



# Section 6

## Summary of Environmental Management and Monitoring Measures

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### PREAMBLE

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*This section has been compiled to record the full range of environmental management and monitoring measures that would be adopted when developing and operating the Quarry. These measures are designed to effectively manage, mitigate, guide and monitor its operation of the Quarry throughout its entire operational life.*

*The measures are presented in tabular form (**Table 6.1**) and record the respective objectives and actions.*

*The actions in **Table 6.1** will be reviewed prior to the determination of the development application for the Proposal to remove any actions that duplicate draft conditions within the draft development consent.*

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**Table 6.1**  
**Summary of Environmental Measures and Monitoring Measures**

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Desired Outcome	Action	Timing <sup>1</sup>
<b>1. Traffic and Transport</b>		
Transport operations are undertaken with minimal impact on other road users and residents.	1.1 Continue to implement a Driver's Code of Conduct and include the following additional information. <ul style="list-style-type: none"> <li>Vehicle checking procedures.</li> <li>Details of all known hazards on the haulage route including current school bus stop locations.</li> </ul>	Ongoing
	1.2 Provide a contribution to Tenterfield Shire Council for the maintenance of the roads along the transport route during the ongoing life of the quarry based on the provisions of the <i>Tenterfield Shire Council Section 94 Development Contributions Plan 2013</i> .	Ongoing
	1.3 Maintain a complaints management system to appropriately respond to any complaints received.	Ongoing
	1.4 Maintain a self-imposed speed limit such that trucks would travel at speeds no greater than 80km/hr on Mount Lindesay Road and Old Ballandean Road and no greater than 30km/hr on the Quarry access road.	Ongoing
Ensure drivers are aware of their responsibilities within the Project Site and during transportation of raw materials	1.5 Ensure that the Driver's Code of Conduct is: <ul style="list-style-type: none"> <li>signed by all drivers employed or contracted by the Applicant;</li> <li>is included in induction and training processes; and</li> <li>retained with drivers at all times during Quarry-related activities.</li> </ul>	Ongoing
<b>2. Air Quality</b>		
Site activities are undertaken without exceeding the nominated air quality criteria.	2.1 Install and use misting sprays on mobile crushing and screening equipment.	Ongoing
	2.2 Limit blasting and secondary rock breakage during periods of high winds or extremely dry weather where it is practical to do so.	Ongoing
	2.3 Water unsealed roads in the event that dust becomes a nuisance during periods of westerly winds.	As required
	2.4 Ensure unsealed internal roads are appropriately constructed and graded where necessary to limit dust lift-off from transportation activities.	As required
	2.5 Traffic on internal unsealed roads within the Project Site is to be limited to a speed no greater than 10km/hr to reduce dust lift-off.	Ongoing
	2.6 Traffic on the Quarry access road is to be limited to a speed no greater than 30km/hr to reduce dust lift-off.	Ongoing
	2.7 Restrict load size to ensure materials do not extend above truck sidewalls and ensure all loads leaving the Quarry Site are fully covered.	Ongoing
	2.8 Maintain the complaints management system to appropriately respond to any complaints.	Ongoing



**Table 6.1 (Cont'd)**  
**Summary of Environmental Measures and Monitoring Measures**

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Desired Outcome	Action	Timing <sup>1</sup>
<b>3. Noise and Vibration</b>		
All activities are undertaken in a manner such that noise emissions do not exceed intrusiveness criteria nor significantly impact on neighbouring landowners and/or residents.	3.1 Limit transportation noise by ensuring: <ul style="list-style-type: none"> <li>all trucks comply with RMS's noise limits at all times;</li> <li>all drivers sign and follow the Driver's Code of Conduct; and</li> </ul>	Ongoing
	3.2 Fit all equipment on the Quarry Site with standard noise limiting controls such as engine covers and exhaust silencers and broad-band reversing alarms.	Ongoing
	3.3 Ensure that all project-related vehicles are regularly serviced and engine efficiencies are maintained at a standard that limits truck noise.	Ongoing
All blasting activities are undertaken in a manner such that impacts do not exceed the nominated criteria nor significantly impact on neighbouring landowners and/or residents.	3.4 Blasting would be restricted to the hours of 10:00 am to 3:00pm, Monday to Saturday as specified Section 2.13.	Ongoing
	3.5 Blasting would take place no more than once per day as specified in the ANZECC guidelines.	Ongoing
<b>4. Water Resources</b>		
Sediment dams have the capacity to accommodate a 5-day 90 <sup>th</sup> percentile rainfall event.	4.1 Ensure that dams are constructed to have the capacity requirements identified in Section 5.4.5	Within six months of receipt of development consent
Capture of sediment-laden water flows from Proposal-related disturbance and prevention of uncontrolled discharge of sediment-laden water from the Site.	4.2 Maintain the structural integrity and capacity of sediment dams to allow adequate volume for settlement and storage of sediments throughout the life of the Proposal.	Ongoing
	4.3 Where required, excavate retained sediment from control structures and sediment dams, placing removed sediment within overburden stockpiles for use in rehabilitation.	As required
Prevention of hydrocarbon contamination of water on the Site	4.4 Where practical, service all equipment at the Sunnyside Crushing and Screening Plant.	Ongoing
	4.5 All possible care is to be taken to avoid spillage of hydrocarbons when refuelling of equipment is undertaken within the Project Site.	Ongoing



