

5 October 2016

WM Project Number: 09341-V3
 Our Ref: WCL051016RH_Ltr-rpt
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Whitehaven Coal Limited
 Mark Edmondson
 PO Box 600
 GUNNEDAH NSW 2380

Dear Mark

Re: Whitehaven Temporary Road Haulage Increase Modification - Road Traffic Noise Assessment

Introduction

Wilkinson Murray Pty Limited have been commissioned by Whitehaven Coal Limited (Whitehaven) to prepare a Road Traffic Noise Assessment to support a Temporary Road Haulage Increase Modification for the Tarrawonga and Rocglen Coal Mines under Section 75W of the *Environmental Planning and Assessment Act, 1979* (the Modification).

The approvals for the Tarrawonga Coal Mine, Rocglen Coal Mine and Vickery Coal Project permit a combined total of 3.5 million tonnes per annum (Mtpa) to be transported on the Approved Whitehaven Run-of-Mine (ROM) Coal Road Transport Route (Approved Road Transport Route) (Figure 1) prior to the Kamilaroi Highway overpass being built and 4.5 Mtpa following commissioning of the overpass, in accordance with the haulage hours outlined in the Project Approvals (11_0047) and (10_0015), respectively (Table 1).

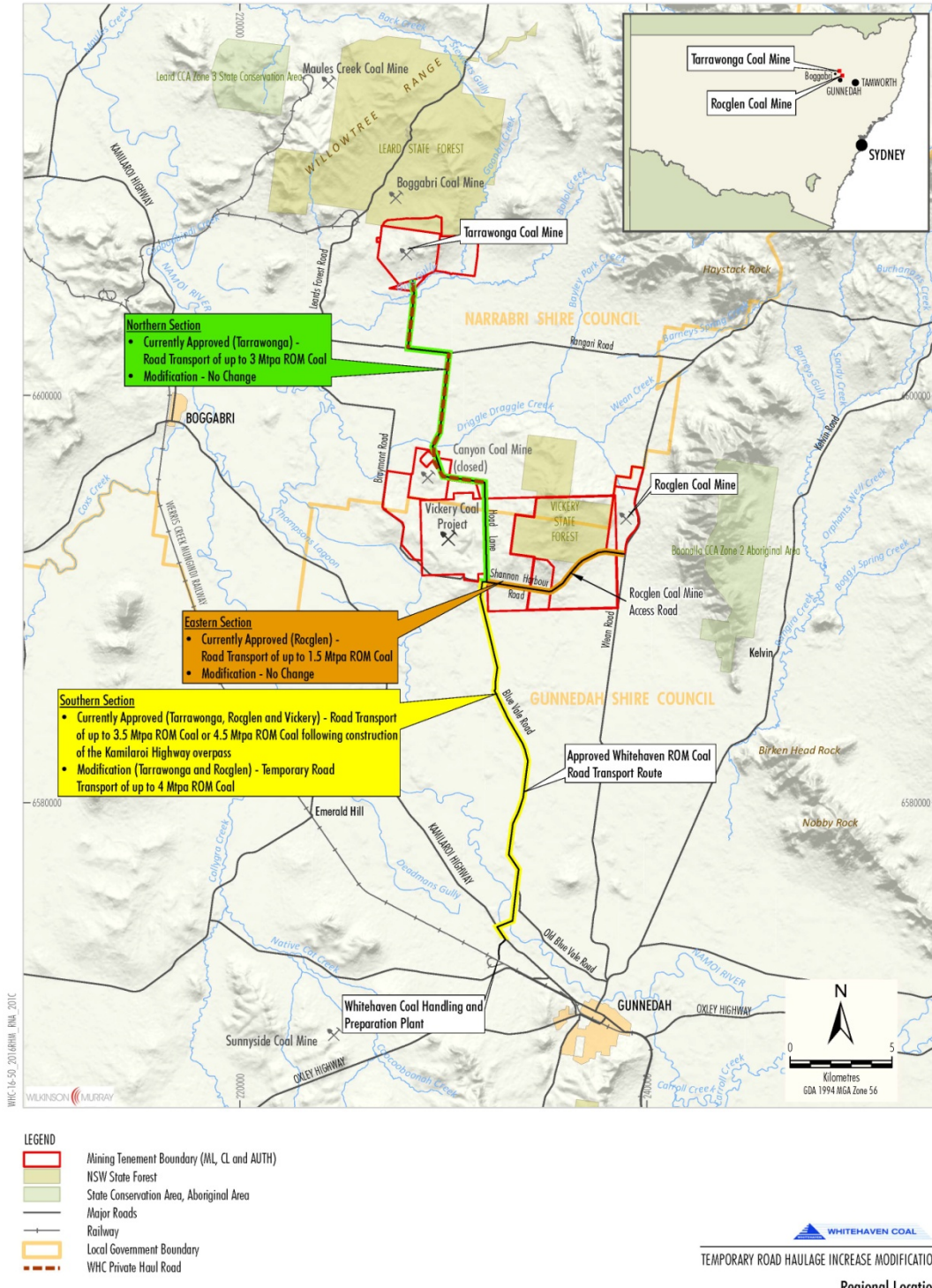
Table 1 Approved ROM Coal Road Haulage Hours for the Tarrawonga and Rocglen Coal Mines

