



Fimiston Gold Mine Operations Extension (Stage 3) and Mine Closure Planning: Revised Proposal Fimiston South Project

Revised Response to Public Submissions Fimiston South Project

**4 December 2024
EPA Assessment 2354
DWER ref: APP-0000265**

Revision 2.3

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Document Versions

| Version | Date issued | Document Changes |
|-----------|------------------|--------------------------------------|
| 1 | 30 July 2024 | Response to Public Submissions RFI 1 |
| 2 | 30 October 2024 | Response to Public Submissions RFI 2 |
| 2.1 | 21 November 2024 | Additions to RFI 2 |
| 2.2 & 2.3 | 05 December 2024 | Further adjustments / additions |

1 PURPOSE OF DOCUMENT

This document has been developed as part of Northern Star's KCGM consultation and approval process to provide further information and clarification to key stakeholders regarding the potential extension of the Kalgoorlie Consolidated Gold Mines (KCGM) Fimiston Operations (the Proposal) as outlined in the Public Environmental Review: Fimiston Gold Mine Operations Extension (Stage 3) and Mine Closure Planning, March 2024 (PER).

The PER document was available for a public review period of four weeks from 25 March 2024 closing on 24 April 2024. Six public submissions were received for this project by the Department of Water and Environmental Regulation (DWER) Environmental Protection Authority (EPA) Services and these have been provided to KCGM (with the names of private individuals removed). Agency submissions were received from DWER, the Department of Biodiversity, Conservation and Attractions (DBCA) and the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

2 SUMMARY OF SUBMISSIONS

2.1 Government agencies

Comments were received from three government departments. The government departments who submitted comments in relation to the ERD are:

- Department of Water and Environmental Regulation (DWER)
- Department of Biodiversity, Conservation and Attractions (DBCA)
- Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)

A summary of the responses received are provided in the sections below. Responses to their detailed comments are provided in the Agency Comments table under each factor in Section 3.

2.1.1 Department of Water and Environmental Regulation (DWER)

DWER provided a submission that raised a number of matters in relation to the Revised Proposal and these are summarised below.

Flora and Vegetation

- Clarification on potential novel taxon *Streptoglossa aff. Cylindriceps* that may occur in the Proposal Area.
- Justification of the 50 m buffer area for indirect impacts.
- Additional information was requested regarding project and cumulative impacts to Priority 2 species *Eremophila praecox*.
- Justification was requested for the clearing of greater than 50% of a local vegetation community (EspEsMg) and greater than 30% of three other local vegetation communities.
- Requested updates to column headings in Table 27 of the ERD.
- Updates to weed species names in the Significant Species Management Plan (SSMP) and updates to the weed management procedure.

Terrestrial Fauna

- Updates to be made to Table 38 in reference to proportion and fauna habitat in hectares similar to that for Flora in Table 27.
- Corrections and areas consistently applied to fauna habitats including for SRE species and Malleefowl.
- A separate table to be included describing Malleefowl habitat and clarification of 'extrapolated habitat'.

Inland Waters

- Requested information on the reinjection of mine dewater into the Kaltails borefield for assessment.

Air Quality

- Review the AQMP to include the allowable number of PM₁₀ exceedances, provisions of data availability and reviews of actions and alert levels.
- Update to the new NEPM goals.

Greenhouse Gas.

- Define sources of emissions in relation to project phases.
- Waste and recycling emissions are included in Scope 1 and Scope 3.
- Include methodology for calculating emissions.
- Define clear baselines. Update to emissions intensity baselines as Safeguard Mechanism methodology has changed.
- Baselines used at commencement not clearly presented in figures.
- Include trajectory of emissions reduction as per section 3.2 of the GHG EMP template.
- Include information on how mitigation methods align with best practice.
- Provide more information on Scope 1 mitigation measures.
- Outline benchmarking assessment to justify approach, comparison of emission intensities for each facility.
- Include emissions reductions as relevant to the Southwest Interconnected System (SWIS) (Scope 2).
- Justify Scope 3 inclusions and exclusions.
- Provide new graph showing the 4.9% SGM reduction.
- Provide further information on offsets and proposed estimates of emissions to be offset.

2.1.2 Department of Biodiversity Conservation and Attractions (DBCA)

DBCA provided a submission that raised a number of matters in relation to the Revised Proposal and these are summarised below.

Flora and Vegetation

- DBCA requested more comprehensive management for Priority 2 species *Eremophila praecox* to be added to the SSMP.
- Removal of references to the conservation status of Priority 2 species *Eremophila praecox*.

Terrestrial Fauna

- DBCA requested more clarification on direct and indirect impacts on *Jalmenus aridus* (P1) with a focus on avoidance wherever possible.
- Provide investigations and references relating to the relocation of egg material as an appropriate management action for *J. aridus*.
- Address deficiencies in the SSMP in relation to *J. aridus* in relation to:
 - a. information on threats and mitigation strategies;
 - b. appropriate triggers, thresholds and contingency actions;
 - c. collection of baseline data;
 - d. appropriate measures for habitat health and plant condition; and
 - e. detailed monitoring methodologies.
- More information on risk-based management for SREs
- Further surveys to clarify extent and impact of the proposal on *J. aridus*

2.1.3 Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)

Closure

- Include information on *J. aridus* in the Mine Closure Plan (MCP) and include as knowledge gaps and further work required. Would like to see included in the objectives and closure outcomes.
- Update MCP to include pit backfill.
- Reviewed MCP to include:
 - a. Information on flood velocity impacts on landforms
 - b. Field trials of the closure design
 - c. Accelerated progressive rehabilitation for TSFs
 - d. Alternative bank stability methods
- More information on tailings characterisation.
- Outline monitoring planned for contamination risk to soils.
- Provide clear revegetation targets for each closure domain proposed to be 'modified landscape'.
- Whether fencing 'zones of restricted access' is the most effective long term management method.

Inland Waters

- More information on the Eastern Floodway diversion design and why this is the best option.

2.1.4 Public submissions

A total of six public submissions were received in response to the Revised Proposal ERD. While the public submissions raised similar issues to those raised by agencies, as described above, there was a greater emphasis in the public submissions on social surroundings issues that would directly affect the people of Kalgoorlie-Boulder.

Broadly the key issues raised by members of the public were:

Flora and vegetation

- Destruction of 'pristine' vegetation due to TSF seepage and contamination.

Inland waters

- Placement of new TSF having impacts on water dams downstream and the local aquifer upstream.
- Concern that there is not enough detail in some impact categories such as 'Infrastructure Water Management' and concerned that the impacts can't be adequately determined and would require more consultation to understand.

Social surroundings

- Concern about mine development envelope (MDE) encroaching onto land not owned by Northern Star.
- Impacts on the tourist mine.
- Concerns that the Community Reference Group (CRG) does not represent the community and then leaves gaps with reference to closure planning, rehabilitation and safety protocols.
- Concern about the destruction of historic heritage places.
- Concern that geotourism is not considered enough in the proposal.
- Concern that Aboriginal Elders have not been sufficiently consulted particularly with reference to possible graves at the proposed TSF location.
- Concern about the duration and size of blasting in the evenings.
- Concern that mining would occur within less than 400 m of dwellings to as close as 200m.
- Concern that A noise level of up to 130 dB only on day shift and not on Sundays will affect shift workers and those at home on Saturdays.
- Concern that the location of new TSF will increase noise and dust issues particularly during construction.
- Concerns that the lack of rehabilitation on WRD is contributing to the dust issues and that WRD should be located further from town.
- Concerns that a Regulation 17 approval would further increase noise levels (and dust levels) and have negative impacts on amenity and other environmental factors.

Air Quality

- Concerns that dust is not being adequately managed and is impacting on quality of life.
- Concerns about dust and flyrock having a significant impact.
- Request that Northern Star should start monitoring for PM_{2.5} dust concentrations with more monitors located in Boulder, Williamstown and other parts of Kalgoorlie Boulder.

3 RESPONSE TO SUBMISSIONS

3.1 Air Quality

Issues that have been identified as relating to the EPA Environmental Factor for Air Quality, are also raised under the Environmental Factor for social surroundings and have been outlined and addressed in Section 3.7.

3.2 Stakeholder consultation

3.2.1 Agency submissions

KCGM did not receive any submissions from government agencies in relation to stakeholder consultation for the proposed project.

3.2.2 Public submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
|-----|------------------------|--|---|
| 1 | Private Submitter 4 | <p>By not detailing what is proposed within those broad categories it is really impossible for any lay member of the public or even highly educated people to actually make a comment on the acceptability of meeting environmental requirements because it could be anything in these areas with broad general categories.</p> <p>Northern Star should be made to do further detailed public consultation showing specifically what they propose in the specific areas I have referred to including the dimensions of height, length and width. Any clearing proposed, what is stored or located and what are the anticipated impacts of these specific things will be so people can then actually properly comment on what's proposed.</p> <p>The Mine development envelope encroaches on areas near Ninga Mia which are not owned by Northern Star and the EPA should not be approving a mine development envelope on land which they do not own as in theory it allows the proponent to cause pollution and mining on land</p> | <p>Document format KCGM is required to follow the layout of the Environmental Review Document (ERD) specified in the Environmental Protection Authority (EPA) guidance for preparation of an ERD. The intent is to break down impacts by environmental factor to meet the environmental objectives for each factor. The scientific data is complex and detailed and can be difficult to understand. We have made every attempt to explain this in lay terms throughout the document.</p> <p>Mine Development Envelope and disturbance areas The Mine Development Envelope (MDE) represents the extent of the biological survey and assessment for the Revised Proposal. This allows one to see, for example, vegetation types adjacent to the disturbance areas. Actual disturbance areas are contained within the MDE, with an assigned activity for each area. KCGM has undertaken extensive consultation with respect to the Revised Proposal. A list of broad engagements made by KCGM with respect to the proposal is attached to this response (Appendix A)</p> |

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| | | <p>which they do not own otherwise what is the real purpose of showing a mine development envelope.</p> <p>The Mine development envelope encroaches on areas near Ninga Mia which are not owned by Northern Star and the EPA should not be approving a mine development envelope on land which they do not own as in theory it allows the proponent to cause pollution and mining on land which they do not own otherwise what is the real purpose of showing a mine development envelope.</p> <p>I also have other concerns where people are living and working close to the proposed activities and none of these people are aware or have even been consulted about this proposal so the whole thing is a disgrace. I reiterate I support mining but I do not support this type of rubbish where the people whom are the closest stakeholders from the negative impacts have had no consultation whatsoever. These people have not even been consulted to find solutions for the project to proceed. For that reason alone it makes the whole thing that Northern Star is trying to do a total fraud and manipulation of the people whom are most affected because they are the closest.</p> <p>Northern star has destroyed and slowly made the tourist mine die progressively in this town. It should be a world class tourism and mining show case with a operating underground tourist mine along with the mining and prospecting history. Instead it's a dishonour for what Northern Star and its subsidiary companies have ripped out of the ground with billions of dollars and given the community very little in return taking away key historic infrastructure and allowing key heritage infrastructure of the town to slowly fade away.</p> <p>Northern Star has also taken away the Loopline track with expanding mining operations and made sure the Loopline never runs again from the impacts of its mining operations. They should be regretful for all the negative consequences and impacts they have had on the whole environment for Kalgoorlie Boulder.</p> | <p>Stakeholder Engagement). Notably, there was a specific focus on nearby residents to the mine through letter drops and open invitations for consultation, inclusive of community information sessions. In addition to these specific engagements, KCGM has also sought to inform the public and raise general awareness of the proposal through radio and newspaper advertising, talk back radio segments and ASX releases. These broad reaching methods have outlined how listeners and readers could access more detailed information. The public consultation documents provided by KCGM in both hard and electronic forms to anyone who requested them; the documents were also available on the EPA website and made available in hard copy at various public venues such as the Kalgoorlie and State libraries. These documents contained detailed and specific information regarding the Revised Proposal. Documents and information were prepared in a format consistent with EPA requirements.</p> <p>Proximity to proposed activities</p> <p>The Revised Proposal presented by KCGM does not move mining activities any closer to the Ninga Mia settlement than existing approvals.</p> <p>Tourism</p> <p>KCGM is a strong supporter of tourism in the Goldfields. While tourism is not the focus of its business, KCGM has financially and with in-kind donations supported regional tourism. KCGM notes that the past 3-4 years have been difficult for tourism, first with COVID impacts and border closures and then with limited accommodation and high prices for visitors to the Goldfields Region. The Australian Prospectors and Miners Hall of Fame and the Hannans North Tourist mine was established in 1991 and continued to operate until 2011 when it closed due to financial distress. In 2013, KCGM re-opened the Hannans Tourism Mine and has continued to inject financial support into the tourism precinct to ensure it continues to exist as a</p> |

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| | | <p>In my view the people who have supported this project should be ashamed of themselves for supporting this proposal when they have allowed to company to rip the living guts out of the whole town with expanding mining operations and only making sure the wealthy or affluent people in the town get some benefit. It reminds me of why in the Aboriginal population the gap never closes in many areas because the purple circle of particular people don't act in the best interests of all the people, but rather the purple circle only help the wealthy and affluent people. No wonder we have so many problems in our society and in Kalgoorlie Boulder."</p> | <p>tourism feature despite operating at a loss. Due to these cost pressures, it has not been viable to open some of the pre 2012 activities such as the underground tour which would require significant upgrades to comply with modern public safety requirements. KCGM plan to continue to facilitate the operation of the Tourist Mine into the foreseeable future, upgrading features as funding allows. In addition, KCGM allows for a tourism bus to operate within the mine's operational area allowing the public to safely view an operating mine for no profit to KCGM. The Public Lookout is a major tourist attraction in Kalgoorlie and KCGM has committed to maintaining a public lookout into the future while operations allow it to be safe to do so.</p> <p>Loopline The changes to the Loopline track predate this proposal. No impacts to the Loopline were identified for this Revised Proposal.</p> <p>Social Impact The Fimiston South Project is integral to KCGM continuing to operate, providing over 1200 full time jobs to the residents of Kalgoorlie-Boulder and supporting a significant number of local small business within the city. KCGM and its contractors recruit over 200 individuals per year, the vast majority being entry level roles for which KCGM provides full training. KCGM is an equal opportunity employer and enjoys a highly diverse workforce. We are proud to be able to provide meaningful and secure work to our staff, supporting contractors and suppliers. KCGM and Northern Star have an extensive social investment program predominantly aimed at supporting disadvantaged and people in need within the City of Kalgoorlie-Boulder and the near region. Additionally, KCGM and Northern Star provide significant support to other services such as the RFDS and the Y (YMCA), who provide community services to all. Details of these and other support programs can be found in the</p> |

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| | | | Northern Star sustainability report which is released to the ASX annually. |

3.3 Flora and Vegetation

3.3.1 Agency Submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 2 | DWER | The draft ERD listed a potential novel taxon <i>Streptoglossa</i> aff. <i>cylindriceps</i> as occurring within the project area. This species is not listed in the revised ERD, Appendix L or Appendix H. Clarification should be provided about outcomes of the investigation into this species. | A specimen of this population was sent to the WA Herbarium for verification and was determined to be <i>Streptoglossa liatroides</i> , which is not a species of conservation significance. This new information meant that the species did not need to be included specifically in the final ERD released for public comment. |
| 3 | DWER | Indirect impacts were assumed as being restricted to 50 m beyond the direct disturbance footprint with insufficient substantiating evidence. This does not appear to have been rectified, but instead further explanation has been given to the 50 m buffer within the ERD (p.117). The further explanation does not give confidence that adequate consideration has been given to a scenario where indirect impacts from the Proposal extend beyond the 50 m buffer. | <p>The 50m distance is based on the DWER Clearing Regulation Fact Sheet 24: Environmentally Sensitive Areas (August 2014), which provides guidance that a 50 distance is considered sufficient to minimise any potential indirect impacts.</p> <p>It is KCGM's intention that vegetation outside the development area will not be adversely impacted. In addition, there is reasonable confidence that impacts to flora and vegetation will not occur outside the MDE as the current operations have been conducted without impacts beyond the boundary and certainly not beyond 50m.</p> <p>As described in item 23, regarding seepage and groundwater, KCGM has demonstrated the ability to effectively implement adaptive management through the Seepage and Groundwater Management Plan. In this case, the impacts were identified and management practices implemented which reduced/reversed/eliminated the impact being observed.</p> <p>KCGM has other management plans in place for significant environmental factors, such as the Fimiston Air Quality Management Plan, to ensure adequate controls are in place to reduce the impacts of dust on vegetation. The management and monitoring actions and the trigger and threshold criteria outlined in the SSMP are appropriate management measures to protect significant flora and fauna and are supported by the peer reviewer.</p> |

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| | | | <p>Indirect impacts are unlikely with these controls in place, and it is extremely unlikely that indirect impacts will occur outside the immediate vicinity of the operational footprint. KCGM has advice (Rod Eastwood Research Associate, Western Australian Museum, 49 Kew Street, Welshpool) that a 50m buffer distance is appropriate, due to the observed habits of <i>J. aridus</i>. The butterflies tend to stay close to their breeding shrubs and do not spend time resting on the ground. An existing breeding shrub at Fimiston is situated within 20m of a road, with the population still in good health. Observations indicate that direct impacts such as removal of habitat within close proximity does not disturb the butterflies or their breeding behaviour, so long as their habitat remains suitable.</p> <p>The robust monitoring programme proposed in the SSMP will provide early data in the unlikely event this occurs, and regular inspections will identify any impacts outside the boundary.</p> <p>Should impacts occur outside the boundary, it would be responded to in accordance with Northern Star's Incident Reporting Standard (NSR-OHS-008-STA) and Environmental Incident Reporting and Investigation Procedure (NSR-ENV-002-PRO). The response to any impact would vary depending on the nature and extent of the impact. This could potentially include reporting as required to relevant regulators such as submitting a Waste Discharge Notification Form to DWER and/or reporting an Incident or Non-compliance to DEMIRS.</p> |
| 4 | DWER | <p>Cumulative impacts to <i>Eremophila praecox</i> include 22 plants from two previous clearing permits at Northern Star (ERD, Table 32.). Section 6.5.5.3. of the ERD states "13 plants [of <i>E. praecox</i>] are proposed to be impacted by clearing". This totals 35 plants to be cleared from the combined proposal. However, Figure 22 (ERD) shows <i>E. praecox</i> records in excess of 35 within the proposed disturbance area. Recalculation of proposed impacts to values may need to be undertaken to provide confidence in impact assessment.</p> | <p>The drafting of the ERD in relation the <i>Eremophila praecox</i> was not clear when referring to the number of individual plants versus number of populations in the area, the MDE and the proposal footprint. Within the MDE there are 13 populations of <i>E. praecox</i> with 186 individuals within the MDE, of which 126 are in proposed disturbance footprint.</p> <p>Clearing of <i>E. praecox</i> for other known projects amounts to 22 plants and when combined with the plants to be cleared under this proposal is a cumulative impact of 148 plants (126 + 22).</p> <p>The <i>E. Praecox</i> species is most frequently recorded in clay loam soils in Eucalyptus and/or Allocasuarina woodland with a variable understorey, frequently with Acacia. <i>E. praecox</i> is recorded widely in Conservation Reserves (193 plants; 26% of current population; 33% of population after</p> |

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| | | | <p>implementation) including the Kurrawang Nature Reserve, (WA Herbarium 1998), Lakewood Timber Reserve and Bullock Holes Timber Reserve (Phoenix 2020).</p> <p>The total number of populations recorded within approximately 100km radius of Fimiston is 75 and currently known number of plants is 729.</p> <p>The 126 plants are likely to be removed for this proposal represent 17% of the currently know number of plants. Of the 13 populations within the MDE, none of the populations will be totally cleared. There will be some plants remaining from each population. KCGM will be mindful of this and have robust internal controls in place to minimise clearing and prevent unnecessary clearing of <i>E.praecox</i> wherever possible.</p> <p>Mapped occurrences of <i>E. praecox</i> from field surveys were included into KCGM GIS data base and have influenced the design whereby KCGM have avoided known plants (retained without any disturbance).</p> <p><i>E praecox</i> populations have been found across an area of 31,400 km² or 3,140,000 ha.</p> |
| 5 | DWER | <p>The ERD states “Clearing of local vegetation type EspPESMg is greater than 50% (68.7%) of the local mapped extent [...], it is highly likely this vegetation type exists in the broader landscape” (p. 118). Three additional vegetation types are proposed to have more than 30% of their known extent cleared through this proposal (CpSafSs, EIANEp and EsEsMt). Additional evidence is required to verify the presence of these vegetation types outside the development envelope (DE).</p> <p>Note: a decline of <50% of the occurrence of an ecological community may meet the criteria for listing as Endangered and a decline of greater than 30% of an ecological community may meet the criteria for listing as Vulnerable under the IUCN Red List ecological communities (Bland et al 2017)¹.</p> | <p>It is important to note that the vegetation communities that have been provided in the ERD are a subjective terminology which is provided for by the technical experts and is not always consistently applied across ecologists and ecological specialists. It is a mapped descriptive term based on floristic composition to describe differences between vegetation units and is the naming methodology required in the EPA Guidance for Flora and Vegetation Surveys for Impact Assessment (EPA, 2016). Variation in vegetation cover estimates, survey effort, timing, seasonal conditions and disturbance may significantly alter the analysis and therefore the naming. It does not represent a type that is not present beyond the mapped area and similar communities and variants were mapped nearby. Therefore, it is difficult to provide like for like vegetation mapping evidence to demonstrate the vegetation type presence outside the mapped area.</p> <p>Clearing of the EspPESMg vegetation type, which has been noted to be disturbed more than 50% of local mapped extent, is well represented beyond the mapped extent of the proposed footprint and the species within are well represented in other local vegetation types. Local vegetation types were mapped in the study area which included areas outside the MDE and</p> |

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| | | | <p>clearing footprint. Furthermore, when referring to the WA FloraBase, none of the species which comprise this vegetation type are considered to be threatened (<i>Eucalyptus celastroides</i>, <i>E. lesouefii</i>, <i>E. salubris</i>, <i>Eremophila scoparia</i>, <i>Senna artemisioides subsp. Filifolia</i>, <i>Pimelea microcephala</i>, <i>Maireana georgei</i>, <i>Atriplex vesicaria</i>, and <i>Maireana triptera</i>). The vegetation type is not a TEC or PEC and is unlikely to meet the criteria for listing as endangered under the IUCN Red List Communities.</p> <p>There is no wider data set of these vegetation types for context. Other mapping (reconnaissance survey work) beyond the proposal area has mapped the same three eucalypts found within this vegetation type across the region (G. Wells pers. comm.).</p> |
| 6 | DWER | <p>For clarity, in Table 27 (ERD), the column “% to be cleared of study area” should be relabelled as “% of known extent of vegetation type to be cleared”.</p> <p>“All vegetation types occur widely beyond the study area (G. Wells pers. Comm.)” Further evidence should be provided to give confidence to this statement.</p> | <p>KCGM believe that amending the table heading to read "% of known extent of vegetation type to be cleared" would be misleading and incorrect as the study area is of limited size beyond the MDE. It is common for surveys to be limited largely to the MDE or proposed disturbance areas; context beyond the disturbance area is a consideration but is usually limited to a short distance from the project. Survey areas are often limited due to lack of permission to access adjoining land and time available. Table 27 of the ERD reflects the area for each vegetation type that proposed to be cleared within the project footprint compared to the limited area mapped in the study area (slightly larger than the MDE). To infer that this vegetation is restricted to the study area and comparing the impact only to the study area would be misleading to the public as all vegetation types occur widely beyond the study area (G. Wells pers. Comm.). With ongoing monitoring and commitments to environmental enhancement, KCGM will provide relevant information to the regulator in relation to the vegetation, extents, communities and condition if/when additional work is commissioned and carried out on behalf of KCGM or Northern Star.</p> <p>It is common for the mapping beyond the project footprint to have limited extent due to limited access on other's land. The Phoenix botanists who completed this survey have confirmed that this vegetation is common across the region (G. Wells pers. Comm.).</p> |
| 7 | DWER | <p>The Significant Species Management Plan (SSMP) lists weed species found on the KCGM lease (p.14) by common names.</p> | <p>Noted - this has been updated in Section 2.6.4 of the SSMP, with scientific species names added.</p> |

