

## 4.8 Vibration

The largest equipment to be used on the project are haul trucks and any vibration from haulage activity will be negligible. Although large in appearance and carrying capacity, wheel loadings for the haul trucks are similar to those for road trains currently using public roads, such as the Goldfields Highway through the South Boulder area. This is supported by the fact that in the past two years KCGM haul trucks have received permits from Main Roads WA enabling them to be driven from the KCGM site along the Goldfields Highway and down Hannan Street (the centre of Kalgoorlie) for an annual street parade.

The material flow from a haul truck as the tray is lifted is slow and vibration from this activity will also be negligible. The planned construction activity will occur at distances greater than 100-metres from occupied properties in the South Boulder light industrial area and over unconsolidated materials (natural surface and waste rock). The distance and nature of the materials would serve to rapidly reduce any vibrations (if they were to occur).

## 4.9 Rehabilitation

This project is focussed on environmental improvements. The intended outcomes include:

- The closing of a noise corridor from the southern end of the open pit operation by the extension of noise bunding.
- A visual improvement of the landscape and an opportunity to remediate an area that has long been degraded.

The successful rehabilitation of the site will result in a wider but more natural looking landform. The flat areas at the toe of this landform will be revegetated to a Eucalypt/Chenopod open woodland, typical of the Kalgoorlie region. The hilly landform produced will be akin to a Greenstone hill environment. These are common landforms in the region. To achieve this the lower slopes of the hill will have a final face angle of 14° and the upper parts of the project landform will have a final angle of about 20°.

Trees will be hand planted onto the site and target areas will be those where water ponding is likely. For example; the bases of slopes, flat areas, areas of change in slope angle, contour banks and crest and toe drains. Depending on seedling availability the species used will be endemic to the region and may include: *Eucalyptus campaspe*, *E. celastroides*, *E. clelandii*, *E. lesouffii*, *E. salmonophloia*, *E. stricklandii*, *E. salubris*, *E. transcontinentalis*, *E. woodwardii*, *Acacia acuminata*, *A. jennerae*, *A. hemeteles*, *A. murrayana*, *A. tetragonophylla*, *Allocasuarina acutivalvis* and *A. campestris*.

To minimise erosion on outer faces of the noise bunds a number of water management strategies will be implemented.

- The lower lift of the noise bund will be battered to a slope of about 14°. This slope-angle will minimise erosion effects particularly after a vegetative cover has been established.
- The upper lift will be battered to 20° to mimic the topography of greenstone hills that are found in the region.
- A series of contour drains will be installed on both lifts. These will be surveyed in to minimise operator error in the construction phase. These structures will not only provide effective water management but will also harvest and hold water as run-on areas, which will substantially benefit vegetative growth. To further manage water in these structures a series of bunds will be installed perpendicular to the contour to compartmentalise the structure.
- A berm will be installed between all changes of slope and a significant crest drain and toe drain will be installed to minimise sheet water flows.

- All ripping on site will be undertaken to a nominal depth of 1m. Winged ripping tyres will further enhance soil mounding, to control runoff and maintain moisture along the contour.

#### **4.10 Post-Mining Landuse**

The project will be a highly visible area to display mine-site rehabilitation and is an opportunity to reclaim an area subjected to over 50 years of intensive mining activity. The vegetation surrounding the project area has been rehabilitated by KCGM to semi-mature (eight-year-old) Eucalypt Open Woodland. The slopes of the project area will support Eucalypt/Acacia open woodland and Acacia shrubland. The lower canopies will include a variety of annual and perennial shrubs and grass species. Community groups and tour operators may be able to use the area as an elevated viewpoint for mining and rehabilitation in the area.

### **5 SOCIAL IMPACTS**

#### **5.1 Heritage**

No materials, artefacts, or constructions of European historical significance occur on the site. The site has been subjected to intensive mining activity for well over 50 years.

#### **5.2 Aboriginal Sites**

Aboriginal site surveys were conducted over this area in 1989 and 2000. No sites were recorded near the project area. KCGM is aware of its obligations under the Aboriginal Heritage Act 1972, and would abide by those requirements.

#### **5.3 Community Consultation**

A community consultation program, directed towards the neighbours to the project area, is currently in progress. The wider Kalgoorlie-Boulder community will also be notified.

To date the following activities have been undertaken:

- In July and September 2003, the project plan was discussed at the KCGM Community Reference Group meeting.
- In September 2003, the Department of Environment notified the Kalgoorlie-Boulder Community and Industry Reference Group about the project.
- In October 2003, an invitation to Mine Open Day and Community Update: Southern Landform Development Concept (Appendix 2) was delivered to 100 neighbours nearest to the project (Figure 8).
- In October 2003, KCGM participated in the Chamber of Minerals and Energy State Mine Open Day. Approximately 3000 people attended the open day. An information display was available for interested community members and approximately 150 copies of the Community Update: Southern Landform Development Concept were distributed. Thanks to our near neighbours who attended our Mine Open Day and provided feedback regarding our project plans, detailed below (Figure 9).