Day	Tarrawonga Coal Mine	Rocglen Coal Mine
Weekday	6.00 am to 9.15 pm	7.00 am to 9.15 pm
Saturday	7.00 am to 5.15 pm	7.00 am to 5.15 pm
Sunday	-	-
Public Holidays	-	-

Note: The last haul trucks leave the Tarrawonga or Rocglen Coal Mines at the specified end time.

Whitehaven seeks to increase haulage of coal from the Tarrawonga and Rocglen Coal Mines along the Approved Road Transport Route, from 3.5 Mtpa to 4.0 Mtpa for calendar years 2016 and 2017 (without construction of the Kamilaroi Highway overpass).

Figure 1 Temporary Road Haulage Increase Modification



Source: LPMA - Topographic Base (2010); NSW Department of Industry (2015)

Figure 1

It should be noted that this assessment does not address traffic associated with the Vickery Coal Project as truck movements associated with this project are expected to commence after this Modification is completed.

The Road Traffic Noise Assessment focuses on Blue Vale Road and the Kamilaroi Highway, as these roads are potentially affected by additional traffic noise generated by the Modification.

Road Traffic Noise Criteria

Criteria for assessment of noise from traffic on public roads are set out in the *Road Noise Policy (RNP)* (Department of Environment, Climate Change and Water, 2011). The Kamilaroi Highway would clearly be considered as an "arterial" or "sub-arterial" road under this policy. The Approved Road Transport Route along Blue Vale Road has previously been identified as a "principal haulage route" (Spectrum Acoustics, 2005) and, for the purpose of noise assessment, the *RNP* considers this to be equivalent to an arterial/sub-arterial road.

Table 3 of the *RNP* is copied in Table 2 with the relevant sections highlighted noting the requirements to consider "principal haulage routes" as arterial roads (Section 2.2.2 of the *RNP*).

Table 6 of the *RNP* setting the "relative increase" criterion is also copied, although the proposed changes in traffic volumes associated with the Modification will not result in increases greater than 12 decibels (dB).

Table 2 Criteria for Traffic Noise – Residential Receivers

Table 3 Road traffic noise assessment criteria for residential land uses

Road category	Type of project/land use	Assessment criteria – dB(A)	
		Day (7 a.m.–10 p.m.)	Night (10 p.m.–7 a.m.)
Freeway/ arterial/ sub-arterial roads	1. Existing residences affected by noise from new freeway/arterial/sub-arterial road corridors	L _{Aeq} , (15 hour) 55 (external)	L _{Aeq} , (9 hour) 50 (external)
	2. Existing residences affected by noise from redevelopment of existing freeway/arterial/sub-arterial roads	L _{Aeq} , (15 hour) 60 (external)	L _{Aeq} , (9 hour) 55 (external)
	3. Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments		
Local roads	4. Existing residences affected by noise from new local road corridors	L _{Aeq} , (1 hour) 55 (external)	L _{Aeq} , (1 hour) 50 (external)
	5. Existing residences affected by noise from redevelopment of existing local roads		
	6. Existing residences affected by additional traffic on existing local roads generated by land use developments		