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| | | <p>Scientific names of each species should be used to avoid confusion as common names can often changes over time or apply to more than one species.</p> | |
| 8 | DWER | <p>The Weed Management Procedure (KCGM 2021)² referenced in the ERD (p. 122) and the SSMP (Appendix L, p.16) is not provided and appears to be a general weed management guide and not specific to the Proposal. KCGM 2021 should be reviewed to ensure that the recommended management is relevant to the specific requirements of this proposal.</p> | <p>The Weed Management Procedure has now been appended to the SSMP. The Revised Proposal does not present a change to current operations, but rather an expansion of existing operations and activities, and the management and mitigation actions for weed control currently in place have been assessed by KCGM to be suitable for the management of weeds in relation to the Revised Proposal.</p> |
| 9 | DWER | <p>Based on the information provided in the ERD, it is difficult to assess impacts to priority species <i>Eremophila praecox</i> (P2). An additional investigation has been carried out and cumulative impact assessment has calculated direct impacts to 7% of the known local population (including 3% from this assessment) (ERD, p.122). However, information provided in the ERD is contradictory at times. For example, Figure 22 does not confirm values presented in the Assessment of Impacts section (6.5.5) of the ERD. Re-assessment of direct impacts to <i>E. praecox</i> should be undertaken to provide confidence and should be updated accordingly to provide clarity.</p> | <p>The drafting of the ERD in relation the <i>Eremophila praecox</i> was not clear when referring to the number of individual plants versus number of populations in the area, the MDE and the proposal footprint. Within the MDE there are 13 populations of <i>E. praecox</i> and there are 186 individuals. Of these 126 are within the proposal footprint.</p> <p>The <i>E. Praecox</i> species is most frequently recorded in clay loam soils in Eucalyptus and/or Allocasuarina woodland with a variable understorey, frequently with <i>Acacia</i>. <i>E. praecox</i> is recorded widely in conservation reserves including the Kurrawang Nature Reserve, Lakewood Timber Reserve and Bullock Holes Timber Reserve (Phoenix 2020).</p> <p>The total number of populations recorded within a 100km radius of Fimiston is 62 (excluding the 13 populations that intersect the MDE) and currently known number of plants is 729 (Phoenix 2024). Of those individuals, 193 (26%) occur within Reserves.</p> <p>A maximum of 126 plants are likely to be removed for this proposal, representing 17% of the currently know number of plants. Of the 13 populations within the MDE, none of the populations will be totally cleared. There will be some plants remaining from each population. KCGM will be mindful of this and have continue to implement existing robust internal controls in place to minimise clearing and prevent unnecessary clearing of <i>E.praecox</i> where ever possible.</p> <p><i>E praecox</i> populations have been found across an area of 31,400 km² or 3,140,000 ha. The removal of 1580 ha of <i>E. praecox</i> habitat equates to 0.0005% of the known range.</p> |

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| 10 | DBCA | <p>Further information is required to appropriately identify and describe the proposed management measures, monitoring program(s), triggers/thresholds, and contingency actions to be implemented as a part of the SSMP. It is important that best practice management is implemented by the proponent to maintain viable populations of Priority flora and fauna through avoiding/minimising and applying specific mitigation actions. DBCA has identified deficiencies in the SSMP, that should be addressed to inform management for the Priority flora species, <i>Eremophila praecox</i>, including, but not limited to:</p> <ul style="list-style-type: none"> · information on threats and mitigation strategies; · appropriate triggers, thresholds and contingency actions; · collection of baseline data; · appropriate measures for habitat health and plant condition; <p>and</p> <ul style="list-style-type: none"> · detailed monitoring methodologies. <p>The RtS documentation does not appear to have adequately addressed items 10, 17, 19, 20 and 21, consequently DBCA reiterates previous DBCA advice dated 19 April 2024 remains relevant. DBCA acknowledges the survey work KCGM has undertaken to date to improve knowledge on the distribution and ecology of <i>J. aridus</i> and recognises the challenges associated with surveying this species. However, the information provided does not quantify the regional populations and KCGM has not provided details on the location and scope of further surveys to be undertaken. Therefore, given the lack of knowledge on regional populations, the Fimiston population remains the largest known population of <i>J. aridus</i>, and the potential impacts from the implementation of the project remain significant.</p> | <p>The SSMP has been specifically prepared to manage the threats of impact on <i>E.praecox</i> and other conservation significant species. Furthermore, KCGM has provided the SSMP to Dr Mark Brundrett, Adjunct Associate Professor, Biological Sciences, the University of Western Australia, provided a peer review of the SSMP, in relation to its adequacy for the management and protection of <i>E.praecox</i> (Appendix B of this document).</p> <p>Threats are addressed in Section 2.3.1 and Mitigation strategies are outlined in Section 2.8 and Section 2.9 of the SSMP. Triggers, thresholds and contingency actions are addressed in Section 3.1.1 where a complete table devoted to these aspects for <i>E. praecox</i> is presented.</p> <p>Eleven vegetation surveys have been undertaken in the Revised Proposal area or in association with the project in the last ten years with three undertaken as specific targeted surveys for <i>E. praecox</i>, to map local occurrence, determine regional persistence and to confirm presence in DBCA reserves. Habitat within the Revised Proposal area but outside the clearing footprint will be protected and monitored annually for vegetation and habitat health. This monitoring is described in Section 2.10 and Appendix B of the SSMP. A detailed monitoring program will be prepared and undertaken by botanists.</p> <p>By their nature <i>E. praecox</i> populations are frequently sparse, comprised of a low number of individuals, sometimes spaced hundreds of meters apart.</p> <p>Subsequently, to monitor for potential indirect impacts within the MDE the condition of the vegetation surrounding <i>E. praecox</i> individuals will be conducted and compared to the condition of vegetation surrounding regional <i>E. praecox</i> populations that occur outside of the area of potential impact.</p> <p>Monitoring of <i>Eremophila praecox</i> will be undertaken annually. The updated the monitoring plans in the SSMP as advised by DBCA.</p> |

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| | | | <p>Annual spring surveys will continue to contribute to the baseline data on this species and while additional data analysis is working towards an understanding of regional populations analysis is continuing and will incorporate new data as it is collected.</p> <p>Recent mapping (Phoenix, 2024) has recorded 729 individual plants in a 100km radius of the Fimiston Proposal. There are 75 populations recorded of which 13 are within the MDE. Of the populations within the MDE individual plants will be removed but no population will be removed in its entirety.</p> <p>A monitoring plan for <i>E. praecox</i> is included in Appendix B of the SSMP. This monitoring plan sets out the monitoring locations for the remnant floodway population as well as two reference sites (south along Borefield Road).</p> <p>Monitoring for both species will be annual as outlined in the SSMP (Section 2.10 and Appendix B). References to triennial monitoring have been removed from Section 3.</p> <p>Consideration for collection of seed was considered when developing the SSMP, but was determined to not be a viable option. Surveys for the species conducted as targeted searches for detailed flora surveys or targeted searches have recorded the species in flower/fruit during multiple months of the year. Only a small proportion of the plants recorded in any survey were flowering/fruited and no survey has been conducted where a high proportion of plants observed were reproducing. These factors provide logistical problems for monitoring the species for seed harvest and for seed harvest as field teams would be required to cover large areas to visit even a low number of plants. From the sporadic flowering and fruiting of the species it appears unlikely that many fruit/seed may be collected at a given time. It is likely <i>E. praecox</i> may have low germination rates and that any seed collected is likely to become inviable over a short period. These factors may prevent acquiring adequate seed resources for research as it is unlikely that a high amount of seed of the species may be harvested at</p> |

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| | | | any time and probable short period of viability indicates it may not be possible to store seed to build up a sufficient amount for research purposes. |
| 11 | DBCA | The ERD includes reference to discussions with DBCA regarding the revision of the conservation status of <i>Eremophila praecox</i> . DBCA has not and does not intend to reassess <i>E. praecox</i> priority listing. Any reference to the reassessment of this species' priority listing and subsequent amendment of the species' conservation status should be removed from the documentation. | KCGM is not implying that the priority status should be changed. KCGM continues to find additional <i>E.praecox</i> during regional survey work, with additional plants identified in two recent regional surveys. The regional survey work undertaken has identified 193 plants (26% of known plants) within Conservation Reserves within 100km radius of KCGM. |

3.3.2 Public submissions

KCGM did not receive any submissions from the public in relation to the EPA Environment factor Flora and Vegetation for the proposed project.

3.4 Terrestrial Fauna

3.4.1 Agency submissions

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| 12 | DWER | Table 38 does not present the proportion and fauna habitat extent in hectares (ha) proposed to be disturbed by the Proposal. Quantification of impacts to fauna habitat should be presented in a format, as what is presented in Flora and Vegetation (Table 27). Totals should be summed and presented in the table. | The Regional Habitat Mapping table from the ERD (Table 38) has been updated to present the percentages of each habitat type which are proposed to be cleared. This is shown below in Table 2 Regional Habitat Mapping (previously Table 38). |
| 13 | DWER | Values of fauna habitat for Short Range Endemic (SRE) species and significant species in the ERD do not align with Table 38. Fauna habitat values stated throughout the ERD should be reviewed against what is reported in Table 38 and Table 35. Examples include, but are not limited to: - SRE habitats, 'Open woodland', 'Shrubland', 'Shrubland along | SRE habitats were reviewed, and areas clarified. Additional mapping was incorporated into the vegetation mapping units in response to an earlier RFI from the EPA. This change resulted in updates to the fauna habitat types as well. It appears that the tables in the ERD were updated to reflect the new changes in the vegetation types, but this has not been fully transcribed across the text of the ERD. Table 2 |

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| | | <p>drainage line', and 'Rehabilitation', is stated to occupy 80.9% of the Mine DE (p. 130), however, using values reported in Table 38, this value would be 91%.</p> <p>- Table 54 states a total of 451 ha of suitable malleefowl foraging and dispersal habitat may be cleared by the Proposal, however, Table 38 states 282.3 ha of suitable malleefowl foraging and dispersal habitat is within the study area, and 68 ha is in the Proposal area.</p> | <p>Regional Habitat Mapping (previously Table 38) shown below in Section 4.3.1, shows the extents of disturbance of these vegetation types within the Revised Proposal area.</p> <p>SRE habitats</p> <p>Using the data in Table 38, the area of vegetation in the MDE that could provide SRE habitat is 7112.1 ha. The total area of the MDE is 7,795 ha. Therefore, the area of potential SRE habitat area is 91%.</p> <p>Malleefowl foraging and dispersal habitat</p> <p>In 2023, Holm & Associates undertook a comprehensive re-assessment and a ground truthing survey to validate the data that was presented in the Phoenix (2022) survey report for suitable and extrapolated foraging and dispersal habitat for Malleefowl. The survey confirmed that there was no evidence of the presence of Malleefowl in the MDE and the potential foraging and dispersal habitat for Malleefowl was determined to be marginal at best (Holm & Associates, 2023).</p> <p>The values presented in the ERD have been taken from two different surveys; one survey by Phoenix (2022) (which included the “extrapolated” areas) and one by Holm & Associates (2023) (which ground-truthed the “extrapolated” areas). The value of 451 ha is the area determined by Holm and Associates to be marginal Malleefowl foraging and dispersal habitat and has refined the area that was nominated as the extrapolated foraging and dispersal habitat by Phoenix (1,477 ha and referred to in Table 38 of the ERD). Approximately 10 ha of the area surveyed by Holm & Associates is not within the MDE and can be subtracted from the total. Within the area surveyed by Holm & Associates, 1,852 ha was found not to provide suitable foraging and dispersal habitat (refer Figure 5 of Appendix J of the ERD). No areas surveyed within the MDE were found to be suitable breeding habitat for Malleefowl. The area mapped by Phoenix (2022) of 68 ha of marginal foraging and dispersal habitat in the centre of the MDE was not considered to be suitable habitat by Holm and Associates (2023).</p> |

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| | | | <p>The marginal habitat within the Revised Proposal footprint (441 ha) represents approximately 7% of the potential marginal Malleefowl foraging and dispersal habitat within the MDE.</p> <p>Figure 3 and Table 3 show the marginally suitable habitat (1f) for Malleefowl foraging and dispersal. The turquoise area in Figure 3 is area identified as the marginal foraging and dispersal habitat by Holm (2023). Areas are provided in Table 3 in 4.3.1.2 of this document.</p> |
| 14 | DWER | Fauna habitat extent recorded within the study area (Table 35) has changed significantly from the previous draft ERD (Table 34). Given the above inconsistencies, it is uncertain whether this revision has been incorporated into the SRE and significant fauna habitat calculations. | <p>Revision 4 is the version of the ERD released by the EPA for public review. Revision 4 has been updated based on requests for information through the EPA and the collection of additional data. Since the submission of Rev 0 through to Rev 4, KCGM has commissioned additional surveys and studies across the EPA Environmental Factors and have included the results in the Final ERD Rev 4, which may account for differences between versions.</p> <p>Due to the requests from the EPA, documentation now incorporates additional, older field data from previous studies. Areas of habitat for significant fauna is based on the combined data from the targeted fauna reports.</p> |
| 15 | DWER | Malleefowl foraging and dispersal habitat extent should be summarised within its own table. It is unclear whether this habitat type is additional habitat, or if it is encompassed within the five described fauna habitats (Table 38). | A new table (Table 3) has been established in Section 4.3.1.2 of this document. |
| 16 | DWER | It is unclear what areas the 'Malleefowl extrapolated foraging and dispersal habitat' is referring to (Table 38, Figure 26). The location of the extrapolated habitat across the Proposal area, and the method of calculating this habitat, should be clarified. | <p>The extrapolated areas refer to a survey undertaken by Phoenix Environmental Services in 2022. The extrapolated areas were based on the broad vegetation types 1) Open woodland, 2) Shrubland and 3) Rehabilitation and located in the central section of the Proposal area.</p> <p>In 2023, Holm & Associates undertook a new detailed assessment (integrating additional information such as soil types) of the proposed MDE and a ground truthing survey to validate the data that was presented in the Phoenix (2022) survey report (Appendix J, Figure 3 of the ERD) for suitable foraging and dispersal habitat for Malleefowl. This survey confirmed that there was no evidence of the presence of Malleefowl in the central MDE (clay rich floodway area) and the potential foraging and dispersal habitat for Malleefowl was determined to be marginal, as</p> |

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| | | | <p>defined by the Holm & Associates Survey (2023), and along the eastern edge, linked to external areas. See Figure 3 of this document for Holm's mapped Malleefowl habitats.</p> <p>The Holm & Associates survey (2023) confirmed that there was no recent evidence of Malleefowl in the survey area. The comprehensive re-assessment of the area by Holm & Associates (2023) further concluded that the area (1f) defined as suitable for foraging and dispersal (Table 38 of the ERD), is actually considered to be <u>marginally</u> suitable at best with a habitat assessment score of 5.09 (out of 10). Noting that where scores above 5 are considered marginal habitat for breeding and survival, scores of above 7 are considered critical habitat for breeding and survival of Malleefowl. The verification survey (Holm & Associates 2023) determined that 451 ha of the 2,303 ha surveyed was found to be "<i>marginally suitable for foraging and dispersal</i>" for Malleefowl.</p> <p>Section 6 of Holm & Associates (2023) details the survey methodology and Table 3 within the report provides the justification for the habitat calculations.</p> |
| 17 | DBCA | <p>Local impacts to <i>Jalmenus aridus</i> (P1) may be significant, particularly if the potential impacts result in a decrease in viability of the local population. The proposal refers to the removal of 25 per cent (i.e. two out of eight) of the known breeding shrubs in the local area. Although DBCA records show there are nine <i>J. aridus</i> populations, the population at Fimiston is the largest, with 114 and 120 adult butterflies recorded in October 2021 and 2022, respectively, noting that the other populations have not been appropriately quantified. <i>J. aridus</i> is a cryptic species, with very little currently known about its ecology and existing populations.</p> <p>Based on available information, <i>J. aridus</i> is known to show strong site fidelity, persisting at a location for more than 30 years, feeding on a single shrub for at least 12 years, and possibly as long as 24 years. Without further information or investigations to clearly determine</p> | <p>The Inland Hairstreak butterfly (<i>Jalmenus aridus</i>) is a Priority 1 listed species endemic to Western Australia. Previously known only from its locality near Lake Douglas, approximately 12 km southwest of Kalgoorlie, recent surveys uncovered a new breeding site near Kalgoorlie. As a result, <i>J. aridus</i> is now recorded from 13 sites (June 2024 (Pers. comm. R Eastwood/ Data at WA Museum), with an additional three sites recorded in April/May 2024 (Pers. comm. R Eastwood). Their preferred habitat consists of open woodlands with mature <i>Senna artemisioides</i> ssp. <i>filifolia</i> and mixed flowering shrubs, along with well-drained exposed ground adjoining the host plants. The presence of the ant <i>Froggattella kirbii</i> is essential for their survival. Some of the new populations were not breeding on <i>Senna</i> and this may indicate there are more shrub species that <i>J. aridus</i> will breed on.</p> |

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| | | <p>population size(s) of known (or other) breeding sites in a regional context, the local and potential regional impact of the proposal on this species may be considered high. The ERD emphasises that two <i>J. aridus</i> populations have been identified within reserves managed under the <i>Conservation and Land Management Act 1984</i> (CALM Act). It should be noted that the CALM Act does not exclude all disturbance activities and protection of these areas cannot be guaranteed.</p> <p>The revised proposal poses direct and indirect impacts on <i>J. aridus</i>, its habitat and breeding shrubs. The potential impacts include clearing, changes to hydrological regimes (surface water and groundwater), dust, vehicle strike, fire, weeds and feral animals. It is also important to consider that although the population at Fimiston has persisted adjacent to a mining operation, the species' ability to persist given further clearing and indirect impacts from the expansion is unknown. DBCA is aware of an instance where the species has become locally extinct due to impacts on its habitat and breeding shrubs. This was evident at the Lake Douglas population that became locally extinct after the condition of a breeding shrub deteriorated. Therefore, it is critical that impacts on individuals and habitat are avoided and/or mitigated in the first instance and that an appropriate monitoring program is implemented with relevant trigger and threshold criteria applied to adaptively manage impacts on the <i>J. aridus</i> population.</p> | <p>KCGM has avoided (as per the mitigation hierarchy) as many potential breeding shrubs as possible. The two shrubs that will be directly impacted appear to be on the edge of the main population and the western boundary of the site transitions to unsuitable habitat for these species. Additional breeding shrubs have not been found west of the shrubs designated for translocation and there is more suitable habitat outside the delineated site area. Most <i>Jalmenus</i> records are concentrated to the south, beyond the impact area. Hydrology and changes in water regime could be considered the biggest indirect threat, but it is clear that other factors like vehicles, dust, weeds, and feral animals pose negligible risks.</p> <p>Regionally, the existence of 13 populations (increased to 24 populations during the Spring 2024 survey period) suggests that <i>J. aridus</i> is widespread. Notably, other <i>Jalmenus</i> species can persist at a location for up to 30 years and the similar ecology suggests that this may also apply to <i>J. aridus</i>. The extinction of the <i>Jalmenus</i> population at Lake Douglas was due to natural attrition (borers), and subsequent surveys found more breeding trees and shrubs throughout the region. The additional populations of <i>Jalmenus</i> are located on DBCA managed land: 1. Goongarrie NP, 2. Goongarrie Stn, 3. Kangaroo Hills (TR), 4. Kurrawang (NR). The Goongarrie populations should have a high level of protection and it is likely that there are more in Goongarrie NP - with unconfirmed sightings.</p> <p>Given that there are already 24 known populations, it's likely that more breeding shrubs will be discovered outside the impact areas. The longevity of <i>Jalmenus</i> populations, as demonstrated by their persistence on various shrubs over time, supports their ability to move easily. The management and monitoring actions and the trigger and threshold criteria outlined in the SSMP are appropriate management measures and are supported by the peer reviewer (Appendix B Review of SSMP - Matt Williams Confidential).</p> <p>The monitoring of the translocated populations will provide important information for the scientific community that can be used to increase the understanding of the species and provide data to inform conservation and any future translocation programs.</p> |

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| | | | <p>The SSMP has been revised as per advice from DBCA and split into a Fauna and a Flora SSMP.</p> <p>Monitoring of <i>J. aridus</i> is undertaken during suitable climactic conditions to maximise likelihood of detection. Undertaking surveys in unsuitable climactic conditions when the season has been too hot or dry will result in limited useful data. As noted in the SSMP monitoring will be undertaken when advised by the subject matter experts (Section 2.10 and Table 7 of the SSMP).</p> <p>A separate monitoring plan is provided for <i>J. aridus</i> in Appendix C of the SSMP. This sets out reference sites and vegetation health ratings tables. We have included triggers and thresholds in the SSMP for the health of the potential <i>J. aridus</i> breeding shrubs (Section 3).</p> <p>The statement “Further surveys for additional regional populations may be conducted until it has been sufficiently demonstrated that the species is much more common and widespread than currently known” has been removed as requested.</p> <p>Baseline data has been collected every breeding season since detection of the <i>J. aridus</i> species and have ranged across the region to detect as many populations as possible. We have used 100% of the butterfly specialists we could find to undertake these surveys during the limited breeding season. As a result, we know that we will be removing two shrubs from one population of the 18 known populations. The genetic material from this shrub will be relocated to another breeding shrub within the existing population. The existing breeding shrubs and netaring plants will continue to provide sufficient habitat for the <i>J. aridus</i>.</p> <p>Response actions have been refined to include engineering controls, where relevant, continual learnings from surveys and consultation with relevant stakeholders (Table 12 and 14 of the SSMP).</p> |