**Comments**

**Relevant Section of the Report**

Do you realise that with the new proposed waste dump east of my house that the sunrise will be a full 10 minutes later?	We understand this comment was made in jest.
OK if dust and noise are kept within reasonable limits	Section 4.6 Dust and Section 4.7 Noise
There is a lot of dust and the blasting is cracking my house.	Section 4.6 Dust, feedback regarding the house cracks are being followed up separately
Dusty but otherwise good.	Section 4.6 Dust
Request further information regarding the Pad 18 access road.	Section 3.6 Transportation Corridors

- In November 2003, the Kalgoorlie Miner published an article on this project – Noise Bund: KCGM to seek public input (Appendix 2). The Kalgoorlie Miner has a local distribution of approximately 10 000 copies. KCGM did not receive any feedback and no “Letters to the Editor” were published in response to this article.
- In December 2003, the draft project plan was made available to key stakeholders for a 6 week review period. Stakeholders were notified via a letter drop and advertisements (on 1 December and 29 December 2003) in the Kalgoorlie Miner (Appendix 2). Eleven (11) hard copies of the draft project plan were delivered to key stakeholders identified at the Mine Open Day or through other community consultation efforts. The KCGM Community Reference Group (CRG) members were provided with a copy via e-mail. Hard copies were provided to the DoIR (1) and DoE (1) and made available for public review at the Kalgoorlie DoE Office (2) and William Grunt Memorial Library (2). Following a request via fax, 14 hard copies and 1 CD version of the draft project plan were delivered to the Williamstown Residents Committee. Two additional copies (CD and e-mail) were provided following public requests in response to the Kalgoorlie Miner advertisements. The draft project plan was also made available on the KCGM web site and 146 downloads of this document were recorded. KCGM employees were also invited to provide feedback.
- In December 2003 and January 2004 articles featured in the Kalgoorlie Miner, which referred to this project and are included in Appendix 2.
- In January 2004, the 6 week public review period for the draft project plan closed. KCGM received feedback from two stakeholders. Copies of the feedback were provided to the KCGM CRG for comment.
- In February 2004 KCGM finalised review of the feedback and prepared a response to stakeholders. Stakeholders whom provided feedback were visited by representatives from KCGM to advise the outcome of their submissions and what other avenues they have to pursue their interests (if required). The KCGM Community Reference Group were also notified of our response. Copies of the feedback and KCGM response are included in Appendix 2.
- In February 2004, KCGM submitted the final project plan (this document) to the EPA and relevant key stakeholders.

This consultation process has begun prior to project commencement and will continue throughout the life of the project to key stakeholders.

The KCGM Inquiry Line is available 24 hrs, 7 days, and feedback regarding this project will be acted upon should the need arise during the project.

## 5.4 Social Environment

The project will make a significant contribution to the community of Kalgoorlie-Boulder. It will:

- Extend the existing noise bund, which has been in place for in excess of 10 years and has proven to be an effective noise barrier.
- Provide a considerable improvement in the visual amenity of the area. The site has been significantly disturbed from many years of mining activity and this project will provide the opportunity to improve the view from the neighbouring community.
- Further extend the green belt between KCGM and Kalgoorlie-Boulder.



**Figure 8  
Project Area and Neighbours Contacted**

Noise bund footprint (Solid Blue); 500m from the toe of the noise bund (Blue Line); neighbours contacted (Green Squares)



**Figure 9  
Mine Open Day Information Display**

## 5.5 Workforce Induction and Training

A specific induction has been developed for this project (Appendix 1). The induction will make personnel aware of the management practices designed to minimise impacts on the environment and community from the project

## **6 COMMITMENTS BY KCGM**

This section contains commitments KCGM makes for this project (6.1) and appraises relevant Ministerial Conditions and Commitments (6.2) from the Consultative Environmental Review-Fimiston Mine and Waste Dumps (August 1990).

In the undertaking of this project KCGM will comply with all relevant mining and environmental statutes including:

- New commitments made in this document;
- Existing mining lease conditions;
- Existing environmental Ministerial Conditions and Commitments; and
- Any new conditions imposed.

### **6.1 Commitments for this Project**

**Table 2  
Commitments by KCGM for the  
Southern Extension of the Environmental Noise Bund and Waste Rock Dump**

<b>Commitment</b>	<b>Objective</b>	<b>Action</b>	<b>Timing</b>	<b>Audit verification</b>
<b>1. KCGM will rehabilitate and make safe areas involved in this operation</b>	To maintain an adequate level of safety and to improve the site's environmental quality and amenity	Rainfall will be managed by preparing rehabilitation sites so as to encourage water harvesting and infiltration	During and after completion	KCGM AER will document rehabilitation completion status
		Potable water will be used on all final rehabilitation faces if needed for dust suppression	During works	By inspection
<b>2. KCGM will minimise the production of dust</b>	To ensure that the amenity of residential and business areas are not unduly affected by dust from the project	Water trucks and water cannons will water areas that could form dust. Dust binding agents will also be used (if required)	Tool box meetings by KCGM site supervisor and contractors, planning and maintaining work areas and responding to changing conditions	By inspection
		During potential periods of dust formation, visual checks will be made on a regular basis by supervisors	During works	By inspection
		The site superintendent shall take corrective action to control dust levels in response to complaints or where dust levels may have an adverse effect	During works	KCGM complaints database