Table 6 Relative increase criteria for residential land uses

Road category	Type of project/development	Total traffic noise level increase – dB(A)	
		Day (7 a.m.–10 p.m.)	Night (10 p.m.– 7 a.m.)
Freeway/arterial/ sub-arterial roads and transitways	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road	Existing traffic $L_{Aeq, (15 \text{ hour})} + 12 \text{ dB}$ (external)	Existing traffic $L_{Aeq, (9 \text{ hour})} + 12 \text{ dB}$ (external)

Where the Assessment Criteria are already exceeded, further consideration of potential noise impacts need to be considered. Reference is also made to sections 3.4 and 3.4.1 of the *RMP*. Section 3.4 notes that “In assessing feasible and reasonable mitigation measures, an increase of up to 2 dB represents a minor impact that is considered barely perceptible to the average person.”

Section 3.4.1 notes “For existing residences and other sensitive land uses affected by **additional traffic on existing roads generated by land use developments**, any increase in the total traffic noise level should be limited to 2 dB above that of the corresponding ‘no build option’.”

Road Traffic Volumes

Projected traffic volumes associated with the Project are expected to have potential implications for noise at residences set back from Blue Vale Road and the Kamilaroi Highway.

Table 3 presents the projected traffic volumes for calendar year 2017 associated with the approved haulage at the maximum ROM coal production rate associated with the Tarrawonga and Rocglen Coal Mines. The additional traffic generated by the Modification would consist of 87 heavy vehicles during the day and one (1) at night.

Table 3 Average Weekday Traffic Volumes associated with Approved Haulage at Maximum ROM Coal Production Rate (incl. Tarrawonga and Rocglen Coal Mines)

Road	Road Category	Calendar Year	Day		Night	
			Light	Heavy	Light	Heavy
Blue Vale Road south of Shannon Harbour Road	Principal Haulage Route	2017	194	624	70	14
Blue Vale Road northeast of Kamilaroi Highway	Principal Haulage Route	2017	916	744	126	34
Kamilaroi Highway between Blue Vale Road and CHPP	Arterial road	2017	2638	1285	419	94

Table 4 summarises the projected traffic volumes with the additional traffic associated with the Modification.

Table 4 Average Weekday Traffic Volumes with Modification

Road	Road Category	Calendar Year	Day		Night	
			Light	Heavy	Light	Heavy
Blue Vale Road south of Shannon Harbour Road	Principal Haulage Route	2017	194	711	70	15
Blue Vale Road northeast of Kamilaroi Highway	Principal Haulage Route	2017	916	831	126	35
Kamilaroi Highway between Blue Vale Road and CHPP	Arterial road	2017	2638	1372	419	95

Road Traffic Noise Impact – Blue Vale Road

There are two (2) principal receivers along Blue Vale Road between Old Blue Vale Road and Shannon Harbour Road.