**Table 6.1 (Cont'd)**  
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Desired Outcome	Action	Timing <sup>1</sup>
<b>5. Biodiversity</b>		
Avoid impacts on native flora and fauna.	5.1 Retain all remnant vegetation within the Quarry Site beyond the areas approved for clearing.	Ongoing
	5.2 Where practical, avoid removal of any hollow-bearing trees or large habitat trees (for example those located along the boundary between the proposed disturbance areas and remnant vegetation) for potential existing and future use by native fauna.	Ongoing
Minimise or mitigate unavoidable impacts on native flora and fauna.	5.3 A program of weed control would be undertaken to ensure native plants are not overgrown during their early periods of growth.	Ongoing
	5.4 Undertake vegetation clearing operations, where practicable, between April and September to limit adverse impacts on tree dependent avifauna and microchiropteran bats.	Ongoing
	5.5 Adopt a procedure to ensure all trees to be cleared are inspected prior to clearing and encourage any fauna to vacate the area.	Ongoing
	5.6 Salvage tree trunks, major limbs and, if practicable, minor branches for use in rehabilitation of the Quarry Site.	Ongoing
	5.7 Directly transfer stripped soil materials onto rehabilitation areas, where practicable, to maximise the opportunity for retention of the natural seed stock, and thereby maximise the revegetation of the final landform with endemic species.	Ongoing
	5.8 Confine, where practicable, vehicular access to formed and marked roads and tracks and limit vehicle speeds within the Quarry Site to limit the potential for vehicle trauma to wildlife.	Ongoing
Undertake rehabilitation of the Quarry Site to provide for long-term conservation of native flora and fauna.	5.9 Revegetate the Quarry Site as described in Section 2.14.	As areas become available
	5.10 Ensure species used during rehabilitation operations are consistent with vegetation community types located within the vicinity of the area to be rehabilitated and are suitable for the proposed final landform and land use.	During rehabilitation activities
	5.11 Monitor all areas of progressive and final rehabilitation and undertake remedial action in the event that rehabilitation does not comply with the relevant completion criteria.	Ongoing



**Table 6.1 (Cont'd)**  
**Summary of Environmental Measures and Monitoring Measures**

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Desired Outcome	Action	Timing <sup>1</sup>
<b>6. Cultural Heritage</b>		
Minimise the potential for adverse Proposal-related impacts on Aboriginal and non-Aboriginal heritage values.	6.1 Include cultural heritage awareness in the site induction and staff training purpose, with the site induction to be prepared in consultation with an archaeologist and the RAP(s), if available.	Ongoing
	6.2 Should items of cultural heritage significance be discovered within the Quarry Site all works in the area would be ceased and an appropriate buffer established. Council, BCD and other relevant parties would be contacted as soon as practical. If human remains are suspected the police will be contacted.	Ongoing
<b>7. Soil and Land Resources</b>		
Prevent excessive soil deterioration during stripping and transportation.	7.1 Soils would not be stripped or replaced during extremely wet or dry conditions and where possible soil stripping would be avoided between December and February each year.	Ongoing
Maximise the viability of soil resources for site rehabilitation.	7.2 Soil stockpiles would be seeded and fertilised if natural regeneration is unsuccessful.	Ongoing
<b>8. Visibility</b>		
Shield operational areas from vantage points including residences and along Mount Lindesay Road	8.1 Develop the Quarry in a manner that utilises the existing topography and vegetation to shield activities as much as possible.	Ongoing
<b>9. Public Safety Hazards</b>		
Minimise the potential for hydrocarbon contamination.	9.1 Hydrocarbons and hazardous materials would only be purchased from licensed suppliers for the transport of dangerous.	Ongoing
	9.2 Hydrocarbon waste would be disposed of by a licenced waste contractor to a licenced waste facility.	Ongoing
	9.3 Hydrocarbon spill kits would be located in the demountable office to ensure spill response and clean up can be carried out immediately following the detection of any spills.	Ongoing
	9.4 Develop and implement a spill management procedure.	Ongoing
Minimise the bush fire attack risk within the processing area	9.5 Maintain a minimum Asset Protection Zone of approximately 40m between forest vegetation and any built structures within the processing area	Ongoing



**Table 6.1 (Cont'd)**  
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Desired Outcome	Action	Timing <sup>1</sup>
<b>9. Public Safety Hazards (Cont'd)</b>		
Minimise the risk of fire ignition on the Quarry Site and transport route	9.6 Refuelling would be undertaken within cleared areas of the Quarry Site.	Ongoing
	9.7 Engines in all vehicles would be turned off during refuelling.	Ongoing
	9.8 No smoking policy would be enforced in designated areas of the Quarry Site.	Ongoing
	9.9 Fire extinguishers would be maintained within all site vehicles and mobile equipment.	Ongoing
	9.10 No smoking policy would be enforced in designated areas of the Quarry Site.	Ongoing
	9.11 No throwing cigarette butts from product trucks along the product delivery route.	Ongoing
	9.12 Water cart available.	Ongoing
<b>10. Social and Economic</b>		
Consider local sources of service and supply contactors	10.1 Continue to source local suppliers and service contractors from within the Tenterfield Shire LGA where it is practicable to do so.	Ongoing
Consider employment and training opportunities for locals	10.2 Continue to give preference to employment candidates who live within the Tenterfield Shire LGA where it is practical to do so.	Ongoing
Minimise impacts on members of the local community	10.3 Continue to implement a Driver's Code of Conduct to ensure the safety of all road users and communities through which product transport trucks would pass.	Ongoing
	10.4 Continue to implement a complaint management procedure or protocol to ensure that any complaint received is dealt with decisively and appropriately.	Ongoing



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