Commitment	Objective	Action	Timing	Audit verification
KCGM will monitor <b>dust</b> levels near the operation		Employees and contractors will receive formal induction and training covering procedures for dust control	During works	KCGM training records database
		A high-volume dust monitor will regularly monitor dust levels.	During Works	KCGM AER
3. KCGM will minimise <b>noise</b> production  KCGM will monitor <b>noise</b> levels near the operations	To ensure the amenity of residential and business areas are not unduly affected by noise from the operations	The construction of the noise bund will only occur between 7a.m. and 7p.m., Monday to Saturday (excluding public holidays). KCGM will also implement recommendations and suggested management techniques referred to in the Noise Assessment Report (Appendix 3 of this report and section 4.7)	During works	By Inspection and KCGM Complaints database.
		Employees and contractors will receive formal induction and training covering procedures for noise control	During works	KCGM Training database
		Continual noise monitoring will be maintained via existing noise monitors.	During works	KCGM AER
4. KCGM will implement a <b>public consultation</b> and information program and respond to complaints, concerns or interest	To keep the public informed and to minimise inconvenience to neighbours	The KCGM "Public inquiry line" will be used to register and respond to complaints concerns and inquiries in accordance with the KCGM procedure	During works	Public complaints register
		Information will be provided to interested parties and feedback sought	Prior to and during works	Copies of information provided
		Information articles will be published in local newspapers	During works	Copies of articles provided

## 6.2 Existing Ministerial Conditions and Commitments

Table 4 lists the Ministerial Conditions associated with the Consultative Environmental Review: Mine and Waste Dumps –Fimiston (1990) which are relevant to the Southern Extension of the Environmental Noise Bund and Waste Rock Dump and the associated commitments.

**Table 3  
Ministerial Statement 188 (Fimiston Mine and Waste Dumps)  
Southern Extension of the Environmental Noise Bund and Waste Rock Dump**

Number	Requirement	Document Reference
<b>Ministerial Conditions</b>		
M5	In order to ensure that there are no unacceptable detrimental effects from noise, vibration and dust from this project on the amenity of nearby residents, the proponent shall, within 6 months of the date of this statement (24 October 1991), prepare and subsequently implement a noise and vibration monitoring and management programme to the satisfaction of the Environmental Protection Authority and a dust monitoring and management programme to the satisfaction of the Environmental Protection Authority on advice from the Goldfields Dust Abatement Committee.	Noise, dust and vibration monitoring programmes implemented for the Fimiston Operations will continue. Management plans are detailed in Section 4.6, 4.7 and 4.8 in this document.
M6	Prior to the dumping of waste on the proposed north-east or south-east waste dumps within 500 metres of residences, the proponent shall prepare and implement a management plan for waste dumping to ensure that there is no unacceptable detrimental effect on the residents, to the satisfaction of the Minister for the Environment on advice from the Environmental Protection Authority.	Entire document.
M8	The proponent shall be responsible for decommissioning and removal of the plant and installations and rehabilitating the site and its environs, to the satisfaction of the Environmental Protection Authority. At least six months prior to decommissioning, the proponent shall prepare and subsequently implement a decommissioning and rehabilitation plan, to the satisfaction of the Department of Mines on advice from the Golden Mile Mining Development Planning Committee.	Refer to Section 3 and 4.9 in this document.

<b>Proponent Commitments</b>		
P1	KCGM will prepare and implement, by December 1992, an Environmental Management Programme (EMP) for all of its operations in agreement with the Environmental Protection Authority and the Department of Mines.	Entire document.
P2	KCGM undertakes to prepare annual reports of the Mining and Rehabilitation sub-programme of the broader Environmental Management Programme, as agreed with the Environmental Protection Authority and the Department of Mines.	KCGM Annual Environmental Report
P4	KCGM will develop a surface drainage system incorporating sediment detention systems and a water quality monitoring programme. The results of the sampling will be included within the annual report and updated annually.	Refer to Section 4.9 in this document.
P5	In association with the Goldfields Dust Abatement Committee and Kaltails, KCGM will install and support a Dust Monitoring Programme within the Kalgoorlie-Boulder area. The data obtained will be made available to the Environmental Protection Authority via the Goldfields Dust Abatement Committee.	Dust monitoring will continue
P6	KCGM will undertake a programme of noise monitoring to ensure continued compliance with occupational health and public nuisance noise requirements. If considered necessary an ongoing monitoring strategy will be devised.	Noise monitoring will continue.
P7	KCGM will implement a progressive rehabilitation programme as outlined in Section 4.3 (Consultative Environmental Review Mine and Waste Dumps-Fimiston KCGM August 1990) as agreed with the Environmental Protection Authority in consultation with the Department on Mines.	KCGM Annual Environmental Report

## **7 BIBLIOGRAPHY**

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