the legal security is proposed, the applicant must demonstrate its suitability and life considering the extent of impacts. In addition, the proposed offset must meet all eight offset principles as noted in section 1.5 of Queensland Environmental Offsets Policy. Principle 4 requires the offset to achieve conservation outcome that counterbalances the significant residual impact for which the offset was required. Principle 7 requires the offset to provide additional protection to environmental values at risk, or additional management actions to improve environmental values. To demonstrate achievement of offset principles, it is recommended to provide a management plan for the offset area, that details how conservation outcomes for the PEMs (particularly threatened species) will be delivered and monitored. Comprehensive baseline flora and fauna surveys of the offset area should also be conducted and reported in the management plan, including koala surveys using koala/koala scat detection dogs and/or thermal drones, which have been found to improve survey accuracy (Youngentob et al. 2021). Whilst the applicant has made commitment to provide these details post-approval of this proposed amendment, noting the large scale impacts (section 6A(b) of EP Act), having this information before approval will	better environmental outcome. A meeting to discuss the matter is recommended; b) Provide a management plan for the offset area, that details how conservation outcomes, particularly for threatened species, will be delivered and monitored. The plan must include details about: - Comprehensive baseline flora and fauna surveys of the offset area including koala surveys using koala/koala scat detection dogs and/or thermal drones, which have been found to improve survey accuracy; and - Legal security mechanism including its suitability and duration.	

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	give confidence that a suitable offset can be selected, designed and managed to achieve the conservation outcome and maintain the viability of the matter (section 3.6 of General guide for the Queensland Environmental Offsets Framework).  Proposed offset area, Lot 13 on plan WH5466 (blue boundary)		
18	HCOC also contains two declared offset areas located within ML4738, the Black Ironbox Offset Area and the 2015 Offset Area. Both areas are legally secured under Voluntary Declaration. The proposed Hail Creek diversion around Homevale pit have potential to change flows to the Black Ironbox Offset Area. Section 7.3.1 of EAR (v3) includes statements to the effect that there are indiscernible impacts to Black Ironbox trees, or the habitat or population as a whole. Further clarification and details are required about certainty of those statements.	The applicant is required to: a) Provide qualitative impact assessment of change in Hail Creek catchment area on the health and vigour of trees or the succession of the population in Black Ironbox Offset Area; b) Determine significance of impact as determined in (a) above. The offsets framework includes specific additional requirements in determining the significance of an impact on an existing legally secured offset area. Please note that if there is significant impact to occur, the prescribed activity cannot commence until the mechanism for legal security has been removed from the area.	Section 3.4.2 of the IRSR Report and Appendix B of Appendix D – Replacement Surface Water Impact Assessment.

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19	For glossy black cockatoo, Appendix A notes loss of 0.5 ha foraging habitat. This is unlikely to have a significant residual impact (SRI) on this species. However, in absence of detailed assessment of nesting habitat it's hard to establish whether any tree hollows on the site are used by this species. Similarly, for greater glider, Appendix A notes presence of species with no discussion on the location of their den trees. Denning on site, as demonstrated by the species presence, is likely. Such resources are significant, and their loss would have significant impacts both spatially and temporally for this species. Therefore, greater survey work or clearer reporting is required and/or the area of 16.9 ha should be considered to have occupancy and significant value to the glider and appropriate steps taken. Investigation into the presence of large tree hollows would also aid in deciding the proposed sites suitability. This is of particular importance if hollow resources are impacted by the proposal.	Provide further details about the: a) Presence of large tree hollows on site; b) How proposed amendment will impact (a); and c) What mitigation measures (i.e., artificial dens) are or will be taken to limit (b), including need for offset.	Section 3.4.3 of the IRSR Report.
20	The formal IR item# 32 required to justify how impacts to prescribed environmental matters (PEMs) will be or have been avoided; and where impacts cannot be avoided, provide details of how impacts to each PEMs will be mitigated – and why avoidance is not reasonable. The IRR does not propose further avoidance or mitigation measures. The application reiterates that connectivity issues along Hail Creek resulting from the haul roads are temporary and will be rehabilitated post-mining. DETSI notes that connectivity cannot be restored if northern part of HCOC is compromised by the proposed NUMAs (i.e., Homevale and extension to Exevale pit). The application also states that land to the east of Area 4 (Carrinyah pit extension) is extensively cleared and does not contain mapped remnant vegetation. DETSI notes that there is nevertheless connectivity along a small, treed waterway running NNE toward the park. Loss of habitat in Area 4 would disrupt the connectivity through that small waterway, as well as severing the connection of surrounding habitat to the park via Hail Creek. DETSI recommends that one way to mitigate the impacts is by not operating new Homevale pit and proposed Exevale extension pit at same time during operation. This will minimise noise and other	The applicant is required to: a) Provide further details about how impacts to each PEM will be mitigated and why avoidance is not reasonable; and b) Comment on feasibility to not operate Homevale and Exevale extension pit at same time.	a) Section 3.4.4 of the IRSR Report and section 3.3 and 3.4 of Appendix H – Replacement Ecological Impact Assessment. b) Section 3.4.4 of the IRSR Report.

