Appendix K

Noise

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Scoping Report

Noise Impact of the Exxaro Leeuwpan Coal Expansion Project

Magisterial District of Delmas
Victor Khanye Local Municipality
Mpumalanga

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1. Introduction

The proposed expansion of the coal mine activities will take place in the vicinity of existing residential areas and mines. The purpose of the noise impact assessment will be to determine what impact such an expansion project will have on residents and noise sensitive areas.

Noise is defined as unwanted sound and the sound travel through the air as waves outward from the source exerts as a sound pressure level that is measured in decibels (dB). The pressure wave's travel through the air exerts a force registered by the human ear as sound.

In any given situation and/or area is an existing ambient noise level (prevailing ambient noise level) and the introduction of a new activity in an area can be determined, evaluated and controlled for the receptor of the sound to perceive it as acceptable or an intrusion.

The noise impact assessment forms part of the specialist noise investigation process of the proposed opencast expansion on Block OL and OI and the purpose of the noise study will be to:

1. Determine the prevailing ambient noise levels along the boundary of entire mining area and along the boundaries of the proposed new mining areas and at the noise sensitive area within and in the vicinity of the study area.

2. Quantify the alleged impact of noise on the prevailing ambient levels and the outdoor environment.

3 Make mitigatory recommendations for the proposed project to comply with the International and relevant Noise Control Regulations.

The following issues will be investigated:

- Would the proposed expansion project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise control regulations?

- Would the proposed expansion project result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

- Would the proposed expansion project result in a substantial temporary or periodic increase in the prevailing ambient noise levels in the project vicinity above levels existing without the project?

- Would the proposed expansion proposed expansion project result in a substantial permanent increase in the prevailing ambient noise levels in the project vicinity above levels existing without the project?

- Would the project expose people residing or working in the project area to excessive noise levels?

The noise impact assessment that will be done within the boundaries of the mine as well as at the abutting areas to the mine will identify critical areas and a noise management plan will be designed to control the possible noise intrusion.

2. Baseline Description

Two opencast mines (OL and OI) and the discard dumps with the associated activities will be part of the expansion project.

The project phase will be:

- Construction;
- Operational; and the
- Decommissioning phases.

During the above phases associated noise generation will take place and such will be investigated and addressed.

Construction Phase:

Dump Truck, Portable air compressor, Concrete mixer trucks, Scraper, Jackhammer, Dozer, Paver, Generator, Pile driver, Backhoe.

Operational Phase:

Graders, Excavators, Front end loaders, Bulldozers, Mobile cranes, Mobile, Water tankers, Light duty trucks, Compressors, Pumps and other small equipment, Blasting processes.

Decommissioning Phase:

Rehabilitation of the disturbed areas.

It is proposed to make use of the following six-stage process approach at the two proposals to assessment and mitigation:

Step1- Define the project requirements and noise problem – gather technical support information;
Step 2 – Agree on the assessment criteria, establish baseline noise environment and determine extent of the noise impact of initial proposal;
Step 3 – Identify and agree on noise mitigations options;
Step 4 – Assess noise impact against criteria of Step 2 and evaluate key considerations and significance for each mitigation option;
Step 5 – Determine optimal noise control solution;
Step 6 – Review, implement, monitor and audit.

3. Potential impacts of the different processes

During the construction phase of the opencast pits and the discard dump the noise from the earthmoving equipment will have to be assessed and controlled. Any other construction activity will also have to be evaluated.

The operational phase is when the noise will be of permanent nature as it is envisaged that the mining is scheduled to take place over a period of 10 years. All the activities, stationary and moveable will be evaluated and it will be determined if the noise contains high or low frequency sound, is of pure tone or contains a wide divergence in frequency spectra between the source and the ambient. Is the noise impulsive in nature and the duration of the noise source?

Potential impacts:

- Low frequency sound;
- High pitch sounds;
- Pit activity noise;
- Hauling noise;
- Blasting;
- Day and night time noise.

4. Plan of study of the EIA

The existing baseline noise information and the new noise information will be used to assess the possible noise impact during the EIA phase and this information will be used to compile the EMP. The plan of study for the EIA phase will consist out of the following:

- Noise impact assessment and determine the prevailing ambient noise levels at all 4 wind directions at the three open cast pits, discard dump and along the railway line and the conveyer line.
- Evaluate such information with existing baseline information and/or noise standards.
- Establish noise contours
- Design and recommendations on engineering control measures
- Make use of the six-step model to ensure compliance to environmental noise control standards.
- Compile a noise management control document.

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