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| | | | <p>Unnecessary references to baseline data have been removed to avoid confusion. They had been included to demonstrate the evolving understanding of the species and its habitat.</p> <p>Reference to inclusion of new shrubs into the buffer zones and long term monitoring program has been included in Table 7 of the SSMP.</p> <p>KCGM believes that a 50m buffer distance is appropriate, due to the observed habits of <i>J. aridus</i>. They are known to have extreme site fidelity (Braby 2013; Eastwood et al. 2023) so they do not stray far from their host plants. They do not set up territories in open areas such as roads and only sit on the ground alongside their hostplants Two recorded breeding shrubs at Fimiston are situated within 30m of an existing haul road, one is also directly on the edge of a 4WD track; however, the shrubs and butterflies are all in good health (Rod Eastwood, pers. comm.). Most records of <i>J. aridus</i> have been found in close proximity to a road or track. Additional disturbances from other known populations include:</p> <p>Reference populations are also located close to roads, infrastructure and other disturbance.</p> <p>These observations indicate that direct impacts such as removal of habitat within close proximity does not disturb the butterflies or their breeding behaviour, so long as their habitat remains suitable.</p> <p>Indirect impacts of the proposal have not been specifically investigated as there is limited research available for this butterfly generally, however, we know that <i>J. aridus</i>' habitat requires host plant <i>Senna artemisioides filifolia</i>, and a variety of nectaring plants.</p> <p>As long as potential impacts to these species are managed, then it can be assumed a 50 m buffer is satisfactory .</p> |
| 18 | DBCA | DBCA is not aware of documentation or recommendations that describe the relocation of egg material as an appropriate management action for <i>J. aridus</i> . Therefore, further investigations and references relating to the relocation of egg material as an appropriate management action for <i>J.</i> | Rod Eastwood (Research Associate, Western Australian Museum, 49 Kew Street, Welshpool) has experience with the translocation of lycaenid butterflies having published 24 research papers on the subject including four papers specifically dealing with <i>Jalmenus</i> (Eastwood 1999; Eastwood et al. 2006; Eastwood et al. 2008; Eastwood et al. |

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| | | <p><i>aridus</i> should be provided. DBCA recommends that a management and monitoring plan is developed in consultation with technical experts and DBCA prior to the disturbance of egg material.</p> | <p>2023). Details of Rod's extensive experience with <i>Jalmenus</i> translocation and his proposed methodology is outlined in the attached in Appendix D Eastwood Translocation Protocol - Confidential.</p> <p>Importantly, in all his demonstrated cases the eggs survived the translocation process, hatched successfully, and developed normally.</p> |
| 19 | DBCA | <p>Further information is required to appropriately identify and describe the proposed management measures, monitoring program(s), triggers/thresholds, and contingency actions to be implemented as a part of the SSMP. It is important that best practice management is implemented by the proponent to maintain viable populations of Priority flora and fauna through avoiding/minimising and applying specific mitigation actions. DBCA has identified deficiencies in the SSMP, that should be addressed to inform management for inland hairstreak butterfly, <i>J. aridus</i>, including, but not limited to:</p> <ul style="list-style-type: none"> • information on threats and mitigation strategies; • appropriate triggers, thresholds and contingency actions; • collection of baseline data; • appropriate measures for habitat health and plant condition; and • detailed monitoring methodologies. | <p>The SSMP has been specifically prepared to manage the threats of impact on <i>J. aridus</i> and other conservation significant species.</p> <p>Threats are addressed in the SSMP in Section 2.3.2, Mitigation strategies are outlined in Section 2.8 and 2.9. Triggers, thresholds and contingency actions are addressed in sections 3.1.2 where a complete table devoted to these aspects for <i>J. aridus</i> is presented.</p> <p>Eleven fauna and habitat surveys have been undertaken in the area in the last seven years with four of the most recent undertaken as specific targeted surveys for <i>J. aridus</i>, both to map local occurrence and to determine regional extent. Habitat outside the clearing footprint will be protected and monitored annually for vegetation and habitat health. This monitoring is described in Section 2.10 of the SSMP. A detailed monitoring program will be prepared and undertaken by butterfly specialists. Dr Rod Eastwood - Research Associate at the Western Australia Museum has prepared a translocation protocol to translocated potential breeding material from the two shrubs to be disturbed.</p> <p>Dr Matthew Williams (Consultant Statistician and Entomologist (Lepidoptera)) prepared a peer review of the SSMP and his comments have been attached to this response (Appendix B). He concluded the following.</p> <p><i>"The proposed buffer of 50 m around J aridus breeding sites is prudent. Although the ideal width of such a buffer zone is unknown, observations by a qualified entomologist suggest that such a distance is adequate (R Eastwood, pers comm). The proposed monitoring program to determine any impacts on J aridus (i.e. the proposed survey program for presence</i></p> |

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| | | | <p><i>and breeding activity at 'control' (=reference) and (putative) impact locations / subpopulations is a reasonable method of detecting any impacts" (Green 1979).</i></p> <p>The removal and translocation of host plants or eggs of <i>J aridus</i> from the areas proposed to be disturbed may be an effective method of preserving any subpopulations that may otherwise have been lost. The ongoing monitoring of the translocated host plants by KCGM will provide valuable scientific information that could inform best management practices and assist in future translocations of the species.</p> |
| 20 | DBCA | <p>In general, the proposal has the potential to impact on several potential short range endemic taxa that have all, or most of their known range, restricted to the proposed disturbance footprint. Due to the paucity of information involved with novel and undescribed species and potential habitat specialisation, taxa may be at high risk from development activities and require a risk-based and adaptive management approach.</p> | <p>All SREs recorded within the proposal footprint have been recorded in greater numbers regionally and outside the proposal footprint or are likely to be found outside the proposal footprint according to Phoenix (2023b from the ERD). These species include <i>Jalmenus aridus</i>, a mygalomorph spider (<i>Missulena harewoodi</i>), (Conothele 'MYG554' ('kalgoorlie'), <i>Idiosoma</i> 'Kalgoorlie 1', and <i>Idiommata</i> 'kalgoorlie'). The Pseudoscorpion <i>Austrohorus</i> 'sp. Fi01' is not located in the disturbance footprint. The listed SREs will be monitored and managed as per the SSMP.</p> <p>All SRE species other than <i>J. aridus</i> have not been recorded in the project footprint and are located away from areas of activity. These sites will not be disturbed and have a low risk of indirect impacts therefore have not been included specifically in management plans.</p> |
| 21 | DBCA | <p>DBCA recommends that further information and additional surveys be undertaken to clarify the full extent (local and regional) of impacts (direct and indirect) of the proposal on <i>J. aridus</i>. EPAS recommends that KCGM liaise directly with DBCA to discuss this matter.</p> | <p>KCGM is committed to supporting further research and understanding of this species, by working closely entomological specialists and supporting further spring surveys over several years. The Spring 2024 surveys are already scheduled.</p> <p>Goldfields DBCA office participated in the 2022 Spring surveys with Dr Rod Eastwood (working on behalf of KCGM).</p> |

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| | | | <p>In July 2024 KCGM and Perth DBCA discussed the best way forward, with an agreement reached that KCGM would provide copies of technical reports to the DBCA when available, annually at submission of EPA annual reporting. Regional staff will continue to receive a courtesy notification of spring field surveys and it was reiterated that DBCA staff are welcome to participate in surveys.</p> <p>Additional surveys have been undertaken in September/October 2024. Data from these surveys will be used to clarify the full extent (local and regional) of <i>J. aridus</i> and to plan additional monitoring and management triggers and thresholds to prevent indirect impacts.</p> <p>The SSMP has been reviewed by DBCA and has been further revised as per consultation and comments.</p> |
| 22 | DEMIRS | <p>Recent identification of <i>J. aridus</i> at Fimiston within the development envelope is not discussed in the Mine Closure Plan (MCP). DEMIRS recommend this is considered in the MCP (baseline data, risk assessment, implications for closure). This should include identification of knowledge gaps and further work required to inform closure planning. Any EPA objectives for this species should also be considered in the MCP closure outcomes.</p> <p>The intent of KCGM and the WA Museum to protect the exact locations of <i>J. aridus</i> populations is acknowledged, however this does not preclude KCGM from including closure outcomes and/or closure completion criteria for the preservation of conservation significant flora and fauna species in the MCP.</p> <p>DEMIRS requests the SSMP and supporting documentation are provided as confidential appendices to any future MCP revisions or relevant Mining Proposals submitted to DEMIRS for the Fimiston Extension project</p> | <p>At the request of the entomological community, KCGM and the WA Museum have gone to considerable effort to ensure that the exact location of the <i>J. aridus</i> populations are not widely disclosed. At this point in time, to grant this request would require the KCGM MCP to become confidential. This is not feasible, as KCGM has a Ministerial Statement condition requiring the MCP to be made publicly available on the KCGM website.</p> <p>Continued research on the species is being actively supported by KCGM. Detailed consideration of the species has been provided in the confidential SSMP, and these considerations (including avoidance and monitoring) will continue through to closure.</p> <p>The SSMP and supporting documentation will be provided as confidential appendices to any future MCP revisions or relevant Mining Proposals submitted to DEMIRS for the Fimiston South project.</p> |

3.4.2 Public submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 23 | Private submitter 2 | The new Fimiston III tailings storage facility will destroy pristine vegetation in this area of the Proposed Fimiston III tailings storage facility just as previously happened with the Fimiston 1 and Fimiston 2 tailings dams where hundreds of trees were killed as a result of reactive processes to seepage and contamination problems. | <p>Clearing for these TSFs is assessed through this EPA process. No unique vegetation type or habitat has been identified in the area, with all vegetation well represented in the wider region.</p> <p>KCGM has had an existing and effective Seepage and Groundwater Management Plan (SGMP) in place for 15 years, providing management measures to ensure groundwater does not rise into the root zone of vegetation. The existing SGMP will be expanded to ensure effective groundwater management in the vicinity of the new TSFs. The SGMP forms part of KCGM's DWER Operating Licence, with action triggers for any change, quarterly reporting requirements and annual reviews.</p> |

3.5 Inland Water

3.5.1 Agency submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 24 | DWER | The ERD does not contain documentation on the reinjection of mine dewater into the Kaltails borefield. As such, the potential impacts of emissions and discharges from this activity should be provided for assessment. | <p>Reinjection of groundwater into the Kaltails aquifer has already been approved under the existing Ministerial Statement MS 782 and by DWER (Groundwater Licence GWL64266(9) which was amended in 2017) and the disturbance approved by DEMIRS, thus this activity has not been re-examined in this proposal.</p> <p>There is no change to this component of the approved project.</p> |
| 25 | DEMIRS | Section 3.4.2 of the ERD commits to backfilling the Fimiston Pit with up to 75% of the waste from this proposal. This is not reflected in the Mine Closure Plan (MCP). | KCGM will submit an updated revision of the MCP, which will reflect the planned backfilling of Fimiston Open Pit, as well as other DEMIRS requirements, in the second half of calendar year 2024. |

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| 26 | DEMIRS | <p>DEMIRS has requested and is awaiting further information from the proponent as part of its current review of the 2022 MCP revision, including:</p> <ul style="list-style-type: none"> • Provide the supporting documents that have been utilised in the TSF closure designs (Landloch 2018a, 2018b, 2020). • Outline a strategy for access and management of obstacle lighting (required for aircraft safety) proposed to remain post closure upon the Fimiston WRD (within the proposed abandonment bund for Fimiston Pit). <p>The MCP should include discussion of the proposed diversions of Eastern Floodway and around the waste rock landforms (WRLs) and TSFs as described in WSP (2022). This discussion should also assess peak flood velocity impact on landform stability for WRL and TSFs and propose management strategies if required.</p> <p>An at-scale field trial of the proposed closure design is recommended on existing TSFs (Fimiston I, II, Kaltails) to test the proposed closure design (embankment slopes and TSF surface capping) and demonstrate the design will provide long-term stability for the highly erodible tailings materials contained in the landform. An evaluation of the hydrological function (infiltration, runoff) of the rehabilitated TSF surface will also be required that considers rare to extreme rainfall events over a long timeframe.</p> <p>An accelerated program of progressive rehabilitation for TSFs, including installing rocky cover on the highly erodible outer TSF embankments, is recommended during operations to ensure closure liability is reduced over time. This is becoming more important as the approved TSF footprints grows and most TSFs are proposed to remain active for the duration of mining.</p> <p>Future TSF designs (including Fimiston II (cell G) and Fimiston III TSFs) should consider options for embankment stability that do not</p> | <p>Request for further information relating to the MCP KCGM has compiled this information and submitted an updated MCP to DEMIRS (MCP 2022v2).</p> <ul style="list-style-type: none"> - Technical documents requested by DEMIRS have been added to the appendices in a revised version of the MCP. - A MoU for OLS lighting maintenance beyond closure has been signed between KCGM and the City of Kalgoorlie Boulder (owner of the Kalgoorlie Airport). KCGM aims to have this finalised before the next update of the MCP. <p>Floodway Diversion The diversion of the Eastern Floodway has been designed to be a passive, end of mine life solution. The Fimiston South MCP will be updated to include the hydrology study for the Eastern Floodway and closure commentary. KCGM can confirm that assessment of flood events for 1% AEP applied to closure and that the channel is a passive closure solution. At the 1% AEP, the entire valley is flooded (sheet flow), with water no long retained in existing channel lines or water courses. The Fimiston South MCP will be updated to include the hydrology study for the Eastern Floodway and closure commentary.</p> <p>Field trials of TSFs closure design A small scale trial of the design was initially conducted in 2016/7 on the northern slope of Fimiston I TSF, as detailed in section 5.5.1.1.5 and section 5.3.2.4 The TSF closure design has been implemented on more than 19 ha of TSF slopes, with work commencing in 2018, as documented in section 5.3.2.4.3, and Figures 5-68 and 5-69. As such, KCGM regarded these as 'at-scale field trials'. This work is documented in the current version of the KCGM MCP (2022 v1 and 2022 v2) field trials section.</p> <p>Accelerated program for rehabilitation of the TSFs</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>rely on spillways/drains conveying runoff from TSFs to the natural environment, as these can be prone to failure.</p> <p>The response from KCGM is considered adequate, however further detail on the hydrological function of the TSF cover design should be included in the revised MCP submitted to DEMIRS with the mining proposal. It is noted the design rationale was based on erosion modelling studies, however limited information has been provided on the capacity of the cover design to store a 1:100-year 72-hour rainfall event, the rate of infiltration/seepage through the cover, and implications of potential long-term ingress of seepage via incidental rainfall into underlying tailings (i.e., risks associated with slumping, subsidence, or piping).</p> <p>Regarding progressive rehabilitation of the TSFs, DEMIRS acknowledges the limited potential to undertake rehabilitation whilst buttress works are ongoing. However, DEMIRS reiterates the importance of undertaking progressive rehabilitation of TSF embankments as soon as is practicable, noting there is a surplus of competent waste rock available at the Eastern and Northern WRDs for installation of rocky covers that will reduce risks associated with dust generation and erosion whilst TSFs are active.</p> <p>The water-retaining design for new TSFs at Fimiston is acknowledged.</p> | <p>An accelerated program of TSF rehabilitation is significantly limited by the safety requirements for ongoing buttress works, which will continue until facilities under assessment in the Fimiston South approvals are operational. Implementing rehabilitation in areas which may potentially become buttressing areas could result in wastage of topsoil and other resources that could better be used elsewhere. As a result, current rehabilitation works are focused on the waste rock dumps.</p> <p>TSF Designs without spillways</p> <p>The Fimiston TSF closure design is for water retaining on the upper surface, i.e. sufficient built-in freeboard to negate the need for engineered spillway from the top of the dam due to overall height of the final landforms). Spillways are only required on the lower slopes of Fimiston II TSF as this has adequate width step-in benches that are able to safely discharge to engineered drop drains. Current designs for new TSFs have linear slopes with no spillways required. Design information is well documented in section 9.2.5.4 of the MCP.</p> <p>Further detail on the hydrological function of the TSF cover design will be included in the triennial MCP.</p> |
| 27 | DEMIRS | <p>In relation to the <i>Hydrological assessment of the Eastern Floodway</i> (WSP 2022), the Southern WRD expansion will block the Eastern Floodway main tributary flowing into Lake Hannan, with a diversion proposed to route flow around the WRD toe. WSP (2022) has assessed flood events with up to 1% AEP considering operational management, however closure is not considered in this report.</p> <p>DEMIRS recommends further discussion of options to reduce overall footprint for both TSFs and WRDs within the Eastern Floodway,</p> | <p>KCGM can confirm that assessment of flood events for 1% AEP applied to closure.</p> <p>Reduction of footprints</p> <p>Footprints have already been reduced to accommodate biodiversity considerations. As discussed in the ERD and supporting documentation, low grade stockpiles will be rehandled to the Fimiston Processing Plant, allowing for reuse of the stockpile areas for waste rock material. WRD</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>demonstrating why this is the best option, particularly in relation to the final closure and rehabilitation of the site.</p> <p>The proposed diversion design should consider rare to extreme flood events at this early planning stage to ensure placement and construction of all landforms (WRDs, TSFs) are performed with closure of the site and long-term landform stability in mind.</p> <p>The response from KCGM is considered adequate and DEMIRS acknowledges the constraints that have informed the footprint and locations of landforms proposed.</p> <p>DEMIRS recognises KCGM's consideration of closure and geotechnical stability during the landform design phase, however relevant geotechnical design reports should be presented to support Mining Act approvals demonstrating the long-term stability of the Far Eastern WRD extension and Fimiston III TSF designs given their proposed location within the Eastern Floodway, and the requirement for landforms to withstand multiple extreme rainfall events in-perpetuity. Whilst diversions have been designed with up to 1:30 year events in mind, there is still potential for interactions between landforms and surface flows following extreme rainfall events.</p> | <p>heights are constrained by airport requirements and therefore the footprints of the WRD reflect this constraint.</p> <p>Location options for large landforms KCGM is significantly constrained by the City of Kalgoorlie Boulder to the west, Gribble Creek and the airport approach to the south, as well as Parkeston power station and electrical infrastructure to the north. In addition, WRD heights are constrained by the Obstacle Limiting Surface and Procedures for Air Navigation Services – Aircraft Operations. KCGM has explored alternative locations for WRDs and TSFs extensively, together with the limitations above, dam safety and biodiversity considerations have refined the viable footprints further, leading to the final options for WRDs and TSFs, as presented in the ERD.</p> <p>Project planning commenced in 2013 for future candidate TSF locations. Discussions regarding the location and design constraints for mine waste landforms has been exhaustive and included all interested and effected parties. KCGM is significantly constrained by the City of Kalgoorlie Boulder to the west, Gribble Creek and the airport approach to the south, non KCGM tenements and the Eastern Floodway to the east, as well as Parkeston power station and electrical infrastructure to the north. In addition, WRD heights are constrained by the Obstacle Limiting Surface and Procedures for Air Navigation Services – Aircraft Operations. KCGM has explored alternative locations for WRDs and TSFs extensively, together with the limitations mentioned. Dam safety and biodiversity considerations have refined the viable footprints further, leading to the final options for WRDs and TSFs, as presented in the ERD.</p> <p>Diversion Design Flood events in the Goldfields area with an ARI lower than 3- 5% will result in sheet-flow and flooding of the entire valley. The diversion drain is designed to hold a 1:20 year event (5% ARI), with freeboard and a 1:30 year event without freeboard. This correlates when large scale sheet-flow begins occurring naturally in the catchment and with design criteria used by infrastructure organisations. These rainfall events remain pertinent for</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | | <p>closure scenarios. Rare events will change the depth of the flood event rather than the area inundated.</p> <p>The WRD extension will provide a flood mitigation measure for the adjacent 3rd party TSF. KCGM consider closure and geotechnical stability during design phase for the WRDs and TSFs.</p> |
| 28 | DEMIRS | Section 3.4.6: Ore processing and tailings is reported in the ERD to be similar to previous production. Ongoing sampling and characterisation of tailings should continue during operations, so tailings properties are validated and well understood. | In general Fimiston ore bodies' properties, and therefore the associated tailings, are very consistent and are not acid rock drainage producing. A commitment will be provided by KCGM in the updated MCP to analyse for tailings geochemical properties on a cycle aligned with the MCP submission cycle. |

3.5.2 Public submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
|-----|---------------------|---|---|
| 29 | Private submitter 2 | The new Fimiston III tailings storage facility proposed should be rejected in its current location as this will place too much pressure on local surface water affecting water dams downstream in the area and also the local aquifer upstream. | <p>KCGM has undertaken a thorough options analysis to consider the placement of the TSF for the Fimiston South Project (Golder 2013) and the constraints are outlined in response to submission No. 27. The site chosen provided the most appropriate location given the size, safety, environmental, biodiversity and constructability considerations. There are no dams known in the vicinity of Fimiston III TSF or in the downstream portion of the Eastern Floodway.</p> <p>KCGM has an existing and effective Seepage and Groundwater Management Plan (SGMP) to prevent groundwater rising into the root zone of vegetation. The existing SGMP will be expanded to ensure effective groundwater management in the vicinity of the new TSFs, with management measures including, but not limited to, underdrainage systems and additional seepage production bores to be installed as part of this proposal. The SGMP forms part of KCGM's Operating Licence (issued under Part V of the <i>Environmental Protection Act 1986</i> (EP Act)),</p> |

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| | | | <p>with triggers and contingency actions for any change, quarterly reporting requirements and annual reviews.</p> <p>A detailed hydrogeological review of the Fimiston TSF's was also completed as part of the Fimiston South project and is included in Appendix R of the ERD.</p> |

3.6 Terrestrial Environmental Quality

3.6.1 Agency submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
|-----|-----------|--|---|
| 30 | DEMIRS | The proposed expansion should ensure contamination risk to soils and surrounding environment are carefully monitored and well-managed during operations, so risks are minimised for closure. | <p>KCGM acknowledges DEMIRS advice.</p> <p>The existing WRD closure design aligns well with this advice, as it provides for a sediment catchment trench between the abandonment bund and WRD toe, to prevent sediment washing out to the wider environment. Section 9.2.5.4.2 has been updated accordingly.</p> |

3.6.2 Public submissions

KCGM did not receive any submissions from the public in relation to the EPA Environment factor Terrestrial Environmental Quality for the proposed project.