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	disturbance at the north-western edge of the mining lease and will retain some habitat connectivity during mining operations.		
21	The formal IR item# 24 required details about efforts and options analysis for reducing NUMA size – especially for the proposed Homevale NUMA pit. The IRR in section 14.3 of EAR(v3) states that: • Water quality in NUMA pits is not supportive of stock watering PMLU (i.e., EC over 5,970 $\mu\text{S}/\text{cm}$); • Backfilling is not economic; and • Review of the Project has resulted in a reduction of 57ha in NUMA area. The application has not provided water quality modelling to demonstrate its unsuitability for PMLU. For economic viability of backfilling, further details are required to ensure sustainable development is achieved. The 57ha reduction in NUMA area in IRR accounts for only 4.5% reduction in total area than what was proposed in original application (i.e., from 1,260.57ha to 1,203.83ha). Furthermore, if compared with original NUMA void authorisation study i.e., Residual Void study (RVS) by Rio Tinto (2017), the NUMA void size could have increased. This is because the Rio Tinto study provides surface area of voids and not residual void area. As such, to demonstrate efforts to reduce NUMA void size, DETSI recommends: • In-depth assessment of options to completely backfill and rehabilitate new Homevale pit and the proposed Exevale pit extension to RE 11.9.9 post closure. Area underlying Homevale pit provides great connectivity between the park and Hail Creek riparian corridor via Biodiversity corridor and Exevale proposed extension area is also home to high quality Koala habitat; and • Reducing size of Carrinyah pit extension as it is one of the largest amendment area, with mostly high and medium value koala habitat. As noted above, this area also provides connectivity along a small, treed waterway running NNE toward the park.	The applicant is required to: - Provide modelled water quality data for all proposed NUMA voids to demonstrate poor water quality including any trends and timeframes to achieve equilibrium; - Provide further details about how backfilling is not economic; - Provide comparison of residual void area (and not surface area) between this amendment (including original application and IRR) and original authorisation (RVS by Rio Tinto, 2017); - Provide further details about how NUMA pits size has been minimised. In particular, consideration of options to completely backfill and rehabilitate the new Homevale pit and the proposed Exevale pit extension and reducing the size of Carrinyah pit extension. The response to this additional IR item will also demonstrate further mitigation measures to minimise impacts on PEMs.	- Section 3.4.5 of the IRSR Report and section 5.6.1 and table 5-9 of Appendix D – Replacement Surface Water Impact Assessment. - Section 3.4.5 of the IRSR Report. - Section 3.4.5 of the IRSR Report. - Section 3.4.5 of the IRSR Report.