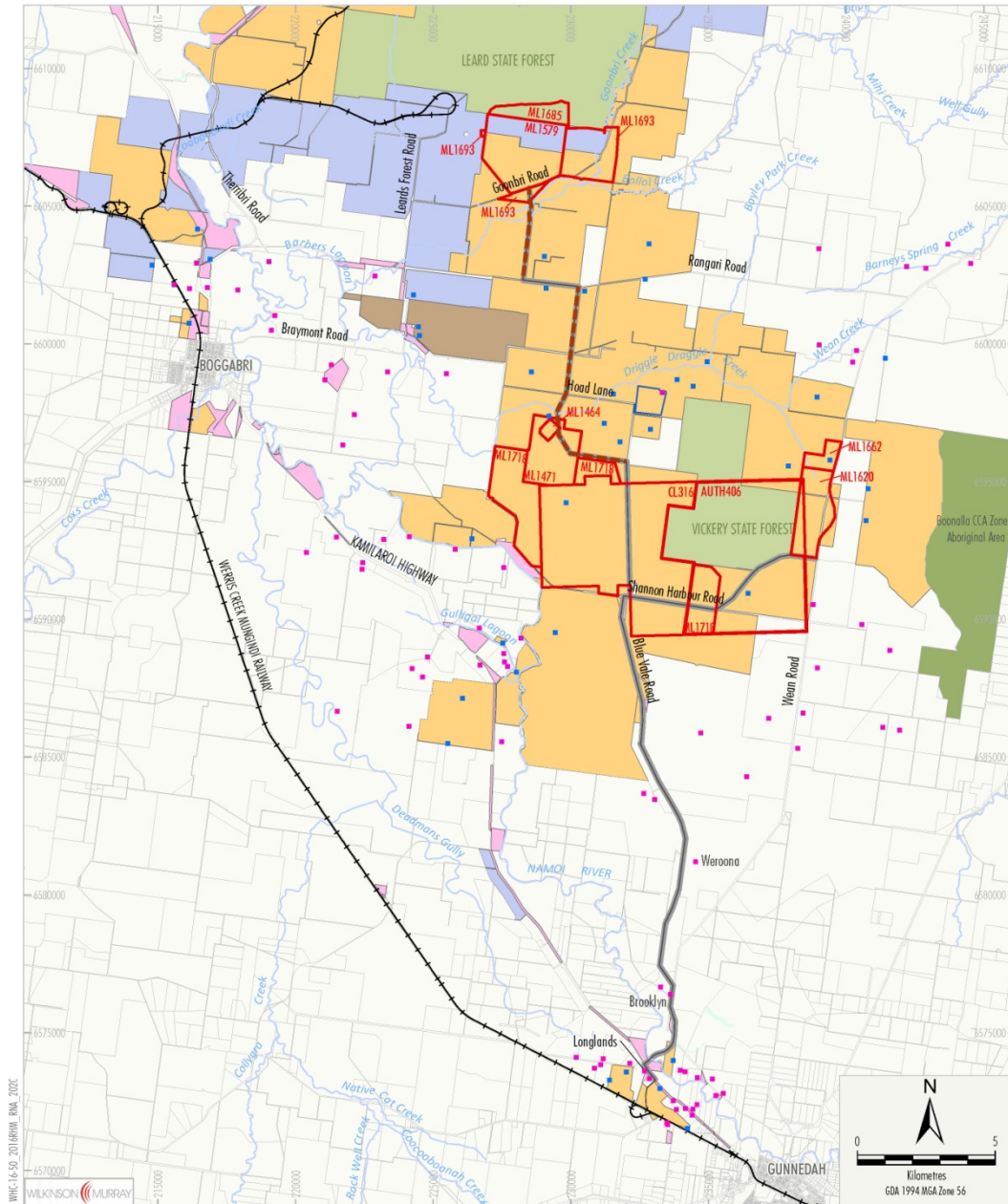
The closest residential receiver on Blue Vale Road south of Shannon Harbour Road is the Weroona receiver approximately 280 metres (m) from Blue Vale Road (Figure 2). The closest residential receiver on Blue Vale Road north-east of the Kamilaroi Highway is the Brooklyn receiver approximately 70 m from Blue Vale Road (Figure 2). Based on the traffic data presented in Table 3 and Table 4, calculated traffic noise levels at the Weroona and Brooklyn receivers have been predicted and are presented in Table 5 and Table 6, respectively.

Table 5 Calculated L_{Aeq} Traffic Noise Levels (dB) at the Weroona Receiver (along Blue Vale Road south of Shannon Harbour Road)

Scenario / Compliance	2017	
	Day	Night
	$L_{Aeq,15hr}$	$L_{Aeq,9hr}$
Approved Haulage	48.8	36.9
Total with Modification	49.3	37.1
Increase compared with Approved Haulage	0.5	0.2
Criteria	60	55
Compliance with Base Criteria	Yes	Yes
Compliance with +2 (with Approved Haulage)	n/a	n/a

Review of Table 5 indicates that the predicted traffic noise levels with the Modification are within the relevant road traffic noise assessment criteria at the Weroona receiver. It follows that the maximum “relative increase” criterion of 12 dB as set out in the *RNP* is also met.

