

SAINT ELMO PROJECT FACTSHEET: NOISE AND VIBRATION



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Epic Environmental Pty Ltd (Epic) are working with Multicom Resources Limited (Multicom) on the approvals process for the Saint Elmo Project (the Project), including the Environmental Impact Statement (EIS).

EXISTING ENVIRONMENT

The existing acoustic environment surrounding the Project area is characterised as rural with noise currently generated by grazing operations and occasional vehicles. There are no other mining operations in the area.

The relatively flat terrain with low level vegetation means the existing landscape does not provide natural noise buffers that may reduce the distance by which noise emitted from the Project may travel. The Project is bordered to the south by the Flinders Highway, and the Mount Isa Line (also referred to as Northern Rail Line), both running east-west along the southern border of the site.

The existing background noise environment is very quiet, as expected of a rural area. The background noise levels at night were dominated by natural noises (i.e. insects, livestock, occasional distant vehicle).



Figure 1: View from the Saint Elmo homestead toward the MIA

SENSITIVE RECEPTORS

The predominant land use in the surrounding area is grazing with homestead residences located on rural properties. There are five (5) sensitive receptors within 10 km of the Project (Figure 1), and they are all considered residences.

The closest sensitive receptor is the Saint Elmo Homestead located approximately 270 m west of the Mining Lease (ML) boundary. Julia Creek township is located approximately 13 km west of the mining lease boundary and is unlikely to be impacted by noise from the mine.

Three noise loggers were deployed during late May 2018 and early June 2018 to measure the existing background noise levels in the vicinity of the Project at Saint Elmo, Argyle and

Burwood Stations. Complementary noise monitoring was also undertaken at Lindfield Station in May 2018.

POTENTIAL IMPACTS

The major determinant of noise impacts over the lifetime of the mine is the extent of the mining fleet, its proximity to residences and the degree of shielding provided by intervening terrain and pit walls. Two worst-case operation scenarios have been used to demonstrate the impact of the Project on the existing noise environment.

Road and Rail Transport

The majority of transportation activities will be carried out via rail. Road transport will be used for some aspects of the Project (i.e. delivery of goods, transport of workforce), however, the noise level of these activities is considered negligible.

There will be noise associated with rail transport (it is estimated that four trains would enter and leave the Project site every week, equivalent to eight train movements), loading and unloading of trains (several hours of forklift operation at the loading out point). The noise level of these activities is minor compared to the permanent onsite mobile mining fleet.

Impact on Fauna

Understanding of the impacts of noise on fauna is limited. Noise can affect an animal's physiology and behaviour and, when at chronic levels or frequency, can have harmful effects on energy budget, reproductive success and longevity.

PRIMARY SOURCES OF NOISE

Noise emissions due to construction activities are expected to be minor. The construction activities will be short-lived and located relatively far from the sensitive receptors. Hence, noise emissions from these sources were not modelled in this assessment, rather the focus of the assessments was on mining operations.

The main source of noise during the construction and operation of the Project will be plant and equipment necessary for open cut mining.

During mine decommissioning and closure, truck movements related to rehabilitation activities and infrastructure removal will be the primary sources of noise and vibration. As the Project site will be progressively rehabilitated, vegetation will likely provide additional buffering for noise attenuation during the decommissioning phase.

NOISE AND VIBRATION IMPACT ASSESSMENT

During Scenario 1 (Year 6) noise levels at Saint Elmo homestead are in excess of criteria by 18 dBA but are compliant at all other sensitive receptors. To provide context, the predicted noise levels range between those you would hear in a library, regular conversation at home or a quiet suburb. For Scenario 2 (Year 23) noise levels are in excess of criteria by up to 32 dBA at Saint Elmo homestead (equivalent to conversation in restaurant, background music, refrigerator), by 3 dBA at Argyle Homestead at night (equivalent to quiet rural area, whisper) and 1 dBA at Garomna (equivalent to quiet bedroom at night).

It is considered that the calculated scenario night time exceedances at Argyle and Garomna Homesteads will be attenuated by the construction of physical barriers (e.g. bunds), equipment mitigation (e.g. attenuation packages for mobile equipment) and/or by reducing equipment fleet usage at night.

Blasting is not proposed for the mine, and therefore modelling of vibration and airblast was not assessed as part of the Project.

MITIGATION MEASURES

During the construction, operation and decommissioning of the Project, noise mitigation measures will be applied onsite to minimise the impacts at Saint Elmo Homestead and to prevent exceedances at all other sensitive receptors. Mitigation measures will include:

- Optimisation of mine layout to shield noise generation;
- Strategic planning the haul locations to limit total haulage required;
- Regular servicing and maintenance of mining equipment exhaust systems;
- Limiting speeds of mining equipment;
- Considering noise abatement fittings on mine vehicles prior to procurement;
- Construction equipment siting and operation; and
- Installation of noise monitoring station/s at relevant homesteads;
- Where complaints are received, measures for reducing noise levels will be identified as part of the complaint response process.

Further information

If you would like further information on the Project, please:

- Email saintelmo@epicenvironmental.com.au; or
- Freecall 1800 270 844; or
- Visit <http://saintelmoproject.com.au>