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22	Section 14.2 of EAR (v3) states that, “The predominant PMLU for HCOC with the Project as a whole is proposed as grazing which is in accordance with the current conditioning in the EA and consistent with the pre-mining land use (Figure 51).” Firstly, the HCOC EA also includes provisions for native ecosystem PMLU. Secondly, the problem with a pure ‘grazing’ PMLU is that can lead to intensification of grazing with improved pastures in comparison with the pre-mining land use of ‘grazing native vegetation.’ This is because there’d be no requirement to retain/reinstate native vegetation cover. The vegetation cover should remain/be reinstated as native ecosystem. Please note that native ecosystem does not preclude light grazing. This is especially important for the biodiversity corridor located in the north of ML4078 which has high elevation (slopes >15%) and native vegetation and having grazing in these areas is neither suitable nor supported. It is noted that the buffer zone of biodiversity corridor includes portions of the extension areas namely Areas 1, 2 and 3.	The applicant is required to provide an updated rehabilitation plan for the Hail Creek Eastern Extension that includes commitment to maintain/reinstate native vegetation, especially in areas not disturbed by mining. The draft EA for the project must include clear PMLU / NUMA outcomes for the Eastern Extension disturbance domains.	Section 3.4.6 of the IRSR Report.
23	The IRR to formal IR item# 35 states that referral under the Environmental Protection and Biodiversity Act 1999 (EPBC Act) is yet to be lodged with Commonwealth Department of Climate Change, Energy, the Environment and Water.	Provide details about any update and timeline for the EPBC Act referral.	Section 3.4.7 of the IRSR Report.
24	The impact areas described for the MNES values of koala (599.55ha) and squatter pigeon (600.17ha) are at variance to the impacted area of 597ha elsewhere in the provided documents. This needs explanation.	Please address impacted area inconsistency for koala and squatter pigeon habitat within and amongst different documents provided as part of formal IR response.	Section 3.4.8 of the IRSR Report and Appendix H – Replacement Ecological Impact Assessment.
Noise – Appendix J			
25	In section 3.1.1. of Appendix J, the applicant has noted some inconsistencies regarding noise limits prescribed in Table D1 of the existing HCOC EA. DETSI further notes that significant impact from the mine on R1 Fort Cooper. LAeq of 57 during the night is very unusual for a remote location. Although the LAeq levels for the other locations are within acceptable, all L90 levels appears to be quite high	Based on identified issues, DETSI recommends replacing existing noise limits table with following Table 2 in the amended EA.	Section 3.5.1 of the IRSR Report.

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	(40dB) where the 2014 baseline level indicates L90 at night were less than 25dB (acoustically pristine). DETSI recommends the below updates to the existing noise Table: • Some of the receptors are listed in both commercial and residential places which does not seem correct. If sensitive place limit are applied, it will automatically protect the commercial place limits; • The noise table must also include maxLpa* for sleep disturbance only; • Remove LA1 as its not appropriate for environmental noise anymore; • The updated EPP (Noise) also does not differentiate between days of week; • It would be appropriate to combine all sensitive receptors (and moonlight camp) and apply existing SR1 (Fort Cooper) noise limits for the facts that: - Mine is already operating with these noise limits for one sensitive receptor (SR). - There are no noise complaints or commercial places. - Predicted noise levels (table 5-1 of appendix j) at all these SR indicates components noise level is less than 30(i.e., low). - The noise limits for Carrinyah and all other SRs are also high - than EPP, AQO. For HNP, as per the application, noise impacts to the park are not anticipated based on following: • Noise monitoring has not been completed within the park and noise monitoring results for R2 Carrinyah Station have been suggested to be representative given its proximity to the park;		

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	- The noise levels of up to 55 dBA are predicted along the south-western boundary of Park (i.e. the area closest the mine) and 30 dBA limit (LAeq MMC noise limit) is predicted to exceed the cover approximately 7% or less of the park; and - The closest point of interest within the park is the Moonlight Dam recreation area located approximately 10km from the mine. The noise levels are predicted to be in the order of 17 to 22 dBA LAeq at this recreation area. It is well documented that wildlife can be impacted by noises from industries but depends on frequency (low frequency) and species. DETSI also acknowledges that 45-50dB in a natural ambient noise is quite normal. As such, DETSI suggests adding condition for no impacts from low frequency noise and set a daytime and evening LAeq of 40dB and nighttime of 30dB for the park.		
Dust – Appendix H of IRR			
26	Section 4.1 of Air Quality Impact Assessment (AQIA) report indicates that air quality monitoring network comprises the following: - One automatic weather station measuring a range of parameters, with wind speed and wind direction being the most relevant data to this assessment; - Two Beta Attenuation Monitors (BAMs) measuring 24-hour average PM10 concentrations; - One E-Sampler measuring PM10 concentrations; - Two E-Samplers measuring TSP and PM10 concentrations; and - Five dust deposition gauges (DDGs). The EA condition B4 indicates that the monitoring of particulate matter (PM10 and TSP), meteorological conditions and dust deposition must be conducted in accordance with the method specified in “EA Table B1 - Ambient air quality limits”. The monitoring methods specified in the EA which are also listed in Table 3-3 of the AQIA report are based on Australian Standards.	Please discuss the accuracy of PM10 monitoring data collected using an E-Sampler based on manufacture specifications.	Section 3.6.1 of the IRSR Report.

