Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
Suite 34, 11 Preston Street, Como, W.A. 6152
P.O. Box 219, Como, W.A. 6952
Telephone: (08) 9367 6200
Facsimile: (08) 9474 2579
Email: hsa@hsacoustics.com.au

# BHP BILLITON LIMITED

# VEHICLE MOVEMENT NOISE ASSESSMENT
## YEELIRRIE PROJECT

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OUR REF: 11838-3-09060

# CONTENTS



# APPENDICES

# 1. INTRODUCTION

BHP Billiton Limited commissioned Herring Storer Acoustics to carry out an acoustical assessment of noise emissions from vehicle movements for the proposed Yeelirrie Project.

# 2. SUMMARY

During the life of the mining operation, the average daily vehicle movements to and from site would be 37. Of these 37 movements, 26 are truck movements, with the remainder being light vehicles.

Given the anticipated number of vehicle movements, we believe that in the worst case, for vehicles travelling along the Goldfields Highway, increase in the overall traffic movements would be around 9%. An increase of 9% would result in an increase in the level of noise received at residences located along the transport route of 0.4 dB(A). This increase in noise would be considered negligible. Therefore, noise emissions from vehicle movements to and from site do not require to be assessed.

# 3. CRITERIA

## 3.1 ENVIRONMENTAL PROTECTION (NOISE) REGULATIONS 1997

Under Regulation 3 "Noise Emissions from vehicles, trains etc." of the *Environmental Protection (Noise) Regulations 1997*, noise emissions from registered vehicles operating on a road is exempt from the Regulations.

With regards to reversing alarms, it is noted that Regulation 3(c) states:

*3 Nothing in these regulations applies to -*

*(a) noise emissions from the propulsion and braking systems of motor vehicles operating on roads (as defined in section 5 (1) of the Road Traffic Act 1974);*

*(b) noise emissions from trains or aircraft (other than model aircraft and trains operating on railways with a gauge of less than 70 centimetres); or*

*(c) noise emissions from safety warning devices fitted to motor vehicles, mining and earth moving machinery, vessels and buildings if -*

*(i) it is a requirement under another written law that such a device be fitted; and*
*(ii) it is not practicable to fit a safety warning device that complies with the written law under which it is required to be fitted and emits noise that complies with these regulations.*

*(d) noise emissions from an emergency vehicle as defined in Regulations 103(1) of the Road Traffic Act Code 1975.*

### 3.2 STATE PLANNING POLICY 5.4 "ROAD AND RAIL TRANSPORT NOISE AND FREIGHT CONSIDERATIONS IN LAND USE PLANNING"

The Western Australian Planning Commission (WAPC) released on 22 September 2009 State Planning Policy 5.4 *"Road and Rail Transport Noise and Freight Considerations in Land Use Planning"*. However, this policy is not applicable in this situation.

Within the policy it states that:

*"This policy **Does not Apply**-*

- *Retrospectively to noise from existing railways or major roads in the vicinity of an existing noise-sensitive land use; and*
- *To proposals involving an increase in traffic along an existing railway or major road in the absence of a major redevelopment.*

## 4. VEHICLE MOVEMENTS

Is it understood that the number of vehicle movements would be as per the attached Figure A.

With regards to vehicle movements there are 2 cases that should be considered, they being:

- Constructions
- Operation

### 4.1 CONSTRUCTION

In summary, during construction of the mine, the approximate number of vehicle movements per day would be as listed below in Table 1.

**Table 1 – Vehicle Movements**

| | |
|---|---|
| Construction Activities | 17 |
| Construction Equipment & Admin | 10 |
| Vehicles, Trucks & Buses | 0 |
| Production & Ongoing Operations | 1 |
| Yeelirrie Exports | 0 |
| **Totals**<br>Light Vehicles, Buses Etc<br>Heavy Trucks | <br>0<br>28 |

However, from information received we understand that some of the loads, as outlined below, would be transported from either Geraldton or Port Hedland:

| | |
|---|---|
| Geraldton | 471 loads over the 2 years of construction. |
| Port Hedland | 32 loads over the first 6 months of construction. |

With the diversity of movements, the number of vehicles travelling along the Goldfields Highway would be approximately 23 per day.

## 4.2 OPERATIONAL MODE

In summary, during the operation of the mine, the approximate number of vehicle movements per day would be as listed below in Table 1.

**Table 2 – Vehicle Movements**

| | |
|---|---|
| Construction Activities | 1 |
| Vehicles, Trucks & Buses | 11 |
| Production & Ongoing Operations | 24 |
| Yeelirrie Exports | 1 |
| **Totals**<br>Light Vehicles, Buses Etc<br>Heavy Trucks | <br>11<br>26 |

We note that in the first year of operation, while some construction activity is still being undertaken, the average number of vehicle movements per day would be 46, which would be the maximum vehicle movements associated with this project.

From the information supplied, we understand that the section of road of greatest acoustical significant in terms of greatest impact would occur in the section between Leinster and Leonora. For the section south of Leinster, the AADT in 2005 was 267, 49% of which were heavy vehicles. We also note that the average compound growth rate for the past 10 years was 6.66%. Projecting forward, the AADT in the year 2011/2012 would be approximately 393.

We believe that the above traffic flow would currently represent, before the commencement of the Project, the lowest daily traffic flow along the transport route. Therefore, along this section of the transport route, the introduction of the vehicle movements associated with the Yeelirrie Project would provide the greatest percentage increase in vehicle movements and represent the greatest increase in noise that would be received at residence located along the route. Thus, we believe that for this project the above would be considered as the worst case scenario.

# 5. NOISE EMISSIONS

Based on the projected number of vehicle movements, the increase in vehicle movements due to the Yeelirrie project, for the worst case scenario being during the first year of operation, along the Goldfields Highway would equate to around 9%, which in terms on noise emissions from the road equates to an increase in noise level of approximately 0 dB(A). In acoustical terms, an increase of 0 dB(A) would be considered an negligible increase.

Note : Noise accumulates logarithmically, therefore, a doubling of the road traffic volume would equate to an increase in noise level of 3 dB(A).

The increase in noise received at premises located along the traffic route, due to the vehicle movements to and from site, would be negligible and do not require an acoustic assessment.

# APPENDIX A

References

# References


1. *Environmental Protection (Noise) Regulations 1997*, as Ammended 2000.

2. State Planning Policy 5.4 *"Road and Rail Transport Noise and Freight Considerations in Land Use Planning"* The Western Australian Planning Commission (WAPC) 22 September 2009

3. Yeelirrie Trip Planning & Commodity Estimates – Base Curve v3.0 15 October 2009

4. Main Roads Western Australia "*1997 – 1998 Traffic Patterns, Rural Permanent Count Sites"*