3.7 Social Surroundings

3.7.1 Agency submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 31 | DEMIRS | Section 3.4.8 implies revegetation will occur on waste rock dumps (WRDs) and tailings storage facilities (TSFs), which is not aligned to the Visual Amenity Concept / Strategy presented in the Mine Closure Plan (see Figure 9-24, Volume 2, MCP). The proponent should | <p>Rehabilitation</p> <p>The ERD is a high-level document prepared using the EPA template. Rehabilitation details, including the Visual Amenity Concept, are contained within the more detailed management plan ie the MCP. Visual</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>clearly state their intended revegetation targets for each domain proposed to be 'modified landscape' as it varies across domains in the current MCP.</p> <p>It is questioned whether fencing 'zones of restricted access' (including contaminated areas and TSFs) is the most appropriate long-term management for restricting access to these areas post-closure, particularly when there is durable competent rock available to construct robust rocky bunds.</p> <p>DEMIRS are yet to receive the full geotechnical assessment supporting the revised zone of instability (ZOI) and until this is provided are unable to comment on acceptability of the proposed revised ZOI.</p> <p>Inclusion of additional details on the Visual Amenity Concept and rehabilitation strategy for the WRDs and TSFs within the MCP is acknowledged, however the revised MCP submitted with the mining proposal should explicitly demonstrate that the proposed Fimiston Stage 3 activities have been designed with the limited availability of rehabilitation materials in mind.</p> | <p>Amenity was not identified as a key factor in the EPA assessment process.</p> <p>KCGM continue to implement rehabilitation in alignment with the visual amenity concept. As outlined in the current MCP, areas towards the west will be prioritised for available material for revegetation.</p> <p>Restricted access</p> <p>KCGM can add the establishment of rocky bunds around TSFs to the next version of the MCP, as well as fences, to more adequately address any potential access issues upon closure.</p> <p>KCGM acknowledges DEMIRS advice.</p> <p>An abandonment bund will encompass the pit and most of the WRD. The purpose of a mine pit abandonment bund is to restrict vehicle access (DoIR 1997). The operational phase 6 foot fence already exists on the western side of site, as an access deterrent for humans and animals considering the close proximity to a city. This fence will be retained post closure as an additional security and safety measure. The TSF will have fencing of a more temporary nature to restrict all access during the initial years of rehabilitation (vegetation regrowth and physical settling/stabilisation of engineered covers.). Rocky toe bunds form part of the existing design, see existing text in Table 9-29 in section 9.2.5.4.</p> <p>Geotechnical information for the Fimiston Open Pit is being prepared for the Fimiston South Mining Proposal and will be submitted to DEMIRS in the second half of calendar year 2024.</p> <p>The revised MCP will explicitly demonstrate that the proposed Fimiston Stage 3 activities have been designed with the limited availability of rehabilitation materials in mind.</p> |
| 36 | DWER | The Fimiston Air Quality Management Plan to be reviewed to include the following; | <p>Management of air quality is addressed in the ERD as follows:</p> <ul style="list-style-type: none"> Section 6. Environmental Factors and Objectives; Section 6.3 Air Quality; |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <ul style="list-style-type: none"> the allowable number of 24-hour PM₁₀ exceedances be updated in accordance with the NEPM goal, i.e., no maximum allowable 24-hour average PM₁₀ exceedances, noting that this excludes exceedances caused by natural events and fire management. <p>The definition of performance monitoring sites as per NEPM Clause 13.2 is not relevant to the function of Fimiston’s monitoring locations as operational dust management tools.</p> <p>Given that monitoring sites are primarily positioned to capture peak dust concentrations for the purpose of actively managing fugitive dust emissions from the site, the primary concern in this context is to manage and mitigate dust emissions effectively.</p> <p>DWER considers that defining an allowable number of exceedances serves no meaningful function in this regulatory context, particularly when monitoring stations are located near sensitive receptors.</p> <p>While the proponent draws a comparison of Fimiston’s boundary monitoring criteria with those used in other industrial context, it is important to consider the specific circumstances of each case. The reportable event criteria are expected to reflect the local environmental and human health considerations of the Fimiston site.</p> <p>Comparisons with other sites may not be fully appropriate due to differences in monitoring objectives, local geography, and receptor sensitivity. In the current NEPM, instead of defining a specific number of allowable exceedances of the 24-hour PM₁₀ standard of 50 µg/m³, it excludes exceedances caused by natural events, which are defined as bushfires, jurisdiction authorised hazard reduction burning, or continental-scale windblown dust. This is not an enforceable limit. Rather, it provides guidance on population exposure to air pollution through the application of nationally consistent monitoring methods. This criterion is considered suitable for reportable events. It will allow</p> | <ul style="list-style-type: none"> Appendix D Screening Health Risk Assessment; Appendix E Air Quality Impact Assessment; and Appendix F Fimiston Air Quality Management Plan (FAQMP). <p>In addition to the documents contained in the ERD, a toxicological risk assessment of the PM₁₀ fugitive dust to quantify the potential for impact on residential receptors was completed using an independent toxicologist as nominated by the EPA Services unit.</p> <p>KCGM notes the PM₁₀ toxicology review found the following:</p> <ul style="list-style-type: none"> that <u>annual average</u> concentrations of particulates at the boundary monitors are below the relevant NEPM guideline of 25µg/m³ KCGM’s PM₁₀ dust monitoring sites, originally established as a boundary monitoring network, are primarily located on the western boundary of the Fimiston Operations where peak concentrations are expected to be recorded. These sites provide monitoring data that is able to be used within KCGM’s Dust Monitoring and Management Programme (DMMP); a component of the FAQMP. The primary objective of the DMMP is to proactively manage dust generated by the Fimiston Operations. The findings of the review confirmed that boundary monitors are not suitable indicators of community dust exposure; The NEPM guidelines are applicable to the two community-based monitors, HGC and MEX. The boundary monitors are not suitable indicators of community dust exposure; The exposure concentration used was the measured PM10 from each monitoring site. The default assumption is that the population of interest is breathing outdoor air continuously for 24 hours as depicted by the monitoring location. This is a conservative assumption. Health Quotients (HQs) less than or equal to 1 (equivalent to 100% of the air quality guideline value) can be considered as having negligible risk. In relation to short term 24-hour average PM10 concentrations, HQs less than 1.2 |

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| | | <p>feedback on dust management performance over time as well as assessment of impact on residential receptors.</p> | <p>(60 µg/m³) can be considered to have acceptable risk. HQ greater than 1.5 (75 µg/m³) would require further evaluations/investigations to assess potential for adverse effects. Generally, HQs of 2 (100 µg/m³) or more could be considered to constitute a moderate risk.</p> <p>Recommendations from the review included the following:</p> <ul style="list-style-type: none"> • The applicable guideline for PM10 community-based monitors (MEX and HGC) should remain at 50 µg/m³ averaged over 1 day and of 25 µg/m³ as an annual average with zero exceedances attributable to KCGM operations; • The Mt Charlotte (MTC), Hewitt Street (HEW), Clancy Street (CLY), Boulder Shire Yard (BSY), and Hopkins Street (HOP) monitors are located at the boundary zone of the Fimiston open pit and therefore should be considered as boundary monitors and not as community-based monitors. As part of the Fimiston Air Quality Management Plan (FAQMP) these monitors allow for alert and subsequent actions to be undertaken when excessive dust may egress from the Fimiston open pit. In such case, the appropriate guideline for these boundary monitors is recommended to be 75 µg/m³ averaged over 1 day with zero exceedances. The annual average to remain the same for all boundary monitors at 25 µg/m³. This should ensure that short-term health impacts would not be expected within the residential community; • A level of 50 µg/m³ be used at the boundary monitors as an investigation level to monitor potential dust excursion from the Fimiston open pit; and • Implement the upgrade of the alert and action levels to enhance dust control at the Fimiston open pit. <p>On the basis of above KCGM acknowledges and commits to the removal of the allowable number of exceedances without an upper limit from the FAQMP and will implement the recommendations from the review as described above into the FAQMP.</p> |

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| | | | Further discussion is provided below in Section 4.4.2. |
| | | <ul style="list-style-type: none"> provisions on data availability to consider the NEPM requirement that annual compliance statistics must be based on daily PM₁₀ data that are at least 75 percent complete in each calendar quarter in addition to an annual data availability of at least 75% based on valid daily PM₁₀ data. | <p>KCGM has considered the NEPM requirement that annual compliance statistics must be based on daily PM₁₀ data that are at least 75% complete in each calendar quarter in addition to an annual data availability of at least 75% based on valid daily PM₁₀ data. KCGM commits to meeting the revised data availability thresholds and has updated the FAQMP accordingly.</p> |
| | | <ul style="list-style-type: none"> Action and Alert levels are reviewed annually and whenever there are changes that can potentially impact on monitored emissions, and adjusted if found ineffective. | <p>In accordance with MS 782, KCGM conducts a Triennial Review of the FAQMP. This review includes a review of the dust levels applicable to Actions and Alerts with trigger and action levels identified on the basis that they adequately measure on site activities and are considered representative of in-situ conditions; therefore, provision of trigger and action levels that focus on reducing the potential for impacts to air quality, social surrounds and/or human health. The last review of the FAQMP was conducted in March 2023 and this included updating the dust trigger levels for Actions and Alerts. The FAQMP was updated to the most current EPA Management Plan format and submitted as part of the Revised Proposal.</p> <p>KCGM includes a report titled “Annual and Seasonal PM₁₀ Dust Monitoring Review” in the Annual Environment Report (AER) which is submitted to DWER by 31 March annually. This review will be updated to include an annual review of dust triggers levels appropriate to Actions and Alerts, and the change reflected in the FAQMP. KCGM will also include in the annual report analysis of all events where a 24-hour average of 50 ug/m³ was recorded at the boundary and community monitors and where KCGM was considered a potential significant contributor.</p> |

3.7.2 Public submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 32 | ANON-E5NY-VGWQ- 6 | <p>The method of the corporate mining appointed Community Reference Group (CRG) has flaws as a tick the box consultation process as they do not represent the community as a community appointed representation or managed inclusive consultation platform, the CRG is a corporate mining appointed and managed group. This leaves gaps in this assessment and the considerations of the future of place with emphasis on the evolving Mine Closure Planning and the basic general conditions included in this assessment of rehabilitation and limiting human interaction due to safety protocols.</p> | <p>Community Reference Group:</p> <p>The Community Reference Group (CRG) was established in 1999 as an open forum with the community about operational issues and to seek feedback. The CRG contains up to 14 members of the community inclusive of a Chairperson and Vice-chairperson. Membership to the group is open to all residents of Kalgoorlie Boulder and is voted upon by the existing members of the CRG. KCGM does not appoint members, though facilitates functioning of the group through provision of meeting venues and administration. Northern Star encourages applications from all members of the community when vacant seats are available. Both information on the operation of the CRG, meeting minutes and nomination forms are freely available on our website at www.Superpit.com.au. The CRG format regularly evolves to cater for changing community needs and concerns.</p> <p>The CRG is an important means of consultation, though represents only one of the various ways consultation and communication with the community occurs. Regular Community Information Sessions are held in addition to pop-up sessions at various community events, where discussion on key projects is shared and encouraged.</p> <p>In addition to the CRG, the Local Voices provides Kalgoorlie-Boulder residents and stakeholders the opportunity to provide anonymous feedback about Northern Star's activities across the Kalgoorlie Production Centre, particularly KCGM Operations. This enables Northern Star to proactively respond to community concerns and sentiment. Since 2019 KCGM Operations has engaged an external consultant to deploy the 'Local Voices' service in Kalgoorlie-Boulder. Fundamental to the effectiveness of Local Voices is the independence the consultant has in collecting social performance data and in engagement directly with the community. Since 2019, 2687 community surveys have been collected and included in analysis of the relationship between KCGM Operations and Kalgoorlie-Boulder. A comprehensive baseline survey was conducted in September 2019, followed by quarterly Pulse surveys to track changes over time and allow Northern Star to focus on specific issues of interest as</p> |

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| | | | <p>they emerge. Northern Star has utilised Local Voices to understand community sentiment towards Fimiston South. Specific questions related to the Fimiston South project have been included in quarterly Pulse surveys since December 2019, providing multiple time points of data on this topic. The included questions related to awareness and acceptance of the project, perceived benefits and impacts related to the project, and responsiveness of Northern Star to community concerns. The results of each Pulse survey are shared with senior leaders at KCGM Operations, exploring opportunities to improve operational practices and community engagement, particularly in relation to environmental impact management. A table outlining community consultation is included in Appendix A.</p> <p>Mine Closure Plan Assessment</p> <p>The Mine Closure Plan (MCP) is a comprehensive planning document required as part of the mining approval process. This document is regularly updated in accordance with the regulatory guidelines and is approved by DEMIRS. The MCP is a commitment from KCGM for the integrated planning for closure, including detailed consideration of long-term safety and rehabilitation outcomes. The MCP was made available for the public environmental review process (Refer to the ERD - Appendix U KCGM MCP 2022 v1 Vol 1 & 2) and through the www.Superpit.com.au website. The CRG are updated on the MCP at the time of resubmission of new versions (currently the MCP has a three yearly review cycle).</p> |
| 33 | ANON-E5NY-VGWQ- 6 | <p>Understanding this assessment is for the Fimiston South Expansion however the Fimiston South Expansion to the modern mining open pit is a historic heritage place through the human endeavour of mining over 130 years. The extant tangible heritage is present at the recently acquired Crown Land Lease of NSR on the north end of the Golden Mile Mineralisation. Heritage Management Approaches are not present in this environmental assessment in consideration of the European cultural heritage.</p> <p>From a historic heritage aspect, the mining heritage and Mining Homestead Leases require consideration in this assessment. As do any further historic</p> | <p>Historic Sites</p> <p>The Revised Proposal submitted by KCGM does not require demolition or additional impacts to any registered historical sites. KCGM is committed to recognising and promoting the mining history in the regions and supporting the valued community, though support to the Hannans Tourist Mine and other initiatives. This is discussed in Section 4.1.1 below.</p> <p>European Cultural Heritage</p> <p>Although there is no legislative requirement to conduct European ethnographic surveys as part of an EPA submission under Part IV of the</p> |

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| | | heritage places targeted for demolition under this proposal, they deserve archaeological and ethnography considerations and activation from a European cultural heritage Rights Based Approach currently ignored and excluded from this assessment. | <p>EP Act, KCGM continues to be an active participant in maintaining items of historical significance to be shared with the public. No historic homestead lease properties are contained within this proposal.</p> <p>Refer to tourism response to submission No.1 for context on KCGM's involvement with the Hannans North Tourist Mine.</p> |
| 34 | ANON-E5NY-VGWQ- 6 | Geotourism and the value of geotourism to multiple demographics, first nations, authentic generational first diaspora of Kalgoorlie Boulder, the current settlement, any future settlement, academia and the university sector in utilisation of social improvement and ability to leverage as attraction for future industry professionals is not reflected in any manner in the standard conditions of rehabilitation that are quite frankly outdated on a global scale in this proposal, nor is the geotourism aspect considered to support the current operations, the miner, the settlement and the need to improve ESG outcomes. | <p>Geo-tourism</p> <p>Whilst active mine sites do not generally cater for tourism, KCGM understands the significance of the Super Pit as a tourism asset. Interest in mining history associated with the Goldfields is strong and KCGM is committed to providing access to the public into the future at both the Hannans North Tourist Mine and a public lookout overlooking the Super Pit which has been made available to visitors for many years. The public lookout includes information boards for the public to read information regarding mining and the pit. The current lookout will be relocated under the proposal but will continue to function as a tourism attraction, while operations allow it to be done safely. Additionally, KCGM has authorised "behind the scenes" commercial tours of our operations for many years and intends to continue to make this opportunity available while safe to do so.</p> <p>Shared Knowledge</p> <p>KCGM hosts many students, academic and industry tours each year. This often extends beyond the mining discipline and can be inclusive of all discipline's practiced at KCGM, inclusive of environmental management. Northern Star is a strong supporter of the School of Mines in Kalgoorlie and values the opportunities to share learnings and interest in the Fimiston and Mt Charlotte Operations when capacity allows.</p> |
| 35 | Private submitter 4 | Northern Star have not consulted with the prominent senior Aboriginal Elder even though they have extensive knowledge and been historically involved with Aboriginal heritage clearances for many of the known sites the proponent has identified in its report. I find this amazing in itself despite | <p>Indigenous Engagement</p> <p>Northern Star recognises the traditional rights of Indigenous peoples, and their enduring right to maintain their cultures and customs, and meaningful access to their traditional lands. We consider Indigenous peoples to be key</p> |

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| | | <p>all that is written about its so called extensive consultation processes, It tells you something about the deficiencies.</p> <p>To me after reading the document they have largely consulted with the wealthy and affluent people in Kalgoorlie Boulder to try to gain support and anybody who is not necessarily wealthy or affluent they do not care about, which is why the Proposed Tailings Storage facility Fim III has been placed over where old Aboriginal People have been buried. It's nothing but a complete shame and they should be pulled into line.</p> <p>This is like a non aboriginal person wanting to build a big project, in this case a new proposed tailings dam, over a cemetery and it is not acceptable. Northern Star need to move this Proposed tailings Storage 111 to another area way down south well away from Kalgoorlie Boulder on Land owned by Northern Star.</p> <p>Northern star need to find other locations for a new Proposed Tailings Storage Facility. By doing this, it will also reduce pumping tailings cost uphill over the life of the project and be far more acceptable as long term any dust problems from the closure or construction will also be well away from the City of Kalgoorlie Boulder. There are also no Aboriginal sites in the area south of the project area on land owned by Northern Star.</p> <p>A map is provided showing the general area of where old aboriginal people are buried in the vicinity of the proposed Fimiston tailings storage facility and also shown on the same map suggests a suitable location for further proposed tailings storage facilities.</p> <p>The Aboriginal Boulder Camp and the people who reside is one of the closest stakeholders and the people who stay there are made to live in third world type conditions putting up with Northern Star's dust and noise 24 hours a day. Before the project can proceed the Boulder Camp is located well away from the Super Pit so Aboriginal People are not made to continually live in third world conditions generated by negative impacts of dust, noise, light pollution and affecting the amenity of the area. This is this</p> | <p>stakeholders and that to thrive as a business, we need to gain and maintain these enduring trust-based relationships.</p> <p>Northern Star commits to agreement making processes with all Indigenous peoples whose land we operate on, and who hold relevant legal Indigenous land tenure as awarded by the relevant State, Territory or Federal government. This commitment extends to all First Nations People who have either a determined or registered Native Title Claim under <i>the Native Title Act 1993</i> (Commonwealth). Northern Star has undertaken a <i>Heritage Act 2023</i> compliant archaeological and ethnographic survey of the areas to be disturbed by this proposal.</p> <p>Consultation with Indigenous Groups and Heritage Surveys</p> <p>Northern Star has consulted extensively with local knowledge holders (including current and previous native title claimant groups) relevant to the specified areas and the project (refer to Appendix A Stakeholder consultation). The current claimant group for the area covering KCGM operations has endorsed the survey; and has provided a letter of support. Consultation between KCGM and the local First Nation People remains ongoing.</p> <p>Across the Revised Proposal, Aboriginal heritage surveys have been conducted with a range of stakeholders since 1989, with reports prepared by appropriate Aboriginal heritage consultants (archaeologists and anthropologists) of the Traditional Owner groups' choosing. No survey conducted over the area has identified the areas of concerns outlined by Private Submitter #4 regarding burial sites.</p> <p>The most recent heritage survey report has identified the need for cultural monitors for ground disturbing activities in certain areas, including of the Fimiston III TSF location.</p> <p>In conjunction with this, KCGM will implement the Unexpected Finds procedure (Appendix J) for any ground disturbance activities, which mandates a stoppage of work and escalation and appropriate treatment, depending on the nature of the find. Cultural Monitors will also be present during clearing activities.</p> |

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| | | <p>year 2024 not 1924 and surely Northern star should not expect people to live so close with the negative impacts from the operations.</p> | <p>KCGM has also been in contact with Private Submitter #4, who self-identified to KCGM in early July 2024. KCGM requested further information, including an offer to walk the ground to assess the location of any unknown grave sites. If discovered to be within the planned disturbance area, KCGM will follow appropriate protocols, including notification of the WA Police.</p> <p>The proposed location for Fimiston III TSF and associated infrastructure contain no gazetted cemeteries or previously identified cultural areas or burial sites. KCGM commits to pursue best endeavours to gain further information from Public Submitter #4 before any excavation commences.</p> <p>Boulder Camp</p> <p>The Boulder Camp is a temporary accommodation facility located on Crown Land and managed by the City of Kalgoorlie Boulder (CKB). The CKB intends to relocate the camp and a working group of key stakeholders is progressing solutions for a suitable location. In 2021 the State government committed \$510,000 to fund upgrades to the camp facilities, some which have been spent on new ablution facilities which can be relocated once a suitable alternative accommodation site is designated.</p> <p>CKB has been engaging directly with the Tjuntjuntjara community regarding their concerns and priorities, to better understand accommodation needs to provide a solution that is appropriate and long-lasting. Northern Star is willing to support the CKB on its decision and will consider assisting with the funding as part of our broader social investment commitments. The impacts to all nearby and the greater Kalgoorlie-Boulder community from our operations is a priority for Northern Star.</p> <p>TSF Location</p> <p>The chosen location and assessment of alternative locations is addressed in response to item response No. 27.</p> |

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| 37 | ANON- E5NY- VGWJ- Y | <p>Blasts are being felt more at our home over the last 6 years and the duration and size of evening underground blasts can be extremely noticeable and I believe have caused damage to our home on occasion.</p> <p>At night we can hear the trucks dumping on the waste landforms and what sounds like an occasional rock breaker from 0600hrs. The noise is yet to be inconvenient, but seems to be getting worse under Northern Star ownership and it makes me worried about what will happen with the cut back/ expansion.</p> <p>We would like Noise data to be provided with an LA10 and LA1 and LAMax data as per the noise regulations on something like an hourly basis, live and compared to standards imposed by the Minister.</p> | <p>Blasting</p> <p>Management of blasting vibration and overpressure (airblast) are addressed in the ERD as follows:</p> <ul style="list-style-type: none"> • Section 6. Environmental Factors and Objectives; Section 6.4 Social Surroundings; • Appendix M Prediction of Blast-Induced Ground Vibration and Overpressure; • Appendix O Fimiston Acoustic Impact Assessment; and • Appendix P Noise and Vibration Monitoring and Management Plan (NVMMP) <p>Careful management of blasting impacts, ground vibration and air-blast overpressure, is critical due to KCGM's proximity to the City of Kalgoorlie-Boulder and its residents. Since the commencement of the Fimiston Open Pit in 1989 as a single operation, KCGM has achieved a high success rate of blasting within approved regulatory levels and therefore minimised the impacts of ground vibration and air-blast overpressure on the community.</p> <p>Further discussion on blasting and vibration is provided in Section 4.4.1.</p> <p>Noise</p> <p>The Fimiston Operations has been regulated for noise emissions since 2009 in accordance with the <i>Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval</i>. This approval allows KCGM to vary the noise emissions from the operations from those noise emission levels specified in Environmental Protection (Noise) Regulations 1997. KCGM has not proposed an increase in the approved noise levels and will operate the FS Project in accordance with current approved levels.</p> <p>In accordance with the <i>Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016</i> and the NVMMP, KCGM monitors noise from the Fimiston Operations at five compliance monitoring sites during the night-time period (10:00pm – 7:00am) on a quarterly basis. At each site sound levels for LA 10 and LA MAX are recorded over a minimum 15-minute period. These results are assessed in combination with the</p> |