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	Whilst BAMs is an Australian Standard for measuring PM10, E-Sampler is not based on any Australian Standards. Therefore, the accuracy of the data collected using E-Sampler is questionable.		
27	The report indicates that there are two BAMs located at the site, but there was no data available from the Hail Creek East BAM and therefore it is not considered any further. It is not clear why there was no data available from the second BAM monitoring site. It is noted that Aa1 E Sampler is co-located with the BAM (refer Table 4-3). The measured PM10 concentrations of Aa1 E Sampler are not provided in Table 4-4. The data from these two monitoring devices must be used for comparison.	The applicant is required to: a) Discuss that why there was no data available from the Hail Creek East BAM monitoring site; b) Provide PM10 monitoring data collected using Aa1E-Sampler; and c) Compare the measured BAM data with the measured Aa1 E Sampler data.	Section 3.6.2 of the IRSR Report.
28	The 24-hour average and annual average PM10 concentrations were calculated using the validated measured 1-hour average data collected between January 2019 and October 2022. It is not clear why the latest monitoring data collected between November 2019 and recent months of 2025 was not provided with the report.	Provide the latest monitoring data collected between November 2019 and recent months of 2025.	Section 3.6.3 of the IRSR Report.
29	The formal IR Item# 16 recommended that the applicant re-evaluate the suitability of existing air monitoring network for proposed expansion. Otherwise, provide quantitative assessment (i.e., updated air dispersion modelling) of potential air impacts form the proposed expansion. The response indicates that HCOC is not considered a high-risk site in relation to adverse air quality impacts to receptors, as all receptors are located outside of a 2km radius of the open cut operations. It's not clear that what is the basis for the selection of 2km radius. Furthermore, there is no evidence provided to demonstrate the absence of adverse effects beyond 2 km radius and PM10 exceedances at the sensitive receptors. In addition, the IRR (section 4.3 of the AQIA) does not consider HNP as a sensitive receptor despite numerous studies reporting negative impacts of coal dust deposition on vegetation (Farmer, 1993; Doley, 2006; and Doley & Rossato, 2010). The impact of coal dust on HNP was not discussed in the report. It is noted that the dust deposition	Based on details provided in right hand side column, please: a) Provide an updated air dispersion modelling study must be conducted to determine the cumulative impacts of the project on the receiving environment including all existing sensitive receptors and HNP; and b) The cumulative impact assessment must include emission sources from approved and proposed operations and background concentrations and predict TSP, PM10, PM2.5 concentrations and dust deposition at the sensitive receptors. In this regard, the Department guideline "Application requirements for activities with impacts to air" is a useful resource.	Section 3.6.4 of the IRSR Report and Appendix I – Air Quality Impact Assessment – Dispersive Modelling.

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	data collected at the DDG A2 which is located on the eastern side of the mining lease, approximately halfway between Proposed Amendment Area 3 and Proposed Amendment Area 4 (refer to Figure 4-1) indicates three exceedances between 2020 and 2022 from the approved operation. It is noted that haulage distances from the proposed pit areas to the CHPP will be longer, leading to an increase in wheel-generated dust emissions compared to the approved mining areas. In addition, the measured 24-hour average and annual average PM10 monitoring data presented in Table 4-4 of the report shows exceedances of PM10 and dust deposition criteria at the monitoring locations and not the sensitive receptors. Therefore, the data cannot be compared against the EPP (Air) objectives and the EA limits. It is also reported that the calculation of 24-hour average and annual average values were validated only if at least 75% of the samples in the averaging period were available. Table 4-4 indicates that only about 50 percent of the data collected for three years period between 2020 and 2022 is valid. The remaining 50 percent is considered as invalid/insufficient, as a result it is not provided in this table. This indicates that the current ambient air quality data used in the report is not adequate. Therefore, it is difficult to understand the number of exceedances above the EPP (Air) objectives. Additionally, there is no PM10 monitoring stations near sensitive receptor R1 which is about 4 km south of the proposed Area 4. The wind-rose diagram presented in Figure 4-3 indicates significant percentage of time when the wind is blowing from north to south (particularly in autumn). Therefore, it is not possible to predict PM10 concentration at receptor R1 based on the measured data at other monitoring locations. Considering proximity of mining area 4, there is a possibility that PM10 may exceed the air quality objectives/licence conditions at receptor R1. It is also to note that page 15 of the report states: “modelling has also indicated that there are no potential exceedances of current licence conditions or regulatory Standards.” It is not clear which modelling this report is referring to. Section 5.1 of the report talks about modelling and indicates that the actual progression of the mining is		