Figure 2 Receivers Location



- LEGEND**
- Mining Tenement Boundary (ML, CL and AUTH)
 - State Conservation Area, Aboriginal Area
 - State Forest
 - Crown Land
 - Whitehaven Option Land
 - Whitehaven Owned Land
 - Whitehaven/Idemitsu Boggabri Coal Joint Owned Land
 - Idemitsu Boggabri Coal Owned Land
 - Privately Owned Land
 - Mine-owned Dwelling
 - Private Dwelling
 - Railway
 - WHC Private Haul Road
 - Approved Road Transport Route

Source: Department of Land and Property Information - Land Tenure (2016); Department of Industry (2016); Whitehaven Coal (2016)

WHITEHAVEN COAL
 TEMPORARY ROAD HAULAGE INCREASE MODIFICATION
 Road Noise Receivers

Figure 2

Table 6 **Calculated L_{Aeq} Traffic Noise Levels (dB) at the Brooklyn Receiver (along Blue Vale Road north-east of Kamilaroi Highway)**

Scenario / Compliance	2017	
	Day	Night
	$L_{Aeq,15hr}$	$L_{Aeq,9hr}$
Approved Haulage	58.3	48.4
Total with Modification	58.7	48.5
Increase compared with Approved Haulage	0.4	0.1
Criteria	60	55
Compliance with Base Criteria	Yes	Yes
Compliance with +2 (with Approved Haulage)	n/a	n/a

As shown in Table 6 the predicted traffic noise levels with the Modification are within the relevant road traffic noise assessment criteria at the Brooklyn receiver. The maximum "relative increase" criterion of 12 dB as set out in the *RNP* is also met.

As the predicted traffic noise levels at the Weroona and Brooklyn receivers meet the proposed criteria, then the criteria would be met at all other receivers along Blue Vale Road.

Road Traffic Noise Impact – Kamilaroi Highway

There are residential receivers on the Kamilaroi Highway between Blue Vale Road and the Whitehaven Coal Handling and Preparation Plant (CHPP). The closest residential receiver on the Kamilaroi Highway would be the Longlands receiver (Figure 2) approximately 70 m from the road.

Traffic noise levels at the closest residential receiver, namely the Longlands receiver, have been calculated and are presented in Table 7.

Table 7 **Calculated L_{Aeq} Traffic Noise Levels (dB) at the Longlands Receiver (along Kamilaroi Highway)**

Scenario / Compliance	2017	
	Day	Night
	$L_{Aeq,15hr}$	$L_{Aeq,9hr}$
Approved Haulage	61.1	53.1
Total with Modification	61.4	53.2
Increase compared with Approved Haulage	0.3	0.1
Criteria	60	55
Compliance with Base Criteria	No	Yes
Compliance with +2 (with Approved Haulage)	Yes	n/a

Review of Table 7 shows a negligible 1 dB exceedance of the daytime base criterion with or without the additional traffic associated with the Modification. The increase in noise associated with the Modification is less than 2 dB.

As the predicted traffic noise levels at the Longlands receiver meets the proposed criteria then the criteria would be met at all other receivers along the Kamilaroi Highway between Blue Vale Road and the CHPP.

Conclusion

The Road Traffic Noise Assessment has found that coal haulage noise levels resulting from the Modification would be similar to noise levels associated with the approved haulage.

No exceedances are expected at any of the residential receivers located along Blue Vale Road. Along the Kamilaroi Highway (between Blue Vale Road and the CHPP), one (1) negligible 1 dB exceedance of the daytime base criterion is expected at the Longlands receiver (with or without the Modification). However, the increase in noise levels with the Modification would be less than 2 dB.

References

- Department of Environment, Climate Change & Water (2011) *NSW Road Noise Policy*.
- Spectrum Acoustics (2005) *Noise and Vibration Assessment for Proposed East Boggabri Coal Mine*.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully

WILKINSON MURRAY



Roman Haverkamp

Senior Engineer

Note

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