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| | | | <p>applicable Weather Influencing Factors (WIFs) and a report generated detailing KCGM's performance against the approved levels. The results of the monitoring are shared with the public on the Superpit website www.Superpit.com.au. More detail on noise conditions in provided in response No. 40.</p> <p>Further discussion on noise monitoring is provided in Section 4.4.1.</p> |
| 38 | ANON-E5NY-VGWJ- Y | <p>Dust is the most noticeable of the issues. Mainly the impact of dust on our quality of life with our back patio, solar panels, washing, plants and vehicles getting covered quickly and consistently. This of course makes me worry about what health impacts it could be causing in addition to the cleaning and maintenance costs.</p> <p>Dust measurements are currently daily averages (for PM₁₀ which is health focused?), but it would be better to have PM₁₀ as hourly averages with prevailing wind direction. Measuring against a daily average means that peak hourly emissions are being averaged out. It is noted in March and April 2024 that there are quite a few days with PM10 levels over 35µg/m³, which might seem good compared to 50µg/m³ national limit, but I think it is suppressing hourly peaks. The average doesn't show the impacts from short duration activities like blasting or general operations when the wind is blowing towards town.</p> <p>It would be good to have a total dust measurement and if possible, a limit as well, given that total dust reflects my key concern of quality of life/aesthetics. Again, would be good to have the data on an hourly basis with prevailing wind direction rather than have data averaged out over a day when wind direction or activities change.</p> | <p>Management of air quality is addressed in the ERD as follows:</p> <ul style="list-style-type: none"> • Section 6. Environmental Factors and Objectives; Section 6.3 Air Quality; • Appendix D Screening Health Risk Assessment; • Appendix E Air Quality Impact Assessment and; • Appendix F Fimiston Air Quality Management Plan (FAQMP). <p>KCGM aims to comply with the <i>National Environment Protection (Ambient Air Quality) Measure</i> (NEPM) for the ambient monitoring of PM₁₀ at all of its monitoring sites. The goal of applying the NEPM is to protect human health and well-being by ensuring adequate air quality.</p> <p>A toxicological review of the PM10 fugitive dust to quantify the potential for impact on residential receptors was recently completed subsequent to the ERD. The review noted that in relation to short term 24-hour average PM10 concentrations, HQs less than 1.2 (60 ug/m3) can be considered to have acceptable risk. HQ greater than 1.5 (75 ug/m3) would require further evaluations/investigations to assess potential for adverse effects. Generally, HQs of 2 (100 ug/m3) or more could be considered to constitute a moderate risk.</p> <p>KCGM's PM₁₀ dust monitoring sites are primarily located on the western boundary of the Fimiston Operations where peak concentrations are expected to be recorded, providing monitoring data that is able to be used within KCGM's Dust Monitoring and Management Programme (DMMP). The primary objective of the DMMP is to proactively manage dust</p> |

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| | | | <p>generated by the Fimiston Operations to ensure that the ambient PM₁₀ concentrations at the boundary dust monitoring sites remain below <50 µg/m³ in any 24-hour period. The design of DMMP has evolved over time in response to regulatory requirements, technological advancements, and operational practices at Fimiston. The current network utilises Beta Attenuation Monitors (BAM) at each of the seven monitoring locations (historically Hi-Volume Air Samplers), measuring real-time ambient PM₁₀ concentrations. The real-time data are compared to site-specific Alert and Action levels which are based on short term averaging periods (30 minute, 1 hour and 6 hour averages):</p> <ul style="list-style-type: none"> Alert levels are set at values that are indicative of the possibility of on-site activities contributing to ambient concentrations that may approach the NEPM standard and where reasonable and practicable management measures could be implemented to reduce this risk; and Action levels are set at values that indicate it is likely that on-site activities are contributing to ambient concentrations that may result in an exceedance of the DMMP target concentration and where reasonable and practicable, immediate management measures should be implemented to reduce this potential. <p>Further discussion is provided below in Section 4.4.2</p> |
| 39 | Private submitter 1 | The extension will be within approximately 200 m of business and dwellings. A Government Review conducted by Professor Tony Cook stated that Mining should not encroach any further than 400 m from business and dwellings. | KCGM is currently compliant with the MS 782 which stipulates that mining cannot occur closer than 400 m from residential zoned properties. The Revised Proposal will continue to comply with Condition 10-1 of MS 782). |
| 40 | Private submitter 1 | A noise level of up to 130 dB only on day shift and not on Sundays will affect shift workers and those at home on Saturdays. | <p>Maximum Noise</p> <p>The NVMMMP (Section 2.5.2.1) refers to the noise modelling that was performed to assess the noise from a representative digger with a Sound Power Level of 130 dB(A) <u>at the location of the digger, within the open pit boundary and behind the Environmental Noise Bund</u>. Figure 4 in the NVMMMP illustrates the noise contours from this model. It is expected that the noise from this type of activity would be less than 55dB(A) by the time that it reached the residential areas of Kalgoorlie/Boulder.</p> |

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| | | | <p>The results of Fimiston quarterly sound compliance monitoring are available for the past 25 quarters as well as the more detailed annual compliance report on the KCGM public website www.Superpit.com.au. The reports demonstrate KCGM is consistently performing under its sound requirements.</p> <p>Further discussion on KCGM's noise management compliance with and justification are provided in Section 4.4.1.</p> |
| 41 | Private submitter 2 | <p>The existing noise and dust levels from the current Fimiston operations is ridiculous. Another location or various locations should be selected downstream on land owned by Northern Star which facilitates what they want to achieve. Even the generation of dust during construction of the Proposed Fimiston III if it were allowed it will have impacts on the wider Kalgoorlie Boulder community as the company always tries to say they can't use hypersaline water on the stripping of topsoil as its destroys the regenerative process within the soil.</p> <p>Make the proponent put a new tailings storage facility well away from the current proposed location even south down near Lakewood or near Kaltails or similar areas where the proponent and its predecessor companies have already contaminated the lake system and wider environment. This will reduce the likelihood of dust generation over the town from the tailings and also possibly eliminate dust generation from construction activities keeping it well away from the Kalgoorlie Boulder community.</p> | <p>Dust</p> <p>Management of air quality and noise and vibration is addressed in the ERD as follows:</p> <ul style="list-style-type: none"> • Section 6. Environmental Factors and Objectives; Section 6.3 Air Quality; • Appendix D Screening Health Risk Assessment; • Appendix E Air Quality Impact Assessment; • Appendix F Fimiston Air Quality Management Plan (FAQMP); • Section 6. Environmental Factors and Objectives; Section 6.4 Social Surroundings; • Appendix M Prediction of Blast-Induced Ground Vibration and Overpressure; • Appendix O Fimiston Acoustic Impact Assessment; and • Appendix P Noise and Vibration Monitoring and Management Plan (Update) <p>A toxicological risk assessment of the PM₁₀ fugitive dust to quantify the potential for impact on residential receptors was recently completed subsequent to the ERD using an independent toxicologist as nominated by the EPA services.</p> <p>TSF Dam Location</p> <p>KCGM has undertaken a thorough options analysis to consider the placement of the Fimiston III TSF for the Fimiston South Project and the constraints are outlined in response to submission No. 27. The site chosen</p> |

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| | | | <p>provided the most appropriate location given the size, safety, environmental, biodiversity and constructability considerations.</p> |
| 41 | Private submitter 2 | <p>It has been observed that virtually no or little progressive rehabilitation has been undertaken on the very large waste dumps to the South and to the East of the Operations which has a substantial effect on the wider environment with the generation of very small dust concentrations on a large scale because very little rehabilitation has taken place.</p> <p>The proponent has not indicated the locations of where it will get topsoil which will be required to actually rehabilitate the very large waste dumps mainly to the east and south of the mining operations and these locations obviously will trigger and create further environmental effects from the Northern Star operations.</p> <p>It is recommended that the proponent place more Waste Rock dumps further south east on land they own so that the impacts of noise, dust along with light pollution are kept well away from the Kalgoorlie Boulder Community.</p> | <p>Rehabilitation</p> <p>KCGM has an ongoing rehabilitation program undertaken by a dedicated inhouse team.</p> <p>In 2021 rehabilitation works were temporarily discontinued on Fimiston TSFs due to concerns that buttressing could bury rehabilitation and associated topsoil. Rehabilitation works were then shifted to the WRD. Thereafter, expansion of the WRD footprint to full approval extent (southern boundary adjacent to Mt Monger road) required a pause in rehabilitation at the Fimiston WRDs for a short period of time. During that period, civil works to facilitate WRD expansion and construction of the southern noise bund were undertaken. Rehabilitation has now restarted on the WRDs, as can be seen on the South west corner of the Southern WRD in 2024 immediately south of the visitor's lookout). There are approximately two years of southern WRD slopes currently available for rehabilitation works at this point in time, with further slopes becoming available during the coming years. TSF slopes will become available when buttressing activities are reduced, as the new TSFs become fully operational.</p> <p>Topsoil</p> <p>Topsoil at KCGM is stockpiled in several locations near the WRDs; most stockpiles are not visible from the western side of the mine site. KCGM acknowledges topsoil is a scarce resource and makes every effort to stockpile the topsoil for later use in rehabilitation. Details on the locations, volumes and strategy for usage of the topsoil can be found in the Fimiston section of the Mine Closure Plan (Appendix U of the ERD documentation).</p> <p>WRD Locations</p> <p>It is not viable to place WRDs to the south of the existing WRDs, as the area has several additional restrictions - the flight approach path for the Kalgoorlie-Boulder airport, location of the Mt Monger Road and Gribble</p> |

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| | | | <p>Creek are three of the key constraints. The site chosen provided the most appropriate location given the size, safety, environmental, biodiversity and constructability considerations.</p> |
| 42 | Private submitter 3 | <p>Northern Star already produces far too much dust and noise from their operations and any expansion with a cutback only exacerbates the unacceptable environmental impacts which is occurring now without any further impacts. This detrimentally affects how I live and function in my home. The dust affects my health with breathing and as for the noise I am forced to sleep with ear plugs just so I get proper sleep in the evening so enough is enough.</p> <p>Northern Star needs to have stronger dust monitoring conditions so that the smaller dust particles are monitored for, not just PM 10. As for the Noise from the operations Northern Star already produces far too much noise day and night and they should not be given a noise regulation 17 exemption to exceed assigned levels.</p> <p>Northern Star should start monitoring for PM_{2.5} dust concentrations with more lots more monitors located in Boulder, Williamstown and other parts of Kalgoorlie Boulder so that we have a clear representation of very small dust particles being generated by the mining Operations.</p> | <p>Environmental Impacts</p> <p>KCGM engaged independent consultants to review future environmental cumulative impacts. The results of the “Screening Health Risk Assessment (HRA)” (Appendix D of the ERD) indicated there are <u>no</u> unacceptable acute or chronic non-carcinogenic or carcinogenic risks related to dust emissions. These potential short-term and long-term health effects are also expected to remain unchanged with no unacceptable risks when the Fimiston South Project is operational in the future.</p> <p>In addition, a toxicological review of the PM₁₀ fugitive dust (which includes PM_{2.5}) to quantify the potential for impact on residential receptors was recently completed subsequent to the ERD using an independent toxicologist. The report noted that</p> <ul style="list-style-type: none"> • Annual PM₁₀ for all KCGM monitors are within the guideline and longer-term health effects are not expected within the residential community; and • Moderately elevated 24-hour average PM₁₀ levels have been recorded at boundary monitors, but there would not have been any health effects expected from these short-term exposures to the community. <p>The management of Noise is discussed in response No. 37 & No. 40.</p> <p>PM_{2.5} Dust Monitoring</p> <p>DWER has maintained a PM_{2.5} monitor in the Kalgoorlie region since December 2017. DWER publishes annual air quality monitoring reports where it outlines exceedance events that have occurred over a year and attributes potential causes of the exceedance. Between 2017 and the end of 2021 (the most recent published annual report is for 2021), 11 exceedances of the 24-hour average NEPM air quality standard for PM_{2.5}</p> |

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| | | | <p>were recorded at the Kalgoorlie DWER monitoring station. As outlined below in a summary of the outcomes of the DWER investigations, all of the exceedances were attributable to regional bushfires or wood heater smoke in winter.</p> <ul style="list-style-type: none"> • 22 June 2018 – Wood heater smoke • 23 February 2019 – Bushfire • 24 July 2019 – Wood heater smoke • 23 December 2019 – Bushfire • 09 January 2020 – Bushfire • 23, 24 and 25 May 2020 – bushfire • 27 June 2020 – Wood heater smoke • 25 & 26 June 2021 – Wood heater smoke <p>The monitoring results indicate that PM_{2.5} in the Kalgoorlie region is not considered a regional issue in Kalgoorlie and that PM₁₀ monitoring at the boundary monitoring network is sufficient for managing dust impacts from KCGM operations. Results from the Western Australian Air quality monitoring publications are available through the DWER website Air quality publications (www.wa.gov.au)</p> |
| 43 | Private submitter 4 | <p>They should not be given a Noise Regulation 17 approval to increase noise levels or maintain noise levels and lift any dust levels without having further stricter environmental conditions that protect those closest to the operations from the negative impacts which also affect the amenity and other environmental factors within its definition from the Environmental Protection Act 1986. Those closest are not just the people from the boulder camp either, it is lots of other people that Northern Star have creatively misrepresented in its Environmental Review document with no care for the environmental consequences and impacts which follow.</p> <p>Northern Star should monitor dust levels at far smaller concentrations like PM 2.5 not just PM 10 dust particulates. It is the dust in the air that you cannot see from Northern Stars super pit that does all the real harmful effects to people's health. In Port Hedland the proponent is made to monitor</p> | <p>Noise</p> <p>In recognition of the proximity of Fimiston Operations to sensitive receptors, it has been noted by the EPA that it is both impractical and unreasonable for KCGM to comply with the noise standards as prescribed under the Environment Protection (Noise) Regulations 1997 (Noise Regulations). As a result, KCGM has been given approval by the Minister under Regulation 7 and 17 of the Noise Regulations to exceed or vary operational noise from the prescribed noise levels. KCGM has been operating for more than 15 years since the grant of the first noise approval in 2009: <i>the Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2009</i>.</p> <p>KCGM is not seeking an increase to the current approved noise levels, but an extension to the existing approval to allow for operations to continue.</p> |

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| | | <p>PM 2.5 dust levels and have continuous online public reporting of these levels from known selected monitoring stations. Continuous PM 2.5 dust levels need to be monitored from all sites and not just one selected site that is remote and far away. Its time this operation was pulled into line so the people of Kalgoorlie Boulder are not exposed to harmful health effects of dust particulates.</p> | <p>KCGM continues to investigate best practice methods to assist in reducing noise from operations.</p> <p>Section 4.4.1 below provides further information on KCGM's management of and adherence to noise conditions.</p> <p>PM_{2.5} Dust Monitoring</p> <p>KCGM notes the comments from the submitter made in relation to dust and believe that these have been adequately addressed in the response above (No. 42)</p> |
| 43 | Private submitter 4 | <p>The proponent has not detailed what specifically it will be in for the areas they have marked north of the Kaltails storage facility shown as "Infrastructure Water Management". "TSF infrastructure Closure" and also to the south west of the Kaltails Tailings storage facility shown as "Infrastructure Water Management". Without any specific details shown in this environmental review document this could be contaminated site materials or something else which requires more consultation on this.</p> | <p>The Eastern Floodway is significantly disturbed by historic anthropogenic activities. The relatively flat land surface, together with old disturbances e.g. pastoral artifacts or windrows, often results in blockage to natural surface water flow. The water management areas are areas where a small percent of disturbance will be allowable to open these blockages, if they occur, and allow natural flow. Unless KCGM applies for this, we are unable to rectify observed impediments to natural flow, for example ensuring good flow through culverts or areas with minimal gradient and historical changes to the land surface. The vegetation types occurring in these areas has been considered in the assessment.</p> <p>The details for the areas marked as "Infrastructure Water Management" (example shown in Figure 3 of the ERD) are not specifically required for the assessment of the EPA through the Part IV approval. Further detail on the activities and infrastructure that will be required for operations in this and other areas of the project, will be outlined, described, and justified in the Mining Proposal. This will be prepared as per Section 700 of the Mining Act submitted to DEMIRS for assessment under Section 74(1a) of the Mining Act.</p> <p>KCGM has various ways which it elicits feedback and input from the community and will continue to consult with all relevant stakeholders, for ongoing works</p> |

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| 44 | Private submitter 1 | Dust and Fly rock created from the proposal is not believed to have a significant impact. However, previous events, such as that report by ABC in January 2021, suggests otherwise. | <p>Management of air quality and noise and vibration is addressed in the ERD as follows:</p> <ul style="list-style-type: none"> • Section 6. Environmental Factors and Objectives; Section 6.3 Air Quality; • Appendix D Screening Health Assessment; • Appendix E Air Quality Impact Assessment; • Appendix F Air Quality Management Plan; • Section 6. Environmental Factors and Objectives; Section 6.4 Social Surroundings; • Appendix M Prediction of Blast-Induced Ground Vibration and Overpressure; and • Appendix P Noise and Vibration Monitoring and Management Plan (Update) <p>Flyrock</p> <p>KCGM assumes that the ABC report the submitter is referring to is the article titled “Million-tonne blast rocks Super Pit as mine owners look to complete \$16b merger”.</p> <p>Key points summarised in the article were:</p> <ul style="list-style-type: none"> • The Super Pit has produced more than 21 million ounces of gold since open pit mining began in 1989; • At nearly 3.5 km long, 1.5 km wide and 600 m deep, the Super Pit is so big it is visible from space; and • The mine’s co-owners, Northern Star Resources and Saracen Mineral Holdings, were set to complete a \$16B merger next month. <p>The article highlighted an <u>unusually</u> large blast that moved almost one million tonnes of ore in 25 seconds and was watched from the Super Pit</p> |

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| | | | <p>public lookout by hundreds of locals. The blast was part of a large cutback of the Super Pit's eastern wall, which is being remediated following severe rock falls that occurred in May 2018. All blast and dust environmental monitoring compliance criteria were met by KCGM for this blast.</p> <p>KCGM have a robust Environmental Management System that allows operations to detect Trigger and Threshold levels in the various management plans mentioned above to avoid adverse impacts to the environment from flyrock and dust.</p> |

3.8 Greenhouse Gas Emissions

3.8.1 Agency submissions

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 45 | DWER | <p>Although emission scopes are discussed, the sources of emissions and the project phases in which they are generated are not clearly defined.</p> | <p>Sources of Emissions:</p> <p>Sources of Emissions are discussed in Section 2.3 of the GHGMP. The mine will not have a separate construction phase as operations and construction will be occurring at the same time. Emissions have been discussed as a whole for the operation and a separate phase for the expansion has not been separated from the operational emissions calculations.</p> <p>Scope 1 emissions are generated from the burning of fuel. At KCGM this occurs from the use of diesel fuel to transport ore and waste rock from the pit to the mill or WRD. Other vehicles such as dozers, excavators, light trucks and drill rigs also use fuel and contribute to the Scope 1 estimate. Additional emissions are generated from the use of explosives, LPG in processing carbon regeneration kilns and in the gold room furnace, oils and greases for truck maintenance, gasoline and sulfur hexafluoride (in electrical equipment) also contribute to Scope 1 emissions. There is constant construction occurring across the site, not only restricted to this Revised proposal, at the same time as mining operations and these cannot be broken into distinct emission packages/phases. The increased truck movements are captured in the tonnes moved/diesel needed calculations for Scope 1.</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| 46 | DWER | It is noted that land clearing emissions are not included in the total scope 1 emissions for the three scenarios presented. | <p>Clearing Emissions</p> <p>New clearing proposed in the ERD is 1,580 ha not 2,246 ha as listed in the previous version GHGMP. This equates to 189,699 t CO₂-e not 269,663 t CO₂-e. These emissions will occur in 2025-2027 and have been included in Table 2 and Figure 4 of the GHGMP Revision 1 (Appendix H of this document). The three scenarios have been removed as they are confusing. The updated GHGMP now considers the most likely scenario which is Scenario 3. This scenario included the consideration of the increase to the mill throughput due to optimised plant infrastructure which increases Scope 2 emissions and applies renewable energy projects to reduce emissions.</p> |
| 47 | DWER | Waste and recycling are not addressed and appear under both scope 1 and scope 3. The 'GHG Protocol Corporate Value Chain (Scope 3) Accounting and reporting Standard' (World Resources Institute and the World Business Council for Sustainable Development, 2013) is a useful guide to identify potential sources of scope 3 emissions (both upstream and downstream). Additional information on accounting for emissions across the value chain can be found in <i>GHG Protocol A Corporate Accounting and Reporting Standard (World Resources Institute and the World Business Council for Sustainable Development, 2015)</i> . | <p>Emissions Accounting</p> <p>The use of company vehicles to move waste rock to access gold ore is a large component of fuel use and generation of Scope 1 emissions. Waste (separate to waste rock) generated in the company is a Scope 3 emission, and as it will be treated by third-party operators it falls under Scope 3 for Northern Star and Scope 1&2 for the third-party. The GHGMP Section 2.3 has been updated to make sure this is clear.</p> |
| 48 | DWER | <p>Limited information was provided on the methodology for calculating emissions and no calculations were included to assist in verification.</p> <p>Table 1 and section 3.1 of the Greenhouse Gas Management Plan (GHGMP) outlines Scope 1 and 2 emissions data based on 2023 NGER Act data reporting, which has been used to form the baseline. The table indicates the use of 2,791.7 kilolitres of SF6 per annum and the equivalent of 25 tonnes of carbon dioxide equivalent (t CO₂-e) per annum. Please provide further clarification if the annual estimate for SF6 (in t CO₂-e) has been calculated based on fugitive emissions</p> | <p>Section 10 of the GHGMP has been updated with more information on the calculation methodology and includes details for Scope 1 and Scope 2 emissions methodologies.</p> <p>SF6 tonnes is calculated using the stock in the switchgear totalling 188.8kg. The calculation is (SF6 stock x GWP) x default leakage rate of SF6. This results in 25 t CO₂-e, which means the above statement is correct.</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>expected to be emitted for the proposal, noting that a Global Warming Potential (GWP) of 23,500 has been provided for SF6 in the IPCC Fifth Assessment Report (AR51).</p> | |
| 49 | DWER | <p>No clear baselines have been defined. The Greenhouse Gas Management Plan (GHGMP) refers to baselines associated with the Safeguard Mechanism (SGM). However, these are calculated annually, dependent on production (i.e. emissions intensity) and application of the SGM rule.</p> <p>The emissions baseline adopted for the proposal should be consistently referenced throughout the GHGMP.</p> <p>KCGM's response to Comment 51 of the Response to Submissions (RtS) states that an emissions baseline of 440,689 t CO₂-e has been adopted based on Financial Year (FY) 2023. However, the GHGMP indicates that this figure is for Scope 1 and Scope 2 emissions (combined) and several different emissions baselines are referenced throughout the GHGMP, for example:</p> <p>The GHGMP Executive Summary and section 3.2 states that the emissions baseline for Scope 1 and Scope 2 emissions across the whole organisation will be reduced from a baseline (1 July 2020) of 930,000 tonnes of carbon dioxide equivalent (t CO₂-e) down to approximately 590,000 (t CO₂-e) using 2024 as the baseline year.</p> <p>Page 10 of the GHGMP indicates that the annual emissions for Scope 1 and Scope 2 have been estimated over the life of mine until 2034 (11 years), based on the current understanding of the emissions inventory (Table 1) using 2023 NGERs data reported to form the 'base case' and references a baseline of 421,774 t CO₂-e.</p> <p>Pages 18 and 19 of the GHGMP state that the emissions baseline for Scope 1 and 2 emissions is 440,689 t CO₂ based on FY 2023 data.</p> | <p>Section 3.1 of the GHGMP mentions the emissions per annum from 2021-2023. The baseline was to be set at the most recent year emissions prior to commencement of the expansion. This commencement keeps moving out requiring updates to the baseline. The most recent Safeguard baselines for Scope 1 emissions will now be calculated as emission intensities which change with production throughout. These have been updated and sent to the Clean Energy Regulator, but have not yet been approved. Draft Production Variable Facility-specific Emissions Intensity baselines are included in Section 3.2.</p> <p>The Baseline scope emissions are based on the emissions calculated for FY2024:</p> <ul style="list-style-type: none"> • Scope 1: 207,619 tonnes CO₂-e • Scope 2: 182,851 tonnes CO₂-e • Scope 1&2: 390,470 tonnes CO₂-e <p>The statement about 930,000 tonnes of carbon dioxide equivalent (t CO₂-e) down to approximately 590,000 (t CO₂-e) is for the whole of Northern Star's multiple operations and has been provided for context.</p> <p>Emissions for the project will increase over the next three years and then will decline faster than the 4.9% until 2034. Scope 1 and 2 emissions will reduce from 390,470 to 84,761 t CO₂-e at 2034.</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>In accordance with the Environmental Factor Guideline Greenhouse Gas Emissions (EFG GHG) and associated GHG environmental management plan (EMP) template (GHG EMP template), the GHGMP should provide the emissions baseline proposed at the commencement of the trajectory of emissions reductions for the proposal under assessment.</p> | |
| 50 | DWER | <p>Baselines used at commencement are not clearly presented in the figures as per section 3.2 of the GHG Environmental Management Plan (EMP) template.</p> | <p>The most recent Safeguard baselines have been updated and sent to the Clean Energy Regulator, but have not yet been approved. Baselines at commencement could refer to a starting emissions level for the project or an emissions intensity level. The new Safeguard baselines are Production Variable Facility-specific Emissions Intensity baselines and these are included in Section 3.2.</p> |
| 51 | DWER | <p>Trajectory of emission reductions should be provided in line with section 3.2 of the GHG EMP template.</p> <p>The trajectory of emission reduction graphs presented in the GHGMP should clearly demonstrate the achievement of net zero emissions no later than 2050 along a linear trajectory for the proposal under assessment. Table 8 of the GHGMP outlines 'Scope 1 and 2 Interim Five Yearly Targets', but these yearly target timeframes have been represented over 6-year (2025-2030) and 4-year (2031-2035) periods. Please amend or provide justification for why this 6 and 4 year timeframe has been selected.</p> <p>The EFG GHG states that "The EPA's usual minimum expectation for proposals is for deep, substantial and sustained emissions reductions this decade and achievement of net zero emissions no later than 2050 along a linear trajectory (at a minimum) from 2030". The Scope 1 and 2 trajectory of emissions reductions should be presented both separately and together in line with the GHG EMP template (section 3.2).</p> | <p>The annual emission baseline selected for emission reduction trajectories is the 2024 Financial Year baseline of 390,470 t CO₂-e.</p> <p>Graphs updated in Section 3.1 and 3.2 of the GHGMP include:</p> <ul style="list-style-type: none"> • Trajectory of annual emissions, and total emissions over the expected life of the proposal • Trajectory of emissions which will be avoided, reduced and offset (separately and together) <p>Table 8 in the GHGMP show the 5-year commitments and targets have been prepared and included in Section 3.2 of the updated GHGMP.</p> <p>A Scope 3 emissions graph (Figure 3) has been included in Section 3.1 in the GHGMP.</p> <p>The Interim Targets are now set out in 5-yearly timeframes. Additional reductions have been included for Scope 1 emissions as required. Additional tables and graphs have been generated to clearly outline Scope 1 and 2 emissions as requested. New trajectory Figures have been provided (Figures 8 & 9).</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>The EFG GHG states that the GHGMP should outline transparent emission estimates and clear targets for commitments for short term reductions, and targets for medium to long term reductions (noting a minimum expectation of 5-year targets). The GHG EMP template states that:</p> <p>the 5-year commitments and targets should be overlaid in the trajectory graphs.</p> <p>trajectory tables should include annual emissions, emissions totalled for 5-year commitments and targets, and life of proposal emissions</p> <p>trajectories should show which emissions will be avoided, reduced and offset (separately and together).</p> <p>Proposal emissions targets and trajectories in the GHGMP should align with the EFG GHG and GHG EMP template. Scope 1 emissions should be provided separately. The GHGMP should clearly demonstrate that the trajectory of emission reductions for the proposal under assessment achieves net zero emissions along a linear trajectory no later than 2050. Scope 1 emissions should include all emissions caused as a direct result of the proposal, including emissions associated with the clearing of vegetation (and loss of sequestration potential where relevant).</p> <p>Note that renewable energy projects need to be connected to a main electricity grid (South West Interconnected System) and accredited under Safeguard if they are proposed to be used for Scope 1 emissions mitigations and reductions.</p> | <p>Vegetation Clearing FULLCAM calculations have been included in the Scope 1 calculations and are responsible for the sharp increase in emissions for the first three years of the project.</p> <p>Emissions intensity calculations based on gold produced in ounces per tonne of ROM mined and based on the industry standard emissions. The resulting graph shows that there may be a requirement for ACCUs, but it should be noted that the mining volumes are estimates. The Safeguard mechanism permits the inclusion of Scope 2 abatement in Scope 1 reductions (to reduce ACCUs) when the Scope 2 renewable energy is used to power electric haul trucks replacing fuel usage. This is reflected in the GHGMP.</p> |
| 52 | DWER | <p>Section 3.4 of the GHGMP details the mitigation measures implemented to reduce scope 1, 2 and 3 emissions. However, further detail and clarity is required on how the adopted measures are considered best practice.</p> | <p>A project comparison table is included in Appendix H (GHGMP (refer to Table 9 of the GHGMP) and in Section 4.5. Best practice discussion and comparison is included in Section 3.3 Benchmarking in the GHGMP.</p> |