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	differed from that assumed in the 2015 Air Quality and Greenhouse Gas Assessment report prepared by Todoroski Air Sciences, and the emission inventory and predicted impacts for the modelled scenario are unlikely to be representative of current impacts. The measured meteorological data of the site was also not available in 2015. As a result, Todoroski most likely has used simulated meteorological data which is not as accurate as the local measured data. Therefore, it is not possible to assume that there are no potential exceedances of current licence conditions or regulatory standards at the sensitive receptors. In summary the air quality impact assessment presented in the report is unable to assess the potential impacts of the increased disturbance area on local air quality and the requirements of any further air quality monitoring, modelling and mitigation practices. It is concluded that the information provided with the response and the revised report are insufficient to support the hypothesis that impact assessment modelling is not required. References: • Andrew M. Farmer, The effects of dust on vegetation—a review, Journal of Environmental Pollution, 79 (1993), pages 63-75. • Doley, D, 2006, Airborne particulates and vegetation: Review of physical interactions, Clean Air and Environmental Quality 40 (2), 36-41. • Doley, D. and Rossato, L. (2010) Mineral particulates and vegetation: modelled effects of dust on photosynthesis in plant canopies. Air Quality and Climate Change 44 (2), 22-27.		
Waste management			
30	Table 55 of EAR (v3) shows estimated non-mineral waste to be produced by the Project and includes three (3) main waste categories such as regulated, general and recycled. The applicant also states that these waste types are same as the current operations; therefore, no unique waste management methods are required.	The applicant is required to: - Clearly determine the need for adding ERA 54 and 62 in the HCOC EA; and - Provide evidence of engagement with IRC about waste disposal matters.	Section 3.7.1 of the IRSR Report.

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	DETSI notes that in Table 56 of EAR (v3) the applicant states that, “recyclable waste must be transferred to a material recovery facility and if throughput exceeds ERA thresholds current ERA licence may be required for: - ERA 54 – Mechanical waste reprocessing - ERA 62 – Resource recovery and transfer facility operation.” The applicant must clearly determine throughput and if ERA 54 and 62 should be added to the HCOC EA. DETSI also notes that in Table 57 of EAR (v3) the applicant states to dispose all general waste at Isaac Regional Council (IRC) Hogans Pocket Landfill. The proposed amendment is expected to produce 11,046 tonnes of general waste. It is recommended that the applicant engage with IRC about additional general waste and relevant issues like capacity of proposed landfill as alternatives may need to be proposed.		
Social			
31	The application also lacks details about social impacts of proposed amendment such as any increase in workforce, their accommodation and transport matters (and whether it will be to and from Glenden) and consultation with sensitive receptors (i.e., Carrinyah Homestead). Evidence of engagement with relevant stakeholders will help DETSI in thorough assessment of the application as the engagement might result in changes in the proposed amendment that in turn might have different environmental impacts. This information is required to ensure compliance with standard criteria (s.176 & schedule 4 EP Act) which requires to consider public interest.	Please provide details of social issues relevant to the proposed amendment, including but not limited to: a) Any increase in workforce and their accommodation and transport matters. If there is increase in workforce and Glenden will be used to provide accommodation, then please engage with IRC about the matter and provide details; and b) Community consultation in particular with the residents of homesteads/stations near the mine (i.e., Carrinyah station residents/owners) and provide details of their concerns and how those concerns have been considered in the proposed amendment.	Section 3.8.1 of the IRSR Report.
Spatial data			

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32	The updated spatial files are required to show following: • Residual voids; • 0.1% AEP; • Map layer of A, B, C categories (as per HCOC EA) including authorised exploration disturbance; and • Area authorised for underground mining.	Please provide spatial files showing: • Residual voids; • 0.1% AEP; • Map layer of A, B, C categories (as per HCOC EA) including authorised exploration disturbance; and • Area authorised for underground mining.	Section 3.9.1 of the IRSR Report.