

<b>Information Document</b>		<b>Document No.</b>	<b>110685</b>
<b>Document Title</b>	<b>Monitoring Program – Noise and Vibration Emissions</b>		
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<b>Major Process</b>	Environment	<b>Sub Process</b>	
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## 1 SCOPE

This Monitoring Program (MP) describes the environmental monitoring activities undertaken by BHP Billiton Olympic Dam Corporation Pty Ltd (ODC) for the purpose of quantifying the levels of noise and vibration as a result of operations, assessing the performance of the control measures used to limit these impacts and to meet relevant legal and other requirements.

This MP addresses a number of distinct elements of noise and vibration monitoring. For each element, the MP sets out some background information, the purpose of the monitoring and the deliverables which are produced as a result of the monitoring. The MP also includes a description of the methods for measuring achievement of **compliance criteria** and the movement of trends towards **leading indicators** (where applicable).

This MP covers noise generating activities associated with the Olympic Dam operations and Expansion activities on the Special Mining Lease, and includes noise and vibration impacts at Roxby Downs. This MP does not cover management issues associated with occupational noise exposures.

(State 17a)

### 1.1 Responsible ODC personnel

The Olympic Dam Asset President is responsible for ensuring that all legal and other requirements described in this MP are met.

ODC employs staff with experience and qualifications to fulfil the requirements of this MP.

### 1.2 Review and modification

This MP is reviewed annually. Major changes or amendments following the review are documented in Appendix A (see section 5) of this MP.

## 2 DETAILED PROCEDURE

### 2.1 Background

Ambient noise levels at Roxby Downs were monitored during the development of the Olympic Dam Expansion Draft Environmental Impact Statement 2009 (DEIS). These noise measurements indicated that the influence of the existing operation on noise levels at the nearby sensitive receivers was negligible. The commencement of surface mining operations in the open pit area has the potential to increase noise and vibration levels at nearby sensitive receivers.

### 2.2 Purpose

To monitor noise and vibration levels at sensitive receivers near the mining, processing and associated operations.

### 2.3 Deliverable(s)

Provide records of noise and vibration monitoring to assess compliance with the relevant criteria contained within the Environment Protection (Noise) Policy 2007, the **Environmental Protection and Biodiversity Conservation (EPBC) Act 1999 Approval Conditions** and **Major Development Approval Conditions** regarding noise and vibration limits at sensitive receivers as a result of operational activities. These vary by location, and are detailed in Table 2.1. (State 23, 109, 121, 127)

### 2.4 Method

(State 17ki, 17kii, 17kiv, 17kv)

#### 2.4.1 Noise

Noise monitoring data are collected in accordance with the requirements of the Environment Protection (Noise) Policy 2007. Noise criteria are shown in Table 2.1.

Noise monitoring will be undertaken following the commencement of blasting activities in the open pit mine. Depending on the magnitude of the measured noise levels and the nature of the mining operations, further monitoring may be undertaken as necessary to be confident that compliance with the criteria is being achieved

Noise monitoring includes attended and logger-based monitoring and is undertaken at the most affected accommodation within Roxby Downs (see Figure 2.1).

#### 2.4.2 Vibration and airblast overpressure

Vibration and airblast overpressure is monitored in accordance with Australian Standard AS2187.2 (2006). Vibration and overpressure criteria are shown in Table 2.1.

Vibration and overpressure monitoring is undertaken following the commencement of blasting activities in the open pit mine, concurrently with the noise monitoring and is timed to coincide with mine blasting activities, the most significant source of operationally-generated vibration emissions.

**Table 2.1: Noise and vibration criteria**

Location	Day (7am to 10pm)	Night (10pm to 7am)
Roxby Downs	47 dBL <sub>Aeq</sub>	40 dBL <sub>Aeq</sub>
		60 dBL <sub>Amax</sub>
Ground vibration (Roxby Downs))	5 mm/s for 95% of blasts per year, 10 mm/s maximum	
Overpressure (Roxby Downs )	115 dBL for 95% of blasts per year, 120 dBL maximum	