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| 53 | DWER | <p>Further information is required to meet the requirements under section 3.3 of the GHG EMP template.</p> <p>The GHGMP should provide estimates for all potential emissions avoidance, mitigation and best practice measures proposed for the proposal under assessment and should be updated to include these estimates (t CO₂-e).</p> <p>The EFG GHG states that the GHGMP should outline strategies that demonstrate how best practice measures have been adopted to avoid or reduce a proposal's Scope 1 emissions at commencement, and throughout the life of the proposal through regular reviews. The GHG EMP template outlines that estimates of emissions avoidance and reduction from adoption of best practice measures should be provided.</p> <p>A GHGMP review for the proposal was provided as Appendix I. However, this does not adequately address the requirements outlined in the EFG GHG that the GHGMP should be accompanied by:</p> <ul style="list-style-type: none"> • an expert review that has been undertaken to demonstrate how best practice measures have been adopted. This a key document for the EPA and the EPA usually requires independent expert review of best practice measures for all GHGMPs. • an expert review of whether the offsets that satisfy integrity principles are likely to be reasonably practicable and available at the time of proposed future surrender. • any reviews that demonstrate that the proposal is consistent with, or outperforming, relevant sector pathways and, benchmarks and/or milestones. <p>The GHG EMP template provides further specifications about the expectations for expert reviews and best practice.</p> | <p>The project comparison table included in attached supporting documentation (refer to Table 9 of the GHGMP). Summary of best practice and comparison benchmarking against other projects is included in Section 3.3 Benchmarking.</p> <p>This demonstrates that KCGM's targets of a 35% reduction by 2030 and net zero by 2050 are the same or better than similar gold mines within WA.</p> <p>Gruyere and Carosue Dam were the only sites that have operational renewables projects, however, when the proposed Kalgoorlie Renewables project is commissioned, it will have the highest renewable power generation and Scope 2 emissions can be offset by approximately 260,000 t CO₂-e. To date, other companies such as Newcrest and Newmont do not have committed plans for renewable energy projects at the sites listed above.</p> <p>Based on the information above, while GHG reduction targets are similar, the GHG minimisation steps undertaken by KCGM are significantly better than other companies with similar aged mines.</p> <p>Emission reduction measures are evaluated against social, cultural, environmental and economic parameters. Northern Star has restricted access to land that is held by others and detailed multi-criteria analysis is used to select suitable mitigation measures. The Revised Proposal is an expansion to the existing KCGM Operations and improvements are continually being investigated to improve efficiency and to reduce fuel use, which is a major cost to gold production.</p> <p>The GHGMP outlines strategies that demonstrate how best practice measures have been adopted to avoid or reduce the proposal's Scope 1 emissions.</p> |

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| | | <p>The GHGMP should be updated to align with the EFG GHG and GHG EMP template and the supporting expert review report(s) should be provided prior to the EPA finalising its assessment. It would be preferable to have the review report(s) prior to attendance at the EPA Board meeting agenda item for the proposal.</p> | <p>An expert review of best practice mitigation measures, sectorial benchmarking and offsets was undertaken by Aurecon (2024) and the GHGMP was updated accordingly.</p> |
| 54 | DWER | <p>Section 3.3 outlines the benchmarking assessment however further information to justify the approach and facilities chosen is required. Additionally, to allow for ease of comparison, emission intensities and characteristics for each facility could be presented in a table.</p> <p>Table 9 of the GHGMP indicates that the proposal comprises an emission intensity of 1.02 t CO₂-e/oz. This emission intensity for the proposal sits at the high-end of the benchmarking provided, with the lowest being Carosue Dam (0.62 t CO₂-e/oz), the highest being Telfer (1.28 t CO₂-e/oz) and the average is 0.81 t CO₂-e/oz. Please provide further details regarding consideration of best practice to improve performance or setting targets for emissions intensity improvement over time, as detailed in the EFG GHG.</p> | <p>The emissions intensity of the Revised Proposal is similar to other large gold mining projects in WA. The average emissions intensity across the gold miners was 0.81 t CO₂-e/oz with four of the eight mining operations listed coming under this value. Kalgoorlie Operations, excluding KCGM, was the best performing site with an emissions intensity of 0.59 t CO₂-e/oz, however, it is noted that the site is a smaller operation, with less gold produced and purchased electricity from the grid. KCGM operations at 1.02 t CO₂-e/oz is on the higher side but well below Telfer at 1.27 t CO₂-e/oz.</p> <p>There were calculations errors in the table and graph and these have been updated with the correct benchmark as per above.</p> |
| 55 | DWER | <p>It is noted that the proposal will source power from the Southwest Interconnected System (SWIS) (scope 2), therefore the proponent should discuss the Sectoral Emissions Reduction Strategy as per section 3.4 of the GHG EMP template. The State Government's Sectoral emissions reduction strategy was released in December 2023.</p> | <p>Emissions reduction in relation to the SWIS have been accounted for in the annual conversion factor supplied by the government. A table in Section 10 of the GHGMP has been included that details the SWIS conversion factors.</p> |
| 56 | DWER | <p>Further justification for scope 3 inclusions and exclusions is required as outlined in section 3.5 of the GHG EMP template.</p> | <p>A table of Scope 3 emissions and justifications has been prepared and included in Section 3.1 of the GHGMP.</p> |
| 57 | DWER | <p>As per section 3.6 of the GHG EMP template the proponent should discuss the baseline and trajectory (or decline rate) of emissions proposed under the SGM (where a baseline decline of 4.9 per cent each year is proposed from 1 July 2023 to 2030). Ideally this information should be presented in graph(s) and table format as tonnes of CO₂-e and with time periods aligning.</p> | <p>A reform to the Safeguard Mechanism passed parliament on 30 March 2023 to help Australia reach its net zero target by 2050 and align with recent commitments to a 43% reduction below 2005 emission levels by 2030. The reform achieves this by removing "headroom" from the current baselines and then to tighten Scope 1 baselines by 4.9% per year until 2030 with further reductions until 2050. While this 4.9%</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>Comment 57 stated that as per section 3.6 of the GHG EMP template the proponent should discuss the baseline and trajectory (or decline rate) of emissions proposed under the Safeguard Mechanism (where a baseline decline of 4.9 per cent each year is proposed from 1 July 2023 to 2030). Ideally this information should be presented in graph(s) and table format as tonnes of CO₂-e and with time periods aligning.</p> <p>A reform to the Safeguard Mechanism passed parliament on 30 March 2023 to help Australia reach its net zero target by 2050 and align with recent commitments to a 43% reduction below 2005 emission levels by 2030. The reform achieves this by removing “headroom” from the current baselines and then to tighten Scope 1 baselines by 4.9% per year until 2030 with further reductions until 2050.</p> <p>KCGM’s response states that while the 4.9% reduction is mandated under the Safeguard Mechanism, significant changes in operations would be required including reductions in mining and processing. The response states that with the new focus on emissions intensity per ROM tonnes milled it may be achievable. The focus for the Revised Proposal is the reduction in Scope 2 emissions where KCGM has more abatement options.</p> <p>The GHGMP should be updated to align with the EFG GHG for the achievement of net zero emissions no later than 2050 along a linear trajectory (at minimum) from 2030 for Scope 1 emissions.</p> | <p>reduction is mandated under Safeguard significant changes in operations would be required including reductions in mining and processing. With the new focus on emissions intensity per ROM tonnes milled it may be achievable. The focus for the Revised Proposal is the reduction in Scope 2 emissions where KCGM has more abatement options.</p> <p>Safeguard trajectory tables and figures have now been included in the GHGMP and compared with the forecast mitigations for Scope 1. The graphs demonstrate that by 2030 KCGM emissions reductions will be greater than that proposed Safeguard mechanism (Table 13, Figure 8). ACCUs may be required prior to this date to meet Safeguard requirements.</p> |
| 58 | DWER | <p>As outlined in section 3.8 of the GHG EMP template, further detail and clarification on the estimated volume and proportion of proposal estimates to be offset, and a summary of offset integrity and assurances mechanisms for the proposed offsets are required.</p> | <p>As noted in Section 10 of the GHGMP, KCGM is focussed on reducing net carbon emissions through the implementation of two renewable energy projects. Estimates have shown that this should achieve a reduction of approximately 260,000 t CO₂-e, and therefore it is KCGM’s intention not to have reliance on carbon offsets to assist with their abatement.</p> |

| No. | Submitter | Submission and/or Issue | Response to Submission |
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| | | <p>The GHGMP states that offsets are not planned and only intended to be used as a last resort. Table 11 of the GHGMP (trigger/response actions), outlines that the threshold is for if emissions reported for the facility are higher than the Safeguard Mechanism baseline. However, this is inconsistent with Section 3.10 of the GHGMP which states offsets will be used if the proponent is not able to meet the emissions reduction targets of the GHGMP. The GHGMP should be updated to be consistent with the requirements of the EFG GHG.</p> <p>The GHGMP should detail what contingencies are in place if emission avoidance and mitigation measures are not implemented or the renewables projects and carbon sequestration or carbon farming projects do not go ahead or are delayed. In line with the EFG GHG, the GHGMP should provide further information and certainty regarding what other offsets are proposed or may be available, if required, and to what standards they will meet (i.e. offset integrity and availability). In addition to the proposed reporting and evidence of surrender of offsets.</p> <p>The EFG GHG states that the GHGMP should typically be accompanied by an expert review undertaken of whether offsets that satisfy integrity principles are likely to be reasonably practicable and available at the time of proposed future surrender. The GHG EMP template provides further specifications. A summary of this review and the review report should be provided.</p> <p>Note that renewable energy projects need to be connected to a main electricity grid (South West Interconnected System) and accredited under Safeguard if they are proposed to be used for Scope 1 emissions mitigations and reductions.</p> | <p>Offsets for abatement of emissions will be considered a last resort in the event KCGM is not able to meet the targets outlined in Figure 3 in the GHGMP. Should offsets be required, Northern Star’s preferred approach will be to generate the offsets such as carbon sequestration projects from within local communities and with stakeholder involvement, to benefit our stakeholders. To this end Northern Star has earmarked three pastoral leases in the Goldfields with potential for such projects. These offsets are still under development and may not be needed so it is difficult to provide more information at the stage. Further detail can be provided if and when offsets are required. Any requirement for the need to implement carbon offsets will be included in the review of the GHGMP.</p> <p>Where offsets are required, NSR proposes to use ACCUs to meet the required reductions. As part of this strategy it will seek to obtain “high quality nature based” ACCUs, which may include (but not limited to) environmental planting, savanna fire management and human induced regeneration (including from its own pastoral leases). To this end Northern Star has earmarked three pastoral leases in the Goldfields with potential for such projects.</p> <p>More information on these offsets is included in Section 3.10 of the GHGMP.</p> |

3.8.2 Public submissions

KCGM did not receive any submissions from the public in relation to greenhouse gas emissions for the proposed project.

4 SUPPLEMENTARY INFORMATION

The section presented here offers additional insights and context to enhance the understanding of the answers given by KCGM in Section 3.

4.1 Stakeholder Consultation

The information presented in the referral and the Environmental Review Document have been prepared with the relevant EPA Guidance. At the time of drafting and submission, this was the *EPA Instructions on how to prepare an Environmental Review Document*, Version 1.1 March 2022 (EPA 2022). Whilst this guidance has since been reviewed and updated by the EPA in March 2024, KCGM has complied with all relevant EPA requirements in preparing this submission for assessment. It is appreciated that the preparation of a document for an environmental impact assessment will inevitably contain high level, detailed information that will be required to be reviewed by subject matter experts, it is certainly not the intention of KCGM to make this incomprehensible to members of the public. There is a fine balance between providing details for the regulating authorities to apply their scientific rigour and certainty in order to make an informed assessment and ultimately, recommendation on the project, whilst also providing adequate context and information to the members of the public for them to also provide valuable feedback on the proposed activities. Northern Star values the input provided from stakeholder within the community and have outlined in **Section 3.2.2** the focussed efforts to elicit the engagement and input from the members within the local community.

4.1.1 KCGM commitment to the community

A recent example of European cultural heritage consideration and procedural fairness in action, is the Williamstown Relocation Program. Since November 2021, Northern Star has implemented a voluntary relocation program; initiated in response to community concern about the impact of nearby mining activity. Northern Star undertook extensive consultation involving over 60 households from April 2021 to October 2021 to understand community sentiment and explore potential solutions.

The community's response to the program has been overwhelmingly positive, with over 80% of residents supported to relocate. As part of the program, Northern Star committed to undertaking a Heritage Project, celebrating the history of Williamstown and its' residents. The project captured stories and experiences of Williamstown residents in a way that was respectful, meaningful and engaging, celebrating the unique culture of the Williamstown area. The Williamstown History and Heritage exhibition was displayed publicly at the WA Museum of the Goldfields and remains today, a standing exhibition at the Mining Hall of Fame. Following property demolition, all character features such as bricks, flooring and iron claw baths have been salvaged by a local contractor.

KCGM Operations has demonstrated a long-term history of managing areas of historical significance. For example, previous cutbacks (in early 2000's) where expansions of the operation impacted historical sites, comprehensive management plans were undertaken. Condition 10-2 of the current MS 782 states "The proponent shall liaise with the Heritage Council of Western Australia to minimise environment impacts associated with active mining on State Registered Places known as the Boulder Railway Station, Subway and Loopline, and Cornwall Hotel." This requirement has been met throughout the implementation of the current MS782.

Northern Star, and all of its' Goldfields operations, are intrinsically intertwined with mining history and are active in supporting the maintenance of heritage items. Northern Star is the proud owner of the Hannans North Tourist Mine, where many examples of early mining technology and artefacts are on display. Northern Star's KCGM Operations have managed and maintained this facility as a going concern since 2012 and plans to continue managing and maintaining, for the foreseeable future. Northern Star is also a long-term supporter of the Eastern Goldfields Historical Society, funding various heritage exhibitions and are the major sponsor of the Australasian Mining History Association conference, set to be held in the Goldfields in September 2024.

4.2 Flora and Vegetation

4.2.1 Clarification on novel taxa

Section 6.4.3.5 of the referral (AECOM, 2022) noted that there was a single population of a locally significant flora, *Streptoglossa aff cylindriceps* in the area designated as the Floodway, north of the study area, in a location that will not

be cleared (Figure 12 of the referral). This record of *Streptoglossa. aff. cylindriceps* represented a potentially new, undescribed taxon.

A specimen of this population was sent to the WA Herbarium for verification, and it was determined that this was not part of the *Streptoglossa aff cylindriceps*, and was determined to be *Streptoglossa liatroides*, which is not considered to be a species of conservation significance.

4.2.2 Eremophila locations within the Revised Proposal Disturbance Areas

Additional targeted *E. praecox* regional surveys were undertaken in July 2024 to provide more understanding on the numbers of plants and populations in the region and the range of the species. This new data provides updated context on the impact of the proposal on the species.

Implementation of the proposal will result in a direct impact of clearing up to 126 of *E. Praecox* plants. The recent mapping (Phoenix, 2024) has recorded 729 individual plants in a 100km radius of the Fimiston Proposal. There are 75 populations recorded of which 13 are within the MDE. Of the populations within the MDE individual plants will be removed but no population will be removed in its entirety.

Table 1: Summary of *E. praecox* data

| Description | Individuals | Populations | % |
|--|-------------|-------------|-----|
| Total known individuals within local region (after removing 22 individuals known by KCGM to have been cleared / will be cleared at other projects) | 729 | | |
| Known individuals in Conservation Reserves | 193 | | 26% |
| Known individuals in MDE | 186 | | |
| Known individuals in disturbance footprint | 126 | | 17% |
| | | | |
| Total populations | | 75 | |
| Regional populations | | 62 | |
| Revised Project populations | | 13 | |
| Number of populations to be removed by the Revised Proposal | | 0 | |

Mapped occurrences of *E. praecox* from field surveys are included into KCGM GIS data base and avoided wherever possible. KCGM will endeavour to avoid indirect impacts by protecting the species from unnecessary habitat disturbance, including changes to hydrology; air, water and ground pollution; introduced plant species; and unauthorised entry.

Potential impacts on vegetation and fauna habitat from dust deposition will be managed via the implementation of the KCGM-ENV-010 Dust Monitoring and Management Procedure (DMMP), a subcomponent of the Fimiston Air Quality Management Plan (FAQMP).

To minimise indirect impacts on vegetation from rising saline water KCGM will continue to implement the Seepage and Groundwater Management Plan (SGWMP).

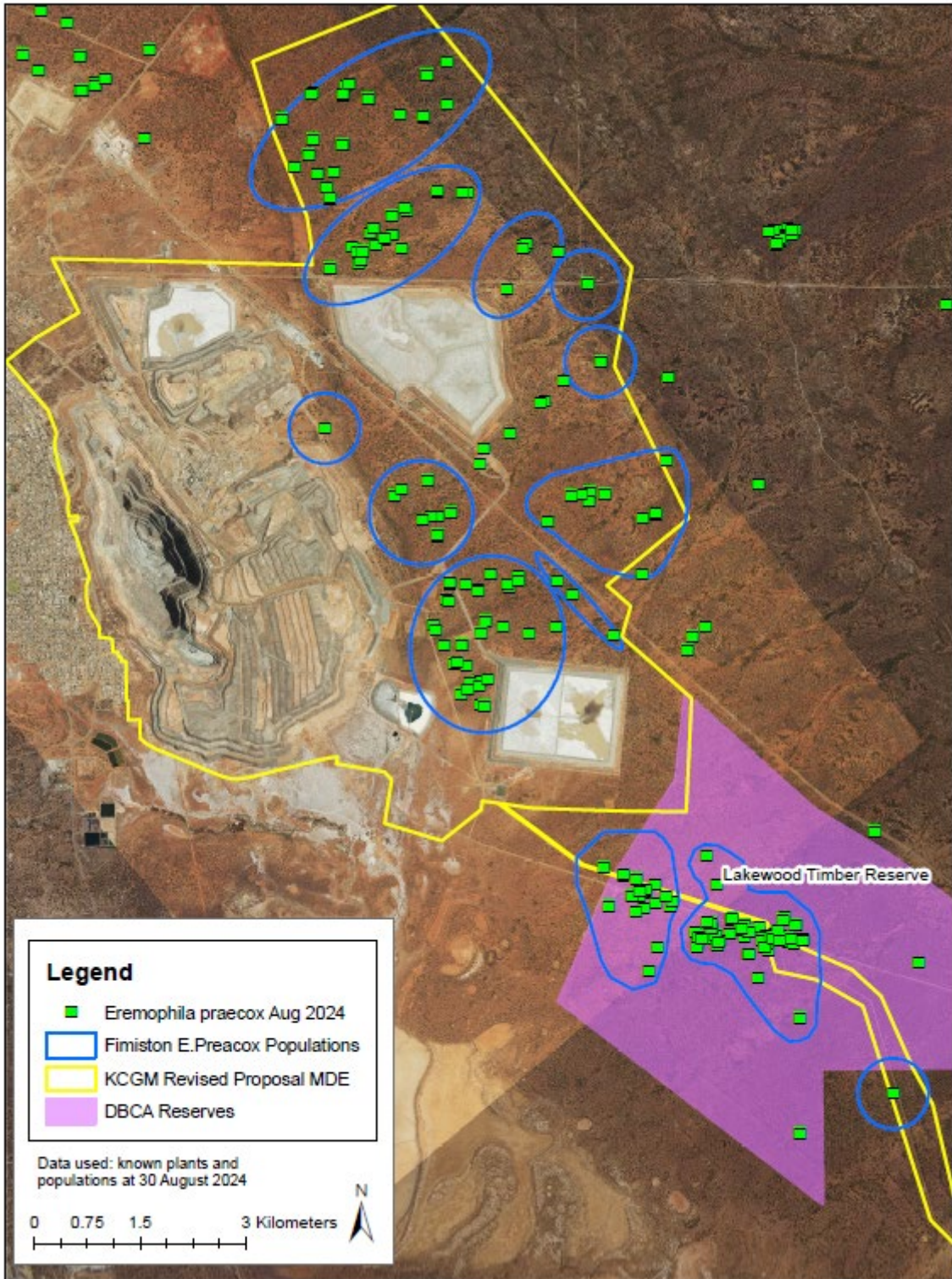


Figure 1 *Fimiston E. praecox* populations

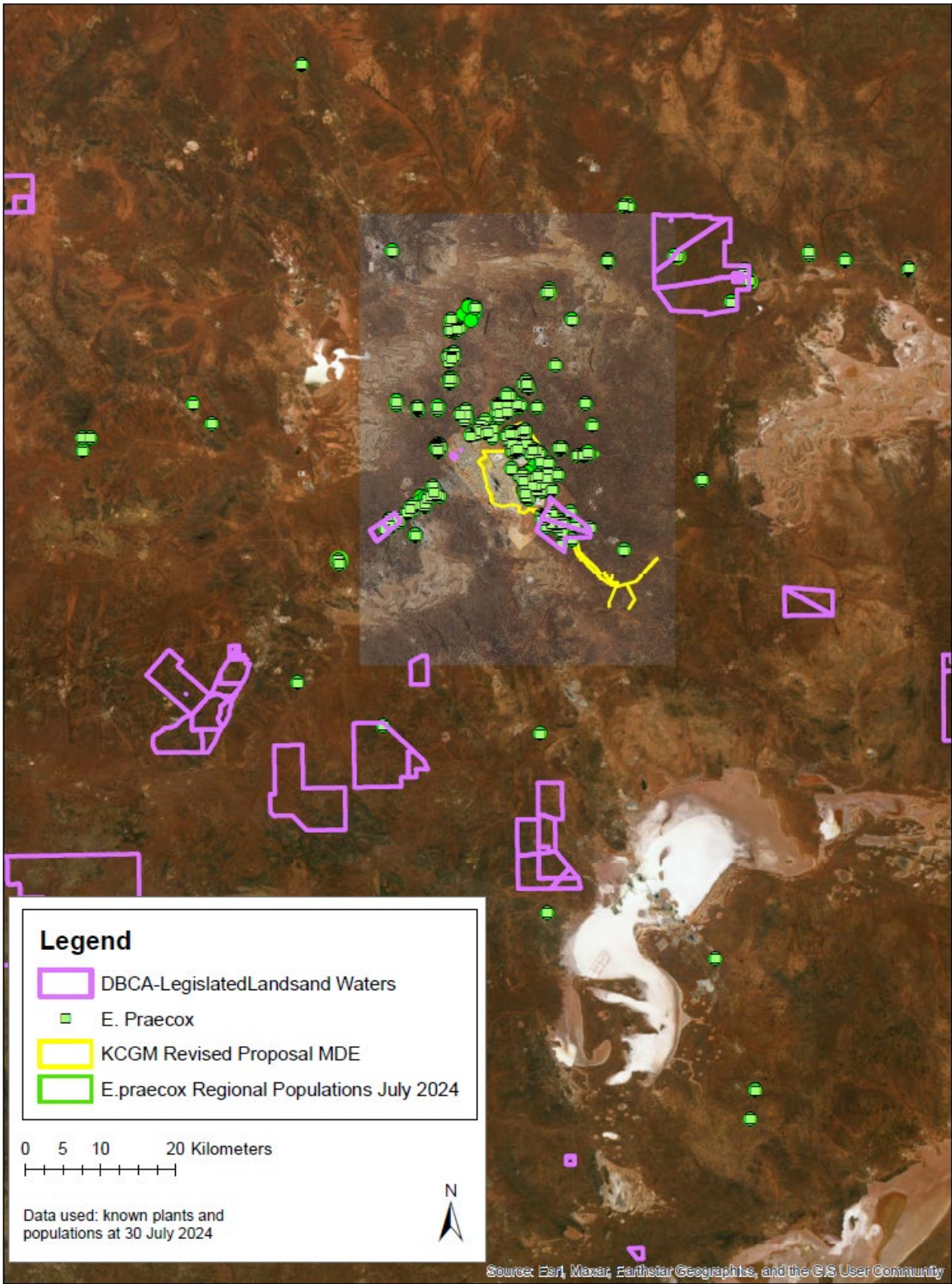


Figure 2 Regional *E. praecox* populations

4.2.3 Weed management

The KCGM Weed Management Procedure (NSR-ENV-004-PR) outlines the management and mitigation measure for the avoidance and control of weeds for the current operations. The Weed Management Procedure aligns with the controls outlined in Table 33 of the ERD.

The Weed Management Procedure has been reviewed and updated in August 2023. At the time of drafting the ERD, the 2021 version of the Weed Management Procedure was the reference document for the preparation of that section and this reference may have been overlooked during the internal reviews. However, the management actions contained within the Weed Management Procedure are the current management practices for the control of weeds on site for the current KCGM operations. The Proposal does not present a change to current operations, but rather an expansion of existing operations and activities and the management and mitigation actions for weed control have been assessed by KCGM to be suitable for the management of weeds in relation to the Revised Proposal.

KCGM have robust Environmental Management System whereby the documents are reviewed every two years, or as triggered by a corrective action event.

The submission from DWER refers to the reference of the management actions that KCGM will “Maintain implementation of Fimiston Weed Management Procedure (KCGM, 2021), with spraying or other suitable action when weed species are identified on KCGM leases or in rehabilitation areas.” The current version of the Weed Management procedure NSR, 2023) refers to the management of weeds through the mechanisms of chemical and physical weed control.

4.2.3.1 Chemical weed control

Chemical control involves the use of herbicides to control weeds. Herbicides are an important and effective component of the weed control programme as, in some situations, herbicides offer the only practical, cost-effective and selective method of managing certain weeds. As herbicides reduce the need for cultivation or ground disturbance, they can prevent soil erosion and water loss.

Herbicides should be applied using a dedicated vehicle mounted spray tank or backpack weed sprayer. When applying herbicides, all Northern Star personnel and contractors must follow the Herbicide Spraying for Weed Management Safe Work Procedure NSR-EXP-COR-024-SWP. Weed sprayers and herbicides are to be used in line with the manufacturers’ instructions and safety requirements of the herbicide Safety Data Sheet.

4.2.3.2 Physical weed control

Physical control methods often depend on the type and size of the area of weeds to be managed, what the land is used for, physical characteristics and the value of the land. Physical control methods can include:

- Hand pulling
- Mowing
- Grazing
- Mulching
- Tilling
- Burning.

4.3 Terrestrial Fauna

Comments were received in relation to the information presented around the fauna habitats.

4.3.1 Regional habitat mapping

Table 38 from the ERD has been updated (Table 2) to reflect the percentages that are proposed to be cleared within the study area. The total portion of the study area which is proposed to be disturbed in 1,851 ha of the 8,036 ha (23% of the study area). The study area is comprised of approximately 3,954 ha of native vegetation, in which approximately 1,577 (40%) is proposed to be disturbed as part of the Revised Proposal.

Table 2 Regional Habitat Mapping (previously Table 38)

| Habitat | Extent Within the Study Area (ha) | Extent in the Proposal Area (ha) | Maximum % to be Cleared of study area |
|---|-----------------------------------|----------------------------------|---------------------------------------|
| Open woodland – Mid to tall open eucalypt woodland of gimlet and Salmon Gum with scattered <i>Brachychiton</i> over mixed shrub understorey of <i>Eremophila</i> , <i>Senna</i> , <i>Acacia exocarpos</i> and <i>Santalum</i> on red-brown clay | 3,683 | 1,523.5 | 41.37% |
| Shrubland – Tall open <i>Eremophila scoparia</i> shrubland over mid open <i>Acacia nyssophylla</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> shrubland over low open <i>Eremophila caperata</i> , <i>Rhagodia drummondii</i> and <i>Scaevola spinescens</i> shrubland. | 193.7 | 35.4 | 18.28% |
| Shrubland in Drainage Lines | 77.0 | 18.2 | 23.64% |
| Rehabilitation – Previously cleared areas that are now revegetated. | 3,158.4 | 106.6 | 3.38% |
| Cleared – Cleared for infrastructure or historic purposes | 923.4 | 167.4 | 18.13% |
| Total | 8,036 | 1,851 | 23% |
| Total of native vegetation | 3,953.7 | 1,577.1 | 40% |

4.3.1.1 Short Range Endemic Habitat

A late revision to the terminology for the vegetation types in the ERD has resulted in some calculations being missed. Using the areas shown in Table 2, it should be clarified that the habitat for Short Range Endemic (SREs) would potentially occupy up to 91% of the Proposal area. To further clarify, the shrubland along drainage line habitat will occupy <1% (0.98%) (previously reported to be 4.3%) of the area and comprises of low shrubland species along the Eastern Floodway. The open woodland, shrubland, and rehabilitation habitats, which was classified as Low potential for SREs, accounts for the remaining 90% of the potential SRE habitat with the Proposal area. These areas are shown in Figure 25 of the ERD.

4.3.1.2 Malleefowl Habitat

In response to the request for further information from the EPA, Holm & Associates were commissioned to undertake a ground-truthing survey over the relevant areas for the Fimiston Project (Figure 3, Appendix J). The results from the field survey in 2023 indicated that there was no evidence of recent Malleefowl activity and there was a single "long unused" nesting mound, as characterised by the National Malleefowl Recovery Team (2016).

Section 4.3 of Holm & Associates (2023) (Appendix J) discussed the context of the extrapolated areas for foraging and dispersal from the Phoenix vertebrate fauna report (2022). It is noted in Holm & Associates (2023) that "Three broad fauna habitats were mapped in the study area: 1) Open woodland, 2) Shrubland and 3) Rehabilitation. These habitat types, identified within a southern section of the DE covered in this report, were extrapolated across the unsurveyed northern section."

The area within the MDE has been most recently surveyed for Malleefowl in March 2023. Holm & Associates undertook a targeted survey within the MDE in the areas that were identified as 'Malleefowl extrapolated foraging and disposal

habitat' (referred to in Table 38 of the ERD). The possible extent for Malleefowl foraging and dispersal habitat was extrapolated to be 1,477 ha. Holm & Associates found no evidence of Malleefowl using the area for breeding. With the exception of a single disused nest that had not been used for more than five years, there was no evidence that Malleefowl use the area at all. From the areas that Holm & Associates surveyed, 451 ha (as reported in Table 54 of the ERD) was found to be marginally suitable. However, it should be noted that approximately 10 ha of this area is outside of the MDE. Figure 3 and Table 3 show the marginally suitable habitat for Malleefowl foraging and dispersal. The turquoise area is the marginal foraging and dispersal habitation identified by Holm & Associates.

Table 3 Malleefowl Habitat Mapping (previously Table 38)

| Habitat | Extent of the MDE (ha) | Extent within Proposal area | Extent within the MDE |
|---|------------------------|-----------------------------|-----------------------|
| Malleefowl marginally suitable for foraging and dispersal (Holm & Associates, 2023) | 441 | 24.22% | 5.66% |
| Malleefowl suitable for breeding (Holm & Associates, 2023) | 0 | 0% | 0% |
| Total potential for marginal Malleefowl foraging and dispersal habitat | 441 | 24.22% | 5.66% |
| | | | |
| Area native vegetation of Revised Proposal disturbance footprint | 1,580 ha | | |
| Area of MDE | 7,795 ha | | |

The assessment of the area by Holm & Associates (2023) further concluded that the area defined as suitable for foraging and dispersal (Table 54 of the ERD), is classified as “marginally” suitable at best with the habitat assessment score being 5.09 (out of 10) and other areas scoring less than 5 making these areas as “not suitable” for Malleefowl.

Section 6 of Holm & Associates (2023) details the survey methodology and Table 3 within the report provides the justification for the habitat calculations.

4.3.1.3 SSMP

The monitoring program should define the location and number of impact and control sites, including the shrubs being monitored, and habitat health/health rating methodology. Additionally, the methodology for measuring dust and potential impacts to Priority flora and fauna habitat remains unclear.

The SSMP indicates that the monitoring of *Eremophila praecox* will reduce in frequency from annual monitoring to triennial monitoring, after three years or “following the development of a strong dataset”. This is not considered to be an appropriate timeframe or appropriate justification for reducing monitoring frequency. It is recommended that monitoring is completed annually over the life of the mine. Any changes to the monitoring frequency should be approved by DWER, in consultation with DBCA.

The timing/frequency of monitoring outlined for the *J. aridus* outcomes-based criteria states that monitoring will occur “Annually, in spring for monitoring of impact and control populations – providing suitable spring climate”. This should be amended to ensure clarity that monitoring will occur annually regardless of climate or weather conditions.

In addition, the monitoring outlined for the *J. aridus* outcomes-based criteria includes surveys for additional regional populations and the timing/frequency of monitoring refers to “Further surveys for additional regional populations may be conducted until it has been sufficiently demonstrated that the species is much more common and widespread than currently known”. These do not align with the trigger and threshold criteria and, therefore, should be removed from the table and addressed elsewhere in the SSMP. Further information on the objective and approach for the additional regional surveys should be outlined in the SSMP.

Threshold criteria are indicators selected to represent the limit of acceptable change beyond which an environmental objective/outcome may not have been met (EPA, 2024). Trigger and threshold criteria should be evidence-based, sufficiently precautionary to avoid adverse impacts, and adaptable with ongoing data collection, or based on comparisons to reference sites and/or baseline data.

The trigger and threshold criteria outlined in the SSMP are not considered to be appropriate. DBCA has provided the following example of trigger and threshold criteria, noting that this is an example only and would require further refinement and appropriate justification for the percentage chosen:

Example:

Trigger – A statistically significant difference in health ratings of *J. aridus* confirmed/potential breeding shrubs at Fimiston population in comparison to control populations.

Threshold – A % difference in health ratings of *J. aridus* confirmed/potential breeding shrubs at Fimiston population in comparison to control populations.

It is also unclear what baseline data will be collected and how it will be used to inform detection of project attributable changes to the *J. aridus* population and breeding shrubs. In addition, it appears that references to baseline data are unnecessarily incorporated into criteria where comparison is made to control populations.

It is acknowledged that the SSMP identifies response actions to undertake a review of information, increase the frequency of monitoring and provide additional staff training, should trigger and/or threshold criteria be exceeded. However, it is considered important that the proposed response actions, include measures beyond review, investigation and further monitoring, to enable the early intervention and implementation of management and/or contingency measures. Actions should include engineering and/or operational solutions, to bring changes in the *J. aridus* population and habitat back below trigger and threshold criteria.

Additionally, DBCA acknowledges that stakeholder engagement should occur if detrimental impacts are identified during monitoring, however it is expected that the SSMP provides detail on actions that mediate impacts in the first instance and independent of stakeholder engagement.

It is DBCA's expectation that any additional breeding shrubs that are identified during monitoring will be considered to be "known" breeding shrubs and, therefore, will be managed in accordance with the SSMP (i.e. with a 50-meter buffer zone and inclusion in the monitoring program). However, a statement in the SSMP outlining actions to be taken if any additional breeding shrubs are identified would provide clarity and certainty.

Response

Monitoring of Eremophila praecox will be undertaken annually. The monitoring details in the SSMP have been updated as directed.

The annual surveys will continue to contribute to the baseline data on this species and while additional data analysis is working towards an understanding of regional populations analysis is continuing and will incorporate new data as it is collected.

The recent mapping (Phoenix, 2024) has recorded 729 individual plants in a 100km radius of the Fimiston Proposal. There are 75 populations recorded of which 13 are within the MDE. Of the populations within the MDE individual plants will be removed but no population will be removed in its entirety.

A monitoring plan for E. praecox is included in Appendix B of the SSMP. This monitoring plan sets out the monitoring locations for the remnant floodway population as well as two reference sites (south along Borefield Road).

A separate monitoring plan is provided for J. aridus in Appendix C of the SSMP. This sets out reference sites and vegetation health ratings tables.

Monitoring for both species will be annual as outlined in the SSMP (Section 2.10 and Section 3). References to triennial monitoring have been removed from Section 3.

Monitoring of J. aridus is undertaken during suitable climactic conditions to maximise likelihood of detection.

Undertaking surveys in unsuitable climactic conditions when the season has been too hot or dry will result in limited useful data. As noted in the SSMP monitoring will be undertaken when advised by the subject matter experts (Section 2.10 and Table 7 of the SSMP).

The statement "Further surveys for additional regional populations may be conducted until it has been sufficiently demonstrated that the species is much more common and widespread than currently known" has been removed from the SSMP.

Triggers and thresholds have been included in the SSMP for the health of the potential J. aridus breeding shrubs (Section 3).

Baseline data has been collected every breeding season since detection of the J. aridus species and the surveys have ranged across the region to detect as many populations as possible. We have used 100% of the butterfly specialists we could find to undertake these surveys during the limited breeding season. KCGM will be removing two

shrubs from one population of the 13 known populations. The genetic material from this shrub will be relocated. The remainder of the shrubs at this location will provide remnant habitat.

Response actions have been refined to include engineering controls, where relevant, continual learnings from surveys and consultation with relevant stakeholders (Table 12 and 14 of the SSMP).

Unnecessary references to baseline data have been removed to avoid confusion. They had been included to demonstrate the evolving understanding of the species and its habitat.

Reference to inclusion of new shrubs into the buffer zones and long term monitoring program has been included in Table 7 of the SSMP.

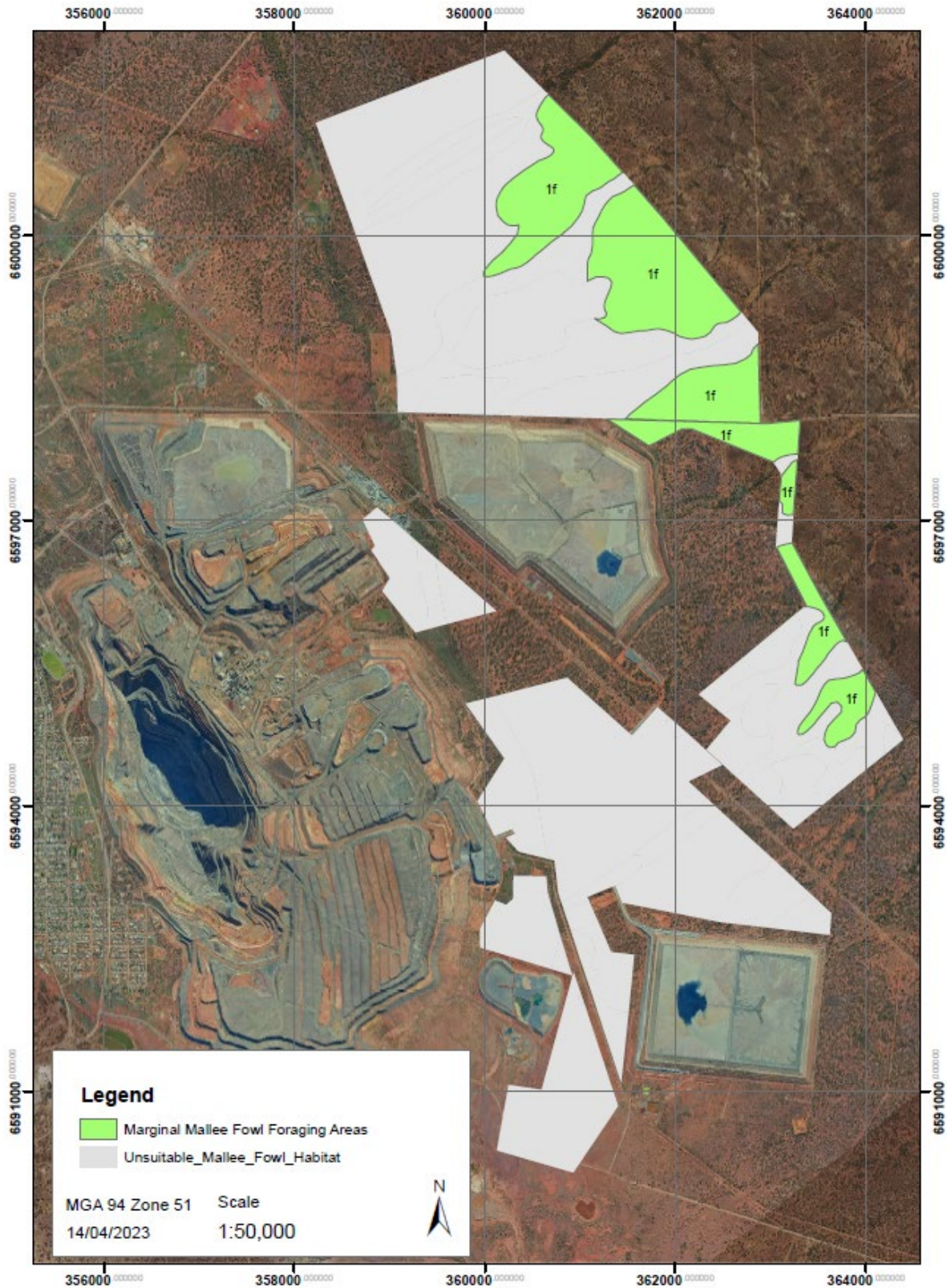


Figure 3 Marginal foraging and dispersal habitat for Malleefowl

4.4 Social Surroundings

KCGM and government agencies recognise the unique situation of the Fimiston Operations being located close to the City of Kalgoorlie-Boulder, where mining has been a part of the landscape for over 125 years. Due to the proximity of the city, it is imperative that KCGM manages environmental aspects to minimise any potential impacts to the community. KCGM is committed to operating in an environmentally and socially responsible manner, which contributes to the long term social and economic value of the Kalgoorlie-Boulder region and protect the environment in which it operates.

Two key environmental regulatory approvals are in place for the Fimiston Operations:

- Ministerial Statement No. 782 - Fimiston Gold Mine Operations Extension (Stage 3) and Mine Closure Planning; and
- *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval*.

These two approvals are supported by a number of key environmental management plans, including the:

- Noise and Vibration Monitoring and Management Plan (NVMMP);
- Fimiston Air Quality Management Plan (FAQMP); and
- Mine Closure Plan (MCP).

In support of the regulatory approval process for the proposed FS Project, external consultants were engaged to review future environmental cumulative impacts. With respect to air quality, noise and vibration, with summaries of the key environmental findings as follows:

- The “Screening Health Risk Assessment (HRA)” concluded that the calculation of quantitative risk indicators based historic metals analyses and ambient PM₁₀ monitoring and modelled data and the adoption of realistic, but conservative assumptions in the application of bioavailability factors determined from the analysis of regional soil samples, indicate no unacceptable acute or chronic non-carcinogenic or carcinogenic risks. These potential short-term and long-term health effects are also expected to remain unchanged with no unacceptable risks when the FS Project is operational in the future.
- An additional toxicological review of the PM₁₀ fugitive dust to quantify the potential for impact on residential receptors was completed using an independent toxicologist as nominated by the EPA services. The review concluded that annual average concentrations of particulates at the boundary monitors have always been below relevant guidelines for all monitors for current operations. It noted that Health Quotients (HQs) less than or equal to 1 (equivalent to 100% of the air quality guideline value) can be considered as having negligible risk. In relation to short term 24-hour average PM₁₀ concentrations, HQs less than 1.2 (60 ug/m³) can be considered to have acceptable risk. HQ greater than 1.5 (75 ug/m³) would require further investigations to assess potential for adverse effects and HQs of 2 (100 ug/m³) or more could be considered to constitute a moderate risk. The review noted that there were some moderately elevated 24-hour PM₁₀ levels at boundary monitors but all HQs were at or less than a HQ of 1.5 and 3 out of 7 and 5 out of 7 monitors not recording any exceedances of 1 HQ attributable to KCGM during 2021/22 and 2020/21 respectively. In regards to the future impacts, the review noted the FAQMP is suitable to monitor and respond to potential dust excursions from the Fimiston open pit and to minimise any short-term health effects within the residential community.
- the “Fimiston Acoustic Impact Assessment” concluded that the noise levels for the FS Project indicates there would be a potential change in noise levels at the compliance noise monitoring locations, primarily due to the extension of the Fimiston Open Pit with individual haul truck locations dominating the noise levels. However, provided noise levels at operational areas are maintained for all hours, acoustically, the night-time variation of the FS Project operations would be considered insignificant in either audibility or in assessable noise levels at the north and western receivers. KCGM has not proposed an increase in the approved noise levels and will operate the FS Project in accordance with current approved levels.
- The “Prediction of Blast – Induced Ground Vibration and Overpressure” assessment demonstrated that analyses conducted for blasting in the FS Project area has shown that blasting will very probably achieve compliance with current ground vibration limits and that KCGM’s well established empirical techniques derived, refined and proven over two decades of blasting operations, can mitigate the risks of air overpressure exceedance.

4.4.1 Noise and vibration

As mentioned in the tabulated Section 3.7.2, the location of the Fimiston Operations presents challenges to adhering to the noise standards as prescribed under the Environment Protection (Noise) Regulations 1997 (Noise Regulations). As a result, KCGM has applied for, and been given approval by the Minister under Regulation 7 and 17 of the Noise Regulations to exceed or vary operational noise from the prescribed noise levels. KCGM has been operating for more than 15 years since the grant of the first noise approval in 2009: *Environmental Protection Response to Public Submissions Fimiston South Project Rev2.3 05/12/2024*

(*Fimiston Gold Mine Noise Emissions*) Approval 2009. The current Regulation 17 approval that KCGM operate under is the *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016*. This approval allows KCGM to vary the noise emissions from the operations from those noise emission levels specified in Noise Regulations, including variations to the approved blast overpressure levels.

KCGM continues to operate in accordance with the *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016* and the NVMMMP. The five monitoring sites are:

- Boulder Street Primary School (BPS)
- Barton Street Williamstown (BSW)
- Kalgoorlie Technical School (KTS)
- Outram Street Boulder (OSB)
- York Street Boulder (YSB)

At each of the monitoring sites, the sound levels for L_{A10} and $L_{A\text{MAX}}$ are recorded over a minimum 15-minute period. In October 2011, KCGM installed a “real-time noise monitor” at the Metal Exploration Premises (MEP) monitoring site to satisfy a recommendation made by the Appeals Committee in relation to an appeal against the *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2009* gazetted on 14 July 2009. The noise data, recorded as $L_{A\text{eq}}$ averaged over five minutes, is displayed in real-time on the Superpit website for the last 48 hours with updates every 15 minutes.

It is noted above in Section 3.7.2, that KCGM have not proposed an increase in the approved noise levels and will operate the FS Project in accordance with current approved levels. KCGM has applied for a further extension to the approval of the *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016* to be assessed in parallel with the FS Project.

Assessment of the noise levels for the Fimiston South Project (refer to ERD Appendix O) indicates there would be a potential change in noise levels from the Fimiston Operations at the compliance sites, as well as altering the position of the noise bund to a more westerly position. This is primarily due to the extension of the Fimiston Open Pit with individual haul truck locations dominating the noise levels.

However, provided noise levels are within approved levels at operational areas for all hours, acoustically, the night-time variation of the FS Project operations would be considered insignificant in either audibility or in assessable noise levels at the north and western receivers. As a result, Northern Star's KCGM Fimiston Operations is seeking to continue approval of the current noise approval, the 2016 Noise Regulation Approval, to reflect the proposed future operations, including alteration to the licensed noise monitoring location Outram (OSB) and an air blast monitor (ECHO), necessitated by the expanded open pit footprint. KCGM is seeking a parallel assessment process of these the approvals through Part IV (s38) of the EP Act and the Noise Regulations (r17). There is no requirement for alteration of the approved noise levels or weather influencing factors contained in the current 2016 Noise Regulation Approval.

It is KCGM's position that the recording and reporting of compliance noise levels (L_{A10} and $L_{A\text{MAX}}$) on a quarterly basis, the recording of noise levels ($L_{A\text{eq}}$) at the Metal Exploration Premises (MEP) monitoring site and publishing this to the Superpit website in real-time, and the recording and reporting to DWER of continuous noise levels (L_{A10} , L_{A50} and L_{A90}) at two monitoring sites (YSB and MEP) is a comprehensive suite of monitoring and reporting processes that supports KCGM to effectively monitor and manage noise from its operations.

KCGM notes that generally the L_{A10} , which is noise exceeded for 10% of the measurement time, is the most stringent in terms of compliance and that in most mining situations, compliance with the L_{A10} noise level ensures compliance with the L_{A01} .

The results of the monitoring are shared with the public on our website www.Superpit.com.au.

4.4.1.1 Blast management

The Fimiston Open Pit presents some unique challenges for blast management including numerous faults which intersect the pit, and a vast network of underground voids remnant from historic mining operations. Through extensive research and development projects coupled with learnings from both favourable and unfavourable blast events, KCGM's management of blasting is continually improving.

KCGM is required to comply with vibration limits, measured or calculated in accordance with section J4.2 of Australian Standard AS2187.2(2006), for the protection of human comfort at any houses and low-rise buildings, theatres, schools and other similar buildings occupied by people and not owned by KCGM. Essentially, the vibration limits apply to sensitive premises. It should be noted that cracks in buildings may also be attributable to causes other than ground vibration, including ground or foundation movements (settlement and swell) associated with natural Response to Public Submissions Fimiston South Project Rev2.3 05/12/2024

progressive deterioration of buildings over time and/or cyclical expansion/contraction of reactive clay soils during periods of prolonged dry or wet weather.

The Fimiston South Project is adjacent to the South Boulder Light Industrial area which is predominantly made up of commercial and light industrial buildings/premises/land uses, which are generally not considered to be sensitive receptors. Appendix J of the Australian Standard AS2187.2(2006) specifies that the limit applicable to such premises/land use is much higher at 25 mm/s for all blasts.

Permanent ground vibration and air-blast monitoring locations were established in 1993 under the measures included within the NVMMP. Blast induced ground vibration and air-blast overpressure are monitored by utilising Advanced Texcel remote blast monitor (ETM) equipment at six monitoring locations (ALPHA, BRAVO, CHARLIE, DELTA, ECHO and FOXTROT). Blasting only occurs during daytime hours (0700 - 1800) as per the regulatory requirements and where possible KCGM initiates blasts at 1300 or 1700 hrs for consistency. Trigger levels for recording blast parameters are set well below the applicable reportable limits. Fimiston Open Pit approved airblast levels are shown in Table 4.

Table 4 Approved Air Blast Levels

| Premises – Time of Day | Approved Air-blast Level (dB) | |
|--|-------------------------------|---|
| | Not to be exceeded anytime | Not to be exceeded for 9 in any 10 consecutive blasts |
| Sensitive Premises - 0700 to 1800 hours any day¹ | 120 | 115 |
| Sensitive Premises owned by KCGM- 0700 to 1800 hours Monday to Saturday (excluding public holidays)² | 125 | 120 |
| Sensitive Premises owned by KCGM- 0700 to 1800 hours Sunday and public holidays² | 120 | 115 |
| Other than Sensitive Premises -0700 to 1800 hours any day³ | 125 | 120 |

¹When received at a sensitive site – Environmental Protection (Noise) Regulations 1997.

²When received at a sensitive site on a residential property owned by KCGM – *Environmental Protection (Fimiston Gold Mine Noise Emissions) Approval 2016*.

³When received at any other premises – Environmental Protection (Noise) Regulations 1997

Analysis conducted for blasting in the Fimiston South Project area has shown that blasting will very probably achieve compliance with ground vibration limits as stipulated in Condition 9-5 of MS 782 and that KCGM's well established empirical techniques derived, refined and proven over two decades of blasting operations, can mitigate the risks of air overpressure exceedance (refer to Appendix M of the ERD).

These approved levels (shown in Table 4) are set well below the 130 dB (refer submission No. 40), even in the case of the maximum allowable approved level of 125 dB at 'Sensitive Premises owned by KCGM' and 'Other than Sensitive Premises'.

KCGM's performance with respect to blast vibration and overpressure is detailed in the Annual Fimiston Compliance Assessment Report and the MS 782 Five-Year Performance Reviews available from our website www.Superpit.com.au.

4.4.2 Dust

4.4.2.1 Health Risk

In support of the regulatory approval process for the proposed Fimiston South (FS) Project, an external consultant was engaged by KCGM to undertake a screening health risk assessment (HRA), (Appendix I of the ERD). The HRA assessed the potential health risks from the current operations to the future when the Fimiston South project would be operational. Using monitored PM₁₀ data from boundary monitoring network and metals composition data, the HRA concluded that no unacceptable acute or chronic non-carcinogenic or carcinogenic health risks currently exists from KCGM operations. The potential short-term and long-term health effects were also expected to remain unchanged in the future, with no unacceptable risks expected when the FS project is operational in the future.

The Kalgoorlie region is generally characterised by elevated concentrations of particulates. Exceedances of a 24-hour average concentration of $50 \mu\text{g}/\text{m}^3$ attributable to regional events such as bushfires and windblown dust or other sources such as wood heater smoke are regularly recorded in the region. For example, between December 2022 and November 2023, there were thirteen days where concentrations at the Hewitt Street (HEW) boundary monitor exceeded a 24-hour average concentration of $50 \mu\text{g}/\text{m}^3$. Of these days, ten of them were investigated and determined to be associated with events unrelated to KCGM operations. It is noted that the screening level HRA incorporated both impacts from KCGM operations and background sources.

An additional review PM10 fugitive dust to quantify the potential for impacts to health on residential receptors was completed using. The review concluded that annual average concentrations of particulates at the community and boundary monitors have always been below relevant guidelines for all monitors for current operations presenting negligible risk to health in the community. Short term 24 hour average concentrations monitored at the community monitors where KCGM could have been considered a significant contributor have always been below the relevant guidelines. Short term 24 hour average concentrations at the boundary monitors where KCGM could potentially have been considered a potentially significant contributor were below $75 \mu\text{g}/\text{m}^3$ at the boundary monitors. The HRA noted that the FAQMP in conjunction with a boundary monitor guideline of $75 \mu\text{g}/\text{m}^3$ (equivalent a HQ of 1.5) is suitable to monitor and respond to potential dust excursions from the Fimiston open pit and to minimise any short-term health effects within the residential community.

4.4.2.2 Dust Management

KCGM has historically demonstrated that impacts to air quality, social surrounds and/or human health from dust generated from its operations are able to be successfully mitigated through the implementation of its Dust Monitoring and Management Programme (DMMP). The DMMP contains both proactive management actions that directly relate to activities that are known to cause or promote the mobilisation of particulates on site from general day-to-day operations and reactive management actions based on real time monitoring at the boundary dust monitoring network.

The DMMP will be further strengthened through the move from a triennial to annual review of the action and alert levels at each of the monitors on the boundary of the facility. The annual review will assess and report on all periods where concentrations above the 24 hour average guideline of $50 \mu\text{g}/\text{m}^3$ were detected at any boundary monitors. Exceedances of the 24 hour average $50 \mu\text{g}/\text{m}^3$ guideline at the community monitors or $75 \mu\text{g}/\text{m}^3$ at the boundary monitors where KCGM could be considered a significant contributor will be immediately reported to DWER and investigated. Exceedances of the annual average of $25 \mu\text{g}/\text{m}^3$ at all community and boundary monitors will be also be reported to DWER. These action and alert levels can be adjusted to ensure that sufficient resources are implemented in a timely manner to manage particulate generation from operations both currently and in the future.

4.5 Greenhouse Gas Management Plan

The following additional information has also been added to the updated Greenhouse Gas Management Plan (GHGMP).

Section 10 of the GHGMP has been updated with more information on the calculation methodology and includes details for Scope 1 and Scope 2 emissions methodologies. The GHGMP has also been simplified to focus on the most likely scenario, which includes the mining, mill upgrades and renewable energy project. Graphs and tables have been updated to reflect this scenario and to comply with the GHGMP template.

Emissions intensity of the project is similar to other large gold mining projects in WA. The average emissions intensity across the gold miners was $0.71 \text{ t CO}_2\text{-e}/\text{oz}$ with four of the eight mining operations listed coming under this value. Kalgoorlie Operations ex. KCGM was the best performing site with an emissions intensity of $0.59 \text{ t CO}_2\text{-e}/\text{oz}$, however, it is noted that the site is a smaller operation, with less gold produced and purchased electricity from the grid. KCGM operations at $0.9 \text{ t CO}_2\text{-e} / \text{oz}$ is slightly higher side than the average but well below Telfer at $1.28 \text{ t CO}_2\text{-e} / \text{oz}$.

Table 5 2023 Benchmarking results for Western Australian Gold Mines

| Company | Site | Operation Type | Commenced Operations | 2023 GHG Emissions (Kt CO ₂ -e) | 2023 Gold Production (Koz) | Emissions Intensity (t CO ₂ -e/oz) | Electricity Generation (approx%) |
|------------------------------|--------------------------------|----------------|----------------------|--|----------------------------|---|---|
| Anglo Gold Ashanti Australia | Tropicana ¹ | OP/UG | 2012 | 316 | 443 | 0.71 | Natural Gas – 99% Diesel – 1% |
| Gold Fields | Gruyere ² | OP | 2019 | 207 | 321 | 0.64 | Natural Gas – 91% Solar – 9% Diesel – 0.1% |
| Newcrest | Telfer ³ | OP/UG | 1977 / 2004 | 447 | 349 | 1.28 | Natural Gas – 99.7% Diesel – 0.3% |
| Newmont ⁴ | Boddington | OP | 1987 / 2010 | 511 | 575 | 0.89 | Purchased Grid Electricity (non-renewable) – 95% Diesel – 5% |
| Northern Star ⁵ | Yandal | OP/UG | 2016 | 336 | 480 | 0.70 | Natural Gas – 95% Diesel – 5% |
| | KCGM | OP/LHOS | 1989 | 390 | 432 | 0.9 | Purchased Grid Electricity (non-renewable) – 95% Diesel – 5% |
| | Kalgoorlie Operations ex. KCGM | OP/UG | 1993 | 95 | 161 | 0.59 | Purchased Grid Electricity (non-renewable) – 95% Diesel – 5% |

¹ Operational Profile 2023, Tropicana – Australia, AngloGold Ashanti.

² Climate Change Report 2023, Gold Fields Limited

³ 2023 Sustainability Report, Newcrest Mining Limited.

⁴ 2023 Climate Performance Update – Performance Data, Newmont Corporation.

⁵ Sustainability Report FY2023 – Climate Change, Northern Star Resources.

| Company | Site | Operation Type | Commenced Operations | 2023 GHG Emissions (Kt CO ₂ -e) | 2023 Gold Production (Koz) | Emissions Intensity (t CO ₂ -e/oz) | Electricity Generation (approx%) |
|---------|-------------|----------------|----------------------|--|----------------------------|---|--|
| | Carosue Dam | OP/UG | 2010 | 150 | 243 | 0.62 | Natural Gas – 98% Diesel – 1% Solar – 1% |
| | | Average | | | | 0.81 | |

A review of other gold mine operators' GHG reduction initiatives through their company commitments provides a useful comparison to determine if KCGM's commitments are similar. Table 6 provides a comparison of KCGM's GHG reduction targets and projects compared to similar sites in WA.

Table 6 GHG Reduction Targets and Renewables Comparison

| Company | Site | 2030 Reduction Target | 2050 Reduction Target | Renewables Projects |
|------------------------------|--------------------------------|--|-----------------------|---|
| Anglo Gold Ashanti Australia | Tropicana | 30% reduction | Net Zero | Expected commissioning 2025 - 24 MW wind farm, 24 MW solar farm and 14 MW battery storage system. |
| Gold Fields | Gruyere | 50% emissions reductions in Scope 1 and 2 emissions by 2030 from a 2016 baseline, 10% reduction in Scope 3 emissions by 2030 from a 2022 baseline. | Net Zero | Commenced 2022 – 13 MW solar, 4.4 MW battery storage. Prefeasibility study for 66MW wind, 36MW (total) solar and 35 MW (total) battery storage. |
| Newcrest | Telfer | 30% reduction | Net zero | No renewables plan but propose to expand the capacity of natural gas power generation for expansion project. |
| Newmont | Boddington | 30% reduction | Net zero | Investigating wind and solar projects. |
| Northern Star | Yandal | 35% reduction | Net zero | No committed renewables plan in near future. |
| | KCGM | 35% reduction | Net zero | Commitments to 100MW Solar farm and 200MW Wind farm to commence in 2027. Investigating efficiency measures and fleet electrification to mitigate Scope 1 emissions. |
| | Kalgoorlie Operations ex. KCGM | 35% reduction | Net zero | No committed renewables plans in near future. |
| | Carosue Dam | 35% reduction | Net zero | Completed 2022 – 6.3MW solar. |

This demonstrates that KCGM's targets of a 35% reduction by 2030 and net zero by 2050 are the same or better than similar gold mines within WA.

Gruyere and Carosue Dam were the only sites that have operational renewables projects, however, when the Kalgoorlie Renewables project is commissioned, it will have the highest renewable power generation and Scope 2 emissions can be offset by approximately 260,000 t CO₂-e. To date, other companies such as Newcrest and Newmont do not have committed plans for renewable energy projects at the sites listed above.

Based on the information above, while GHG reduction targets are similar, the GHG minimisation steps undertaken by KCGM are significantly better than other companies with similar aged mines.

Table 7 Scope 3 Inclusions and Exclusions

| Scope 3 Category | Inclusions | Exclusions |
|--|--|---|
| Purchased goods and services | Included mining equipment, mill components. Carbon-intensive items (e.g. grinding media) and water have also been included | |
| Capital goods | Included as above | |
| Fuel- and energy-related activities (not included in Scope 1 or Scope 2) | Included mill and maintenance consumables | |
| Upstream transportation and distribution | Included transport of equipment to site | |
| Waste generated in operations | Included waste generated from the maintenance activities, offices and mill areas | |
| Business travel | | Not included as corporate travel is calculated separately and is apportioned to the corporate Perth office emissions. |
| Employee commuting | | Not included as the majority of KCGM workers live in Kalgoorlie and only travel a few minutes to work. |
| Upstream leased assets | | Not included as equipment is purchased not leased |
| Downstream transportation and distribution | | Not included as gold is produced in small quantities (20-24 tonnes per year) |
| Processing of sold products | | Not included as processing of ore is included in stage 1 and 2 emissions |
| Use of sold products | | Not Relevant as gold has many uses that are difficult to quantify |

| Scope 3 Category | Inclusions | Exclusions |
|--|------------|---|
| End-of-life treatment of sold products | | Not Relevant as gold does not degrade or rust |
| Downstream leased assets | | Not Relevant |
| Franchises | | Not Relevant |
| Investments | | Not Relevant |

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6 GLOSSARY

| | |
|--------------------|---|
| AEP | Annual Exceedance Probability |
| ARI | Average Recurrence Interval |
| CO ₂ -e | Carbon tonnes equivalent |
| DBCA | Department of Biodiversity, Conservation and Attractions |
| DEMIRS | Department of Energy, Mines, Industry Regulation and Safety |
| DWER | Department of Water and Environmental Regulation |
| EP Act | <i>Environmental Protection Act 1986</i> |
| EPA | Environmental Protection Authority |
| ERD | Environmental Review Document |
| KCGM | Kalgoorlie Consolidated Gold Mine |
| MCP | Mine Closure Plan |
| Mining Act | <i>Mining Act 1978</i> |
| MS 782 | Ministerial Statement 782 |
| SGMP | Seepage and Groundwater Management Plan |
| SRE | Short Range Endemic |
| SSMP | Significant Species Management Plan |
| TSF | Tailings Storage Facility |
| WRD | Waste Rock Dumps |
| WRL | Waste Rock Landforms |

7 APPENDIX A: STAKEHOLDER CONSULTATION

8 APPENDIX B: INDEPENDENT REVIEW OF SSMP – MATT WILLIAMS - CONFIDENTIAL

**9 APPENDIX C: INDEPENDENT REVIEW OF SSMP - MARK
BRUNETT - CONFIDENTIAL**

**10 APPENDIX D: EASTWOOD TRANSLOCATION PROTOCOL -
CONFIDENTIAL**

**11 APPENDIX F: SIGNIFICANT SPECIES MANAGEMENT
PLANS – PUBLIC (UPDATED)**

12 APPENDIX G: FIMISTON AIR QUALITY MANAGEMENT PLAN (UPDATED)

**13 APPENDIX H: GREENHOUSE GAS MANAGEMENT PLAN
(UPDATED)**

**14 APPENDIX I: GHG INDEPENDENT REVIEW
(CONFIDENTIAL)**

15 APPENDIX J: UNEXPECTED FINDS PROCEDURE