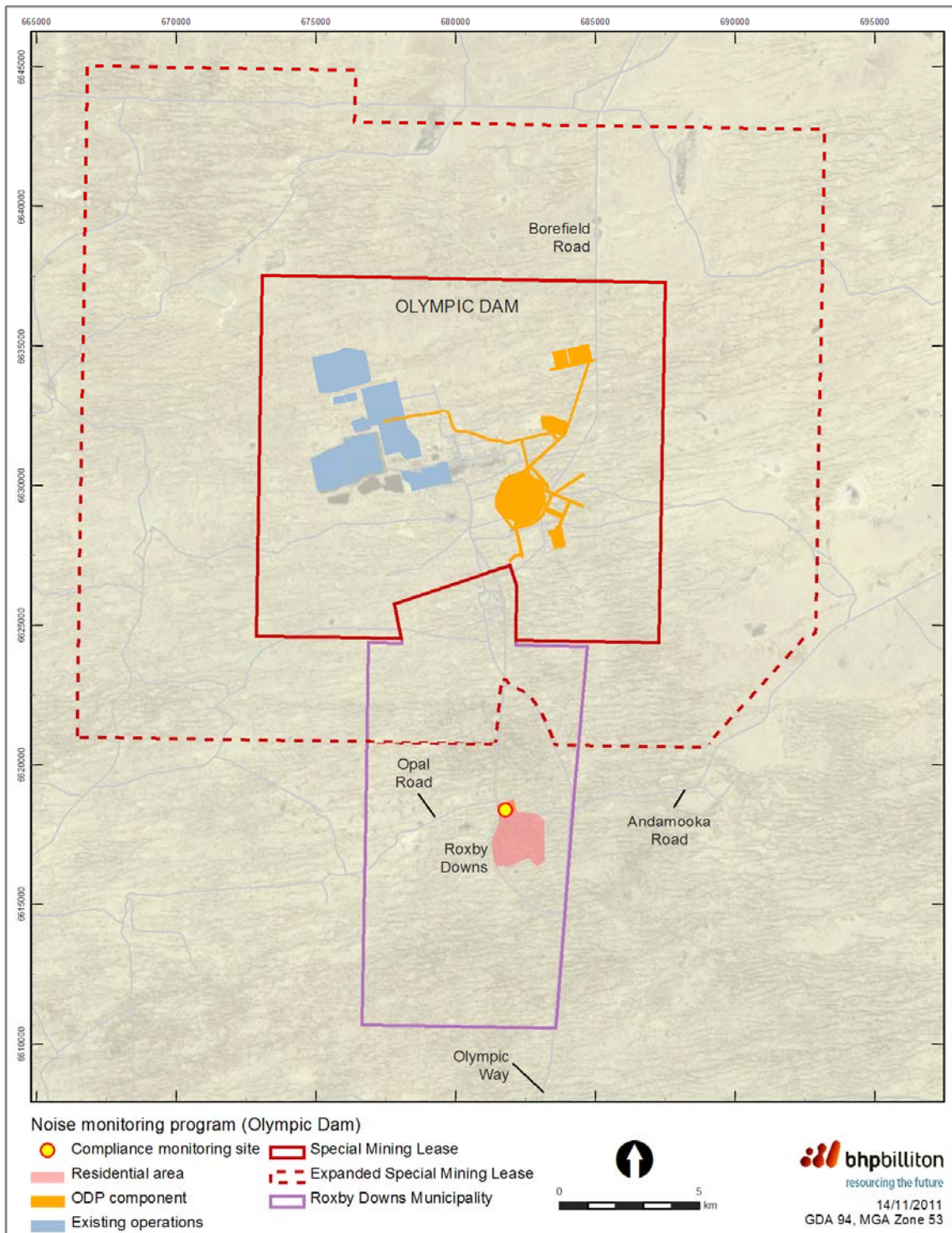


Figure 2.1: Noise and vibration monitoring locations at Olympic Dam

### 3 COMMITMENTS

#### 3.1 Reporting

The results and a discussion of the findings are presented in the Environmental Management and Monitoring Report as outlined in the **Environmental Management Manual** (EMM).

#### 3.2 Summary of commitments

(State 17ki)

**Table 3.1: Summary of commitments**

Action	Parameter	Frequency
Monitor	Noise, vibration and airblast overpressure levels at Roxby Downs.	Annually post commencement of blasting activities in the open pit mine
Report	Compliance with the relevant noise requirements of the Environment Protection (Noise) Policy 2007 and, the <b>Major Development Approval Conditions</b> and the relevant airblast overpressure and vibration requirements specified in AS2187.2:2006.	Annually
Review	The Noise and Vibration Emissions MP and modify as appropriate.	Annually

## 4 DEFINITIONS AND REFERENCES

### 4.1 Definitions

Throughout the EPMP some terms are taken to have specific meaning. These are indicated in bold text in the documentation and are defined in the glossary in section 5 of the EMM. Defined terms have the same meaning wherever they appear in bold text. Some other terms and acronyms are also defined in the glossary, but do not appear in bold text.

### 4.2 References

Environment Protection Authority (SA) 2007, *Environment Protection (Noise) Policy 2007*, Environment Protection Authority, Adelaide.

Standards Australia 2006, *Explosives – Storage and Use Part 2: Use of Explosives, AS 2187.2* Standards Australia, Sydney.

## 5 APPENDIX A: AMENDMENTS TO MONITORING PROGRAM – NOISE AND VIBRATION EMISSIONS FY13

Where applicable a summary of major changes to this MP is provided. Individual changes have not been itemised.

Section	Description	Change Explanation
Section 2	Removal of references to Hiltaba Village, Pimba, Port Augusta and traffic and associated criteria.	Updated to reflect changed Olympic Dam